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DIRECTORATE OF DISTANCE EDUCATION

M.A (JOURNALISM AND MASS COMMUNICATION)

Second Year – Third Semester

309 31 – GRAPHIC COMMUNICATION

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BLOCK I: DESIGN AND ITS PRINCIPLES

UNIT I

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Chapters

1.1. INTRODUCTION

Though people are adequately familiar with the term 'design', when it comes to defining and explaining the concept, it's becomes complicated and clouded. Design, generally, has a larger role to play than merely creating visual appeal—functionality. When it comes to graphic communication, the traditional role of design has been to improve the visual appearance and pass the intended message effectively. Design methodology emerged in the 1960s as an independent scientific discipline. This chapter looks into the theory of design methodology as a source of inspiration to understand the basic concepts and fundamentals of design.

1.2. OBJECTIVES

After you complete this unit, you will be able to

- ✓ Understand the basic concepts of design
- ✓ Know what goes into creating a good design
- ✓ Make decisions related to design
- ✓ Understand the underlying principles of design

1.3. DESIGN: DEFINITION AND FUNDAMENTALS

You, or for that matter any common human on earth, are exposed to and consume a plethora of media messages on any given day—which are nothing but products of graphic design. You can look around your surroundings and come in contact with print design: the newspapers and magazines that you are reading, the graphics on the front of a cereal box or on the packaging in your cupboards, the information on the billboards and bus shelter posters you pass on your way to work or school, the printed numbers on the dial of the speedometer in your vehicle, the numbers on the buttons in an elevator, on the signage hanging in malls, on the amusing

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front of your friend's T-shirt—or for that matter in the material that you are reading right now. *All of them are products of graphic design!* So many items in your life hold an image that is created to convey some sort of information. And all of these things are designed by someone.

Generally speaking, design is the process of envisioning, planning and creating objects of any kind. It is a very broad concept and its meaning can vary greatly from one field to another.

In the context of graphic communication, however, design has to take a more specific view. Traditionally referred to as graphic design, communication design is the process by which messages and images are organised in a medium to convey information to a targeted audience. The practice of graphic or communication design is founded on crafting visual communications between clients and their audience. The communication must carry a specific message to a specific audience on behalf of the client, and do so effectively—usually within the container of a concept that creates context and builds interest for the project in the viewer.

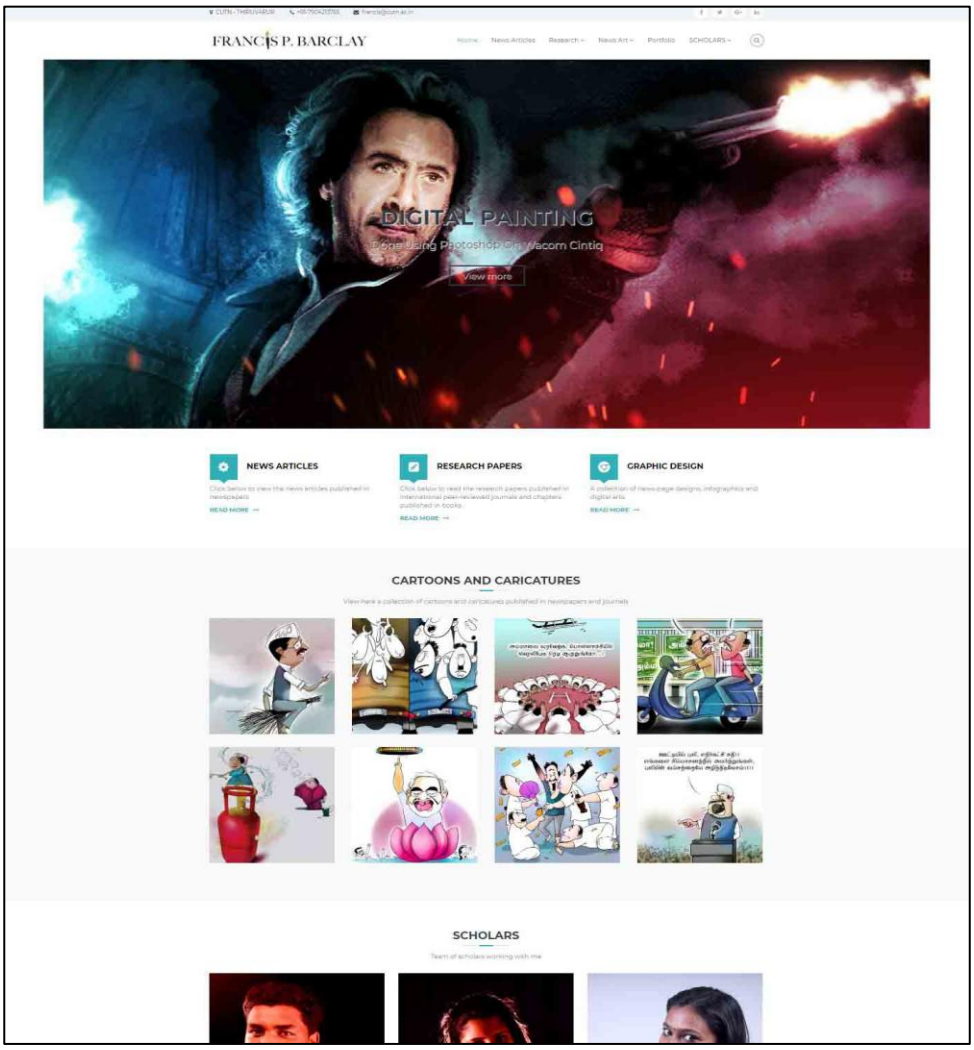

Fig. 1. 1. A website design. Design is about creating meaning. It could be a print advertisement, a website, a business or any other form of communication.

It is the art of visual communication through the use of text, images and symbols. It's about using form, structure, and creativity to get your message across to the few or the many—anyone you want to reach. How do you do this? By creating designs and organising content in a way that is visually interesting, compelling, and appealing to your target audience.

Check your progress - 1
NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

Define graphic design.
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_____
_____

Design determines the face of a communication. The fundamentals of design are the foundation of every visual medium, from fine art to modern web design. For instance, it determines how the advertisements look and how information are arranged within the advertising medium.

It also determines what kind of feeling one gets after viewing the content. They're even present in seemingly unimportant details, like the fonts that make up most compositions.Some basic elements of design include line, shape, form, texture, and balance.

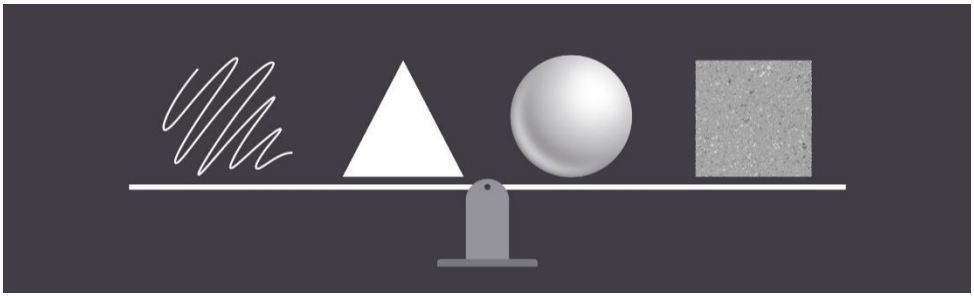

Fig. 1. 2. Basic elements of design.

They might not seem like much on their own, but together, they're part of almost everything we see and create.The fundamentals can be intimidating at first, especially if you don't consider yourself an artist. But keep an open mind—there's a lot they can teach you about working with different assets and creating simple visuals from scratch.

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Fig. 1. 3. Line designs.

A *line* is a shape that connects two or more points. It can be fat, thin, wavy, or jagged—the list goes on. Every possibility gives the line a slightly different feel.When working with lines, pay attention to things like weight, colour, texture, and style. These subtle qualities can have a big impact on the way your design is perceived.A *shape* is any two-dimensional area with a recognizable boundary. This includes circles, squares, triangles, and so on.

Shapes fall into two distinct categories: geometric (or regular) and organic (where the shapes are more free form).Shapes are a vital part of communicating ideas visually.

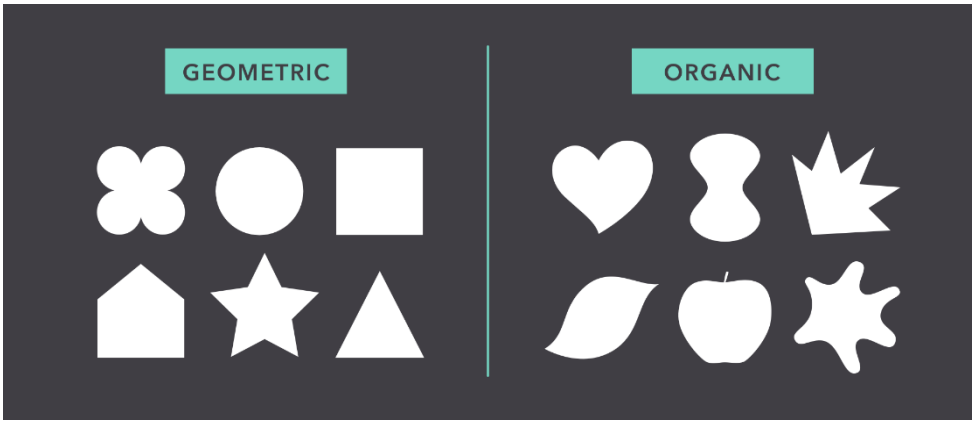

Fig. 1. 4. Geometric and organic shapes.

They give images heft and make them recognizable. We understand street signs, symbols, and even abstract art largely because of shapes.

When a shape becomes 3D, we call it a *form*. Forms make up a variety of things in the real world, including sculptures, architecture, and other three-dimensional objects.However, forms don't have to be three-dimensional shapes. They can also be implied through illustration, using techniques like light, shadow, and perspective to create the illusion of depth.

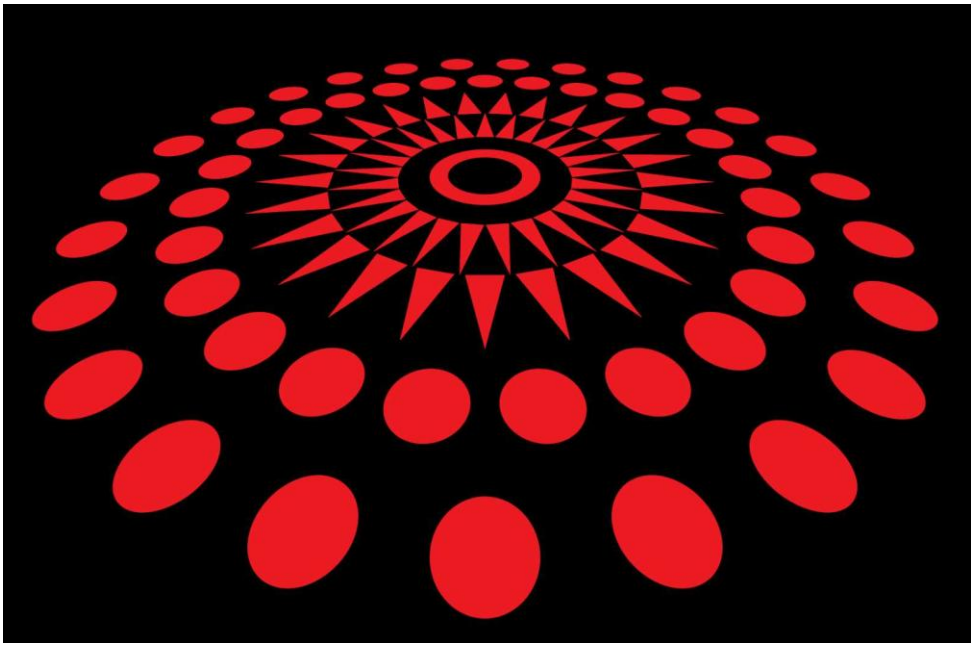

Fig. 1. 5. A two-dimensional image fives the illusion of 3D.

Fig. 1. 6. Texture is the physical quality of a surface. Like form, it can be part of a three-dimensional object.

1.4. PURPOSE AND FUNCTIONS OF A GOOD DESIGN

In 1898, Elias St. Elmo Lewis came up with the acronym AIDA for the stages you need to get consumers through in order for them to make a purchase. Modern marketing theory is now more sophisticated, but the acronym also works well to describe what a design needs to do in order to communicate and get people to act. In order to communicate effectively and motivate your audience, you need to:

A — attract their attention. Your design must attract the attention of your audience. If it doesn't, your message is not connecting and fulfilling its communication intent. Both the concept and the form must stand out.

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I — hold their interest. Your design must hold the audience's interest long enough so they can completely absorb the whole communication.

D — create a desire. Your design must make the audience want the product, service, or information.

A — motivate them to take action. Your design must compel the audience to do something related to the product,service, or information.

Your concept works if it makes your audience respond in the above ways.

Check your progress - 2

NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

What are the purposes of design?

_____

_____

1.5. PRINCIPLES OF DESIGN

We have many words for the frustration we feel when an interface isn't directing us to what we need to know. Loud, messy, cluttered, busy. These wordsexpress our feeling of being overwhelmed visually by content on a screen or page. We need them to express how unpleasant a user experience it is to not know where to direct our attention next. (Porter, 2010, para 1). If everything is equal, nothing stands out. (Bradley, 2011)

The proper composition of visual elements generates not only visual stability, it enhances mood through composition and generates order that prevents visual chaos. Designers use compositional rules in their work to make the reader enter their work and experience a design environment that is calm yet exciting, quiet yet interesting. Compositional rules can be used to generate content as well as organise it.

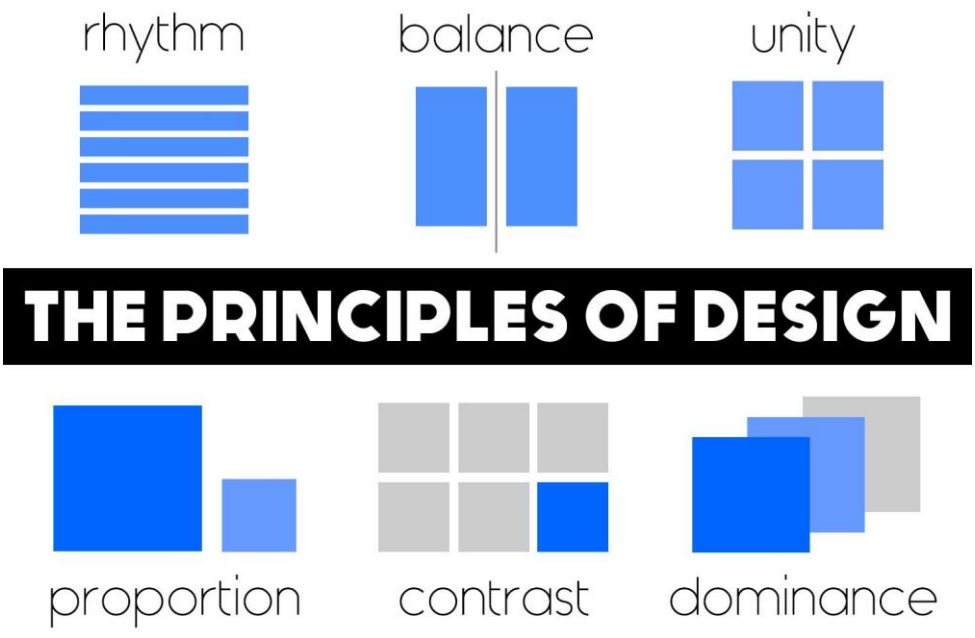

Fig. 1. 7. Principles of design.

Alignment refers to lining up the top, bottom, sides, or middle of a text, composition, or grouping of graphic elements on a page. Often a design composition includes a grid where the alignment of text blocks is dictated by the design of the columns of the grid.

Typographically, horizontal alignment includes flush left (also called left justified or ragged right), flush right (also called right justified or ragged left), centred, and fully justified. Vertical alignment in typography is usually linked to baseline alignment.

A baseline grid exists in digital software that is meant for layout of type and is the invisible line where font characters sit.

Contrast is a visual device that increases the special character of both elements that have been paired.

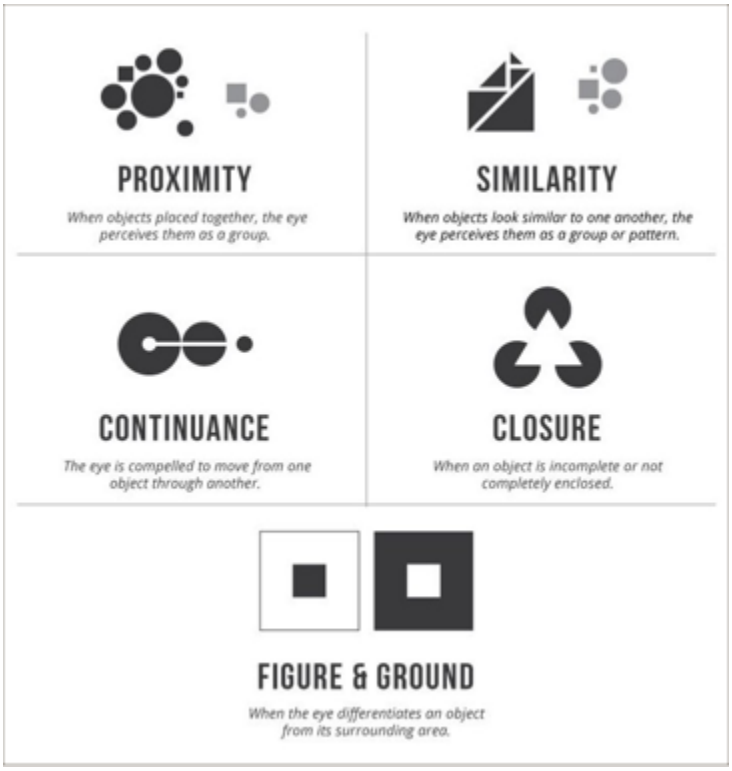

Fig. 1. 8. Proximity, similarity, continuance and closure in design.

Contrast assists composition by creating focal points, and adds energy and visual range to a composition. Using contrast enables us to distinguish the qualities of one object by comparing differences with another. Some ways of creating contrast among elements in the design include the use of contrasting colours, sizes, and shapes.

Emphasis. A focal point in a composition draws the eye to it before the eye engages with the rest of the visual information. This is called emphasis and is achieved by making a specific element gain the attention of the eye. Emphasis is created in graphic design by making only one focal point and clearly emphasising it by placing the elements on the page in positions where the eye is naturally drawn to the proper entry into the

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work. Designers rely on additional compositional principles to support the hierarchy of a composition such as contrast, repetition, or movement.

Movement is made by creating visual instability. Creating the illusion of movement photographically or artistically is not difficult because a blur translates into movement in the mind of the viewer.

However, it is not the only option for a designer. A composition can also achieve movement if the graphic elements are arranged in a way that directs the eye to move in a specific direction. Movement can also be created using overlapping planes that imply depth and distance by becoming progressively smaller and lighter in tone (mimicking depth). Using typography as a visual medium is also an option. Overlapping the text blocks or sentences effectively creates both depth and movement.

Proximity and the Gestalt Theory of Visual Relationships

Proximity of elements is part of Gestalt theory, which is a framework of spatial relationships developed in the 1920s by the German psychologists Max Wertheimer, Wolfgang Kohler, and Kurt Koffka. The term Gestalt means unified whole, and points to the underlying conceptual structure of this framework. Gestalt works because the mind seeks to organise visual information. A composition created using Gestalt principles predetermines how each of the elements within it interacts with the others spatially. In this system of relationships, close proximity of objects, regardless of shape, size, or content, indicates a connection. There are six basic Gestalt principles: (1) similarity, (2) continuation, (3) closure, (4) proximity, (5) figure/ground, and (6) symmetry and order.

Similarity. When visual elements have a similar shape or look as one another, a viewer will often connect the discrete components and see a pattern or grouping. This effect can be used to create a single illustration, image, or message from a series of separate elements. Similarity of medium, shape, size, colour, or texture will trigger a sense of similarity. The sense of grouping will be strengthened or weakened by increasing or decreasing the commonality of the individual elements.

Continuation is the tendency of the mind to see a single continuous line of connection rather than discrete components. The eye is drawn along a path, line, or curve, as long as there is enough proximity between objects to do so. This tendency can be used to point toward another element in the composition, or to draw the eye around a composition. The eye will continue along the path or direction suggested by the composition even when the composition ends, continuing beyond the page dimensions.

Closure is a design technique that uses the mind’s tendency to complete incomplete shapes. The principle works if the viewer is given enough visual information to perceive a complete shape in the negative space. In essence, the mind ‘closes’ a form, object, or composition.

Fig. 1. 9. Principles of design.

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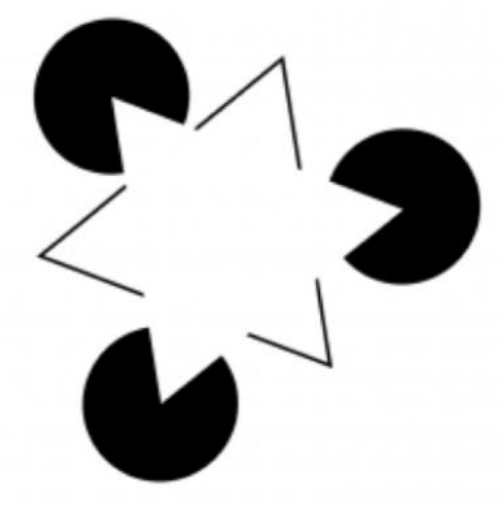

In this example for **Closure**, the triangle is formed by the viewer's mind, which wants to close the shape formed by the gaps and spaces of the adjacent circles and lines. The partial triangle, outlined in black also hints at the missing shape.

Figure/Ground. This principle describes the mind's tendency to see as two different planes of focus, information in both positive and negative space. It works if those spaces are suggestive enough in their composition.

Symmetry and order postulates that a composition should not create a sense of disorder or imbalance, because the viewer will waste time trying to mentally reorder it rather than focus on the embedded content.

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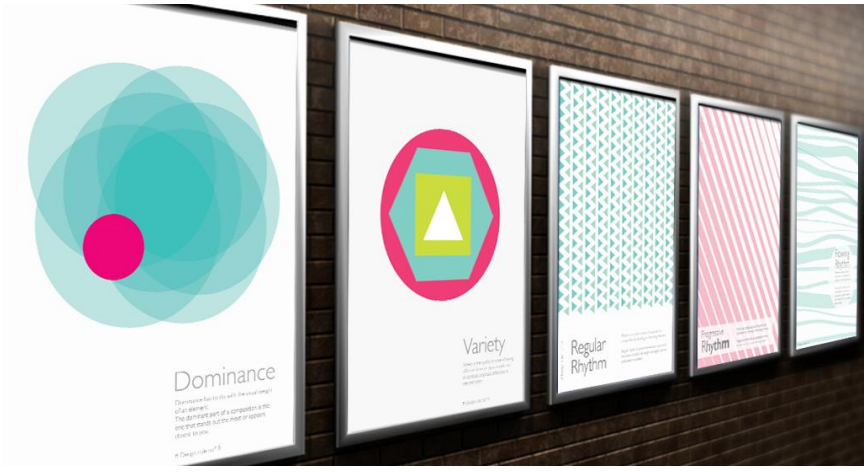
Fig. 1. 10. Repetition and rhythm in graphic design.



Rhythm is integral to the pacing of a design composition and is also necessary for creating a pattern. The pacing of a repeating motif or element at regular or irregular intervals within a design determines the energetic quality of a composition; it also creates a consistent and unifying backdrop for the introduction of new elements.

Repetition creates visual consistency in page designs or in visual identities, such as using the same style of headline, the same style of initial capitals, and the same set of elements, or repeating the same basic layout from one page to another. Excessive repetition, however, creates monotony. This usually leads to viewer boredom and dull, uninteresting compositions for the designer. Be sure to create a design system that allows the repetitions within it to be lively and interesting page after page.

Balance and symmetry are important design qualities because they are deeply embedded in human DNA. Because our bodies and faces are symmetrical, we have a strong association and satisfaction with centred, symmetrical design. Balancing visual elements compositionally calms the tensions and grounds the design in a viewer. This is important if you wish to convey a sense of stability to the viewer.

Fig. 1. 11. Balance, hierarchy and emphasis in graphic design.

Hierarchy: Dominance and Emphasis

Simply put, hierarchy is applying an order of importance to a set of elements. Hierarchical order is apparent in every facet of our lives and is a defining characteristic of our contemporary culture. Hierarchy in composition is conveyed visually through variations of all the elements—size, colour, placement, tonal value, and so on.

Typographic hierarchy is very important in design. A body of text is made more comprehensible by imposing order through a system of titles, subtitles, sections, and subsections. Hierarchy is created when the levels of the hierarchy are clear and distinguishable from one another. Subtle signs of difference are not effective. Typography acts as a tonal voice for the viewer, and must create clear variation in tone, pitch, and melody. Hierarchy is usually created using similarity and contrast. Similar elements have equality in typographic hierarchy. Dominant and subordinate roles are assigned to elements when there is enough contrast between them. The bigger and darker an element is, the more importance it has. Smaller and lighter sizes and tones imply lesser importance.

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1.6. DESIGN DECISIONS

A design rationale is an explicit documentation of the reasons behind decisions made when designing a graphic communication. A design rationale is the explicit listing of decisions made during the design process, and the reasons why those decisions were made. Its primary goal is to support designers by providing a means to record and communicate the argumentation and reasoning behind the design process. It should therefore include:

- the reasons behind a design decision,
- the justification for it,
- the other alternatives considered,
- the trade-offs evaluated, and
- the argumentation that led to the decision.

1.7. LET US SUM UP

Traditionally referred to as graphic design, communication design is the process by which messages and images are organised in a medium to convey information to audience. The practice of graphic or communication design is founded on crafting visual communications between clients and their audience. The communication must carry a specific message to a specific audience on behalf of the client, and do so effectively—usually within the container of a concept that creates context and builds interest for the project in the viewer. The proper composition of visual elements generates not only visual stability, it enhances mood through composition and generates order that prevents visual chaos. Designers use compositional rules in their work to make the reader enter their work and experience a design environment that is calm yet exciting, quiet yet interesting. Compositional rules can be used to generate content as well as organise it.

1.8. UNIT-END EXERCISES

Choose random print advertisements and analyse them using the principles of design outlined in this unit.

1.9. ANSWERS TO CHECK YOUR PROGRESS

1. Define graphic design
   Answer: In the context of graphic communication, however, design has to take a more specific view. Traditionally referred to as graphic design, communication design is the process by which messages and images are organised in a medium to convey information to a targeted audience. The practice of graphic or communication design is founded on crafting visual communications between clients and their audience. The communication must carry a specific message to

a specific audience on behalf of the client, and do so effectively—usually within the container of a concept that creates context and builds interest for the project in the viewer.

2. What are the purposes of design?
   Answer: A — attract their attention. I — hold their interest. D — create a desire. A — motivate them to take action.

1.10. SUGGESTED READINGS

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- William Lidwell, Kritina Holden, Jill Butler. Universal Principles of Design, Revised and Updated: 125 Ways to Enhance Usability, Influence Perception, Increase Appeal, Make Better Design Decisions, and Teach Through Design. Rockport Publishers, 2010.

Donald D. Givone. Digital Principles and Design. Palgrave Macmillan, 2003.

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UNIT II

Chapters

2.1. INTRODUCTION

While Graphic Design as a discipline has a relatively recent history, with thename ‘graphic design’ first coined by William Addison Dwiggins in 1922,graphic design-like activities span the history of humankind: from the caves ofLascaux, to Rome's Trajan’s Column to the illuminated manuscripts of theMiddle Ages, to the dazzling neon of Ginza. In both this lengthy history andin the relatively recent explosion of visual communication in the 20th and 21stcenturies, there is sometimes a blurring distinction and over-lapping ofadvertising art, graphic design and fine art. After all, they share many of thesame elements, theories, principles, practices and languages, and sometimesthe same benefactor or client. In advertising art the ultimate objective is thesale of goods and services. In graphic design, “the essence is to give order toinformation, form to ideas, expression and feeling to artefactsthat documenthuman experience.”

2.2. OBJECTIVES

After you complete this unit, you will be able to

- ✓ Understand the nature and scope of graphic communication
- ✓ Describe the design process
- ✓ Identify with layout stages and types
- ✓ Appreciate contemporary graphic design

2.3. GRAPHIC COMMUNICATION: DEFINITION, NATURE AND SCOPE

Communication is the process by which information and feelings are shared by peoplethrough an exchange of verbal andnon-verbal messages. Graphics are planar displays which use the spatialdistribution of shapes, patterns, textures, images and colourso convey information. Communications that have a graphical representation could come under graphic communication.

Graphic design is a creative process most often involving a client and adesigner and usually completed in conjunction with producers of form (i.e.,printers, programmers, sign makers, etc.) undertaken in order to convey aspecific message or messages to a targeted audience. The term "graphicdesign" can also refer to a number of artistic and professional disciplines thatfocus on visual communication and presentation.

The field as a whole is alsooften referred to as Visual Communication or Communication Design. Variousmethods are used to create and combine words, symbols, and images tocreate a visual representation of ideas and messages.

A graphic designermay use typography, visual arts and page layout techniques to produce thefinal result. Graphic design often refers to both the process designing bywhich the communication is created and the products designs which are generated. Common uses of graphic design include identity logos and branding, websites, publications magazines, newspapers, and book, advertisements andproduct packaging. For example, a product package might include a logo orother artwork, organised text and pure design elements such as shapes andcolour which unify the piece. Composition is one of the most important featuresof graphic design, especially when using pre-existing materials or diverseelements.

Graphic communication as the name suggests is communication using graphic elements. These elements include symbols such as glyphs and icons, images such as drawings and photographs, and can include the passive contributions of substrate, colour and surroundings. It is the process of creating, producing, and distributing material incorporating words and images to convey data, concepts, and emotions.

The field of graphic communications encompasses all phases of the graphic communications processes from origination of the idea (design, layout, and typography) through reproduction, finishing and distribution of two- or three-dimensional products or electronic transmission.

Fig. 2.1. An example of graphics

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*Graphics.*Graphics are visual presentations on some surface, such as a wall, canvas, computer screen, paper, or stone to brand, inform, illustrate, or entertain. Examples are photographs, drawings, line art, graphs, diagrams, typography, numbers, symbols, geometric designs, maps, engineering drawings, or other images. Graphics often combine text, illustration, and colour. Graphic design may consist of the deliberate selection, creation, or arrangement of typography alone, as in a brochure, flier, poster, web site, or book without any other element. Clarity or effective communication may be the objective, association with other cultural elements may be sought, or merely, the creation of a distinctive style.Graphics can be functional or artistic. The latter can be a recorded version, such as a photograph, or an interpretation by a scientist to highlight essential features, or an artist, in which case the distinction with

Check your progress - 1

NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

Define graphic communication.

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_____

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imaginary graphics may become blurred.

Fig. 2.2. An example for visual communication

Visual communication. As the name suggests, it is communication through visual aid. It is the conveyance of ideas and information in forms that can be read or looked upon. Primarily associated with two dimensional images, it includes: signs, typography, drawing, graphic design, illustration, colour and electronic resources. It solely relies on vision. It is a form of communication with visual effect. It explores the idea that a visual message with text has a greater power to inform, educate or persuade a person. It is communication by presenting information through Visual form.

The evaluation of a good visual design is based on measuring comprehension by the audience, not on aesthetic or artistic preference. There are no universally agreed-upon principles of beauty and ugliness.

There exists a variety of ways to present information visually, like gestures, body languages, video and TV. Here, focus is on the presentation of text, pictures, diagrams, photos, et cetera, integrated on a computer

display. The term visual presentation is used to refer to the actual presentation of information. Recent research in the field has focused on web design and graphically oriented usability. Graphic designers use methods of visual communication in their professional practice.

Communication design. It is a mixed discipline between design and information-development which is concerned with how intermission such as printed, crafted, electronic media or presentations communicate with people.

A communication design approach is not only concerned with developing the message aside from the aesthetics in media, but also with creating new media channels to ensure the message reaches the target audience. Communication design seeks to attract, inspire, create desires and motivate the people to respond to messages, with a view to making a favourable impact to the bottom line of the commissioning body, which can be either to build a brand, move sales, or for humanitarian purposes. Its process involves strategic business thinking, utilizing market research, creativity, and problem-solving.

Fig. 2.3. An example for communication design: brochure

*Graphic design.*The term graphic design can refer to a number of artistic and professional disciplines which focus on visual communication and presentation. Various methods are used to create and combine symbols, images and/or words to create a visual representation of ideas and messages. A graphic designer may use typography, visual arts and page layout techniques to produce the final result. Graphic design often refers to both the process (designing) by which the communication is created and the products (designs) which are generated.Common uses of graphic design include magazines, advertisements, product packaging and web design. For example, a product package might include a logo or other artwork, organized text and pure design elements such as shapes and colour which unify the piece. Composition is one of the most important features of graphic design especially when using pre-existing materials or diverse elements.

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2.4. DESIGN PROCESS

The process of developing effective design is complex. It begins with research and the definition of project *goals*. Defining goals allows you to home in on precisely what to communicate and who the audience is. You can then appropriately craft the message you are trying to communicate to them. For example, the goal of a print advertisement in a magazine may be to induce the reader to purchase the product advertised.

If your goal is clear, then the designer will know which medium to choose and what kind of design will be the most effective. In order to design visual materials that communicate effectively, designers must understand and work with the syntax of visual language. Meaning is expressed not only through content but through form as well, and will include both intellectual and emotional messages in varying degrees.

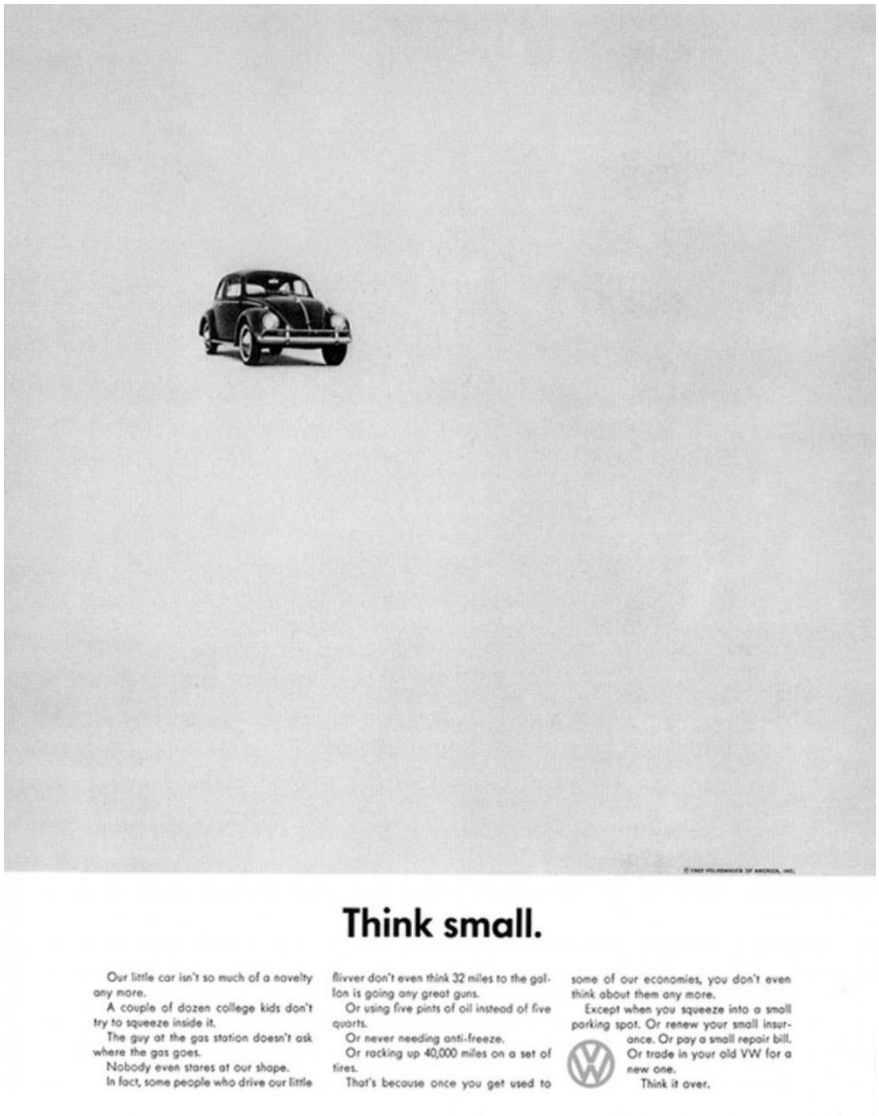

Fig. 2.4. **The ad that changed advertising,** from the 1959 Volkswagen's Think Small campaign.

Designers are responsible for the development of the creative concepts that express the message. A *concept* is an idea that supports and reinforces communication of key messages by presenting them in

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interesting, unique, and memorable ways on both intellectual and emotional levels. A good concept provides a framework for design decisions at every stage of development and for every design piece in a brand or ad campaign. An early example of this is the witty and playful 'think small' Volkswagen Beetle (VW) advertising campaign of the1960s. By amplifying the smallness of its car in a 'big' car culture, VW was able to create a unique niche in the car market and a strong bond between the VW bug and its audience (see Figure 2.4).

In communication design, *form* should follow and support function. This means that what you are saying determines how you say it and in turn how it is delivered to your audience. Design is an iterative process that builds the content and its details through critiquing the work as it develops. Critiquing regularly keeps the project on point creatively and compositionally. Critiquing and analysis allow you to evaluate the effectiveness of the whole design in relation to the concept and problem. The number of iterations depends on the skill of the designer in developing the content and composition as well as properly evaluating its components in critique. In addition, all of this must occur in the context of understanding the technologies of design and production.

As you begin to build and realise your concepts by developing the *content*, the *elements*, and the *layouts*, you must apply compositional and organisational principles that make sense for the content and support the core concept. Compositional principles are based on psychological principles that describe how human beings process visual information.

Designers apply these principles in order to transmit meaning effectively. For example, research has shown that some kinds of visual elements attract our attention more than others; a designer can apply this knowledge to emphasise certain parts of a layout and give a certain element or message importance. These principles apply to all forms of visual materials, digital media, and print. When dealing with text, issues of legibility and readability are critical. Designers organise information through the use of formal structures and typographic conventions to make it easier for the viewer to absorb and understand content. The viewer may not consciously see the underlying structures, but will respond positively to the calm clarity good organisation brings to the text.

As Alex Hass observes in the Graphic Design and Print Production Fundamentals (a Graphic Communications Open Textbook Collective), many designers define communication design as a problem-solving process—the problem or opportunity is how to deliver information effectively to the desired audience. The process that takes the designer from the initial stages of identifying a communication problem to the final stage of solving it covers a lot of ground, and different models can be used to describe it. Some are very complicated, and some are simple. The following sections break the design problem-solving process into four steps: (1) define, (2) research, (3) develop concepts, and (4) implement solutions.

Define. Inventor Charles Kettering is famously quoted as saying "a problem well-stated is half-solved." Clearly the first step in any design activity is to define the communication problem properly. To do this, you will need to meet with clients to establish initial goals and objectives.
Here are some of the questions you should ask:

- What is the purpose of the project?

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- What does the client hope to achieve with it?
- Who is the target audience?
- What is the client's message to this audience?

Conduct Research. Gather and analyse information. The information you collected in the first stage is just a starting point—now you need to do more research in order to fine-tune your goals and process.

Developing Concepts. Concept development is a process of developing ideas to solve specific design problems. The concepts are developed in phases, from formless idea to precise message in an appropriate form with supportive visuals and content. Once you have done your research and understand exactly what you want to achieve and why, you are ready to start working on the actual design. Ideally, you are trying to develop a concept that provides solutions for the design problem, communicates effectively on multiple levels, is unique, and stands out from the materials produced by your client's competitors.The design process looks roughly like this:

- Generating a concept
- Refining ideas through visual exploration
- Preparing rough layouts detailing design direction(s)
- Setting preliminary specifications for typography and graphic elements such as photography, illustration, charts or graphs, icons, or symbols
- Presenting design brief and rough layouts for client consideration
- Refining design and comprehensive layouts, if required
- Getting client approval of layouts and text before the next phase

A concept is not a message. A concept is an idea that contextualises a message in interesting, unique, and memorable ways through both form and design content. A good concept reinforces strategy and brand positioning. It helps to communicate the benefits of the offer and helps with differentiation from the competition. It must be appropriate for the audience, facilitating communication and motivating that audience to take action. A good concept provides a foundation for making visual design decisions. For example, Nike's basic message, expressed by its tagline is "Just Do It." The creative concept Nike has used since 1988 has been adapted visually in many ways, but always stays true to the core message by using images of individuals choosing to take action.

Fig. 2.5. **A good concept provides a foundation for making visual design decisions.** Nike's basic message, expressed by its tagline is "Just Do It."

Solution Implementation. In this step, we are ready to select the final concept options and carry their application through to completion in producing the final design. In other words, the product is designed.

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Check your progress - 2
NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

Explain the concept development in graphic design.

_____
_____
_____

2.5. LAYOUT STAGES AND TYPES

Thumbnails, rough layouts, and comprehensives are forms of visual presentation used by a designerand client at different stages of an idea's development. A developing design is a work in progress thatevolves in accordance with the designer's creativity and the client's approval. Executing a design in aform appropriate to its developmental stage keeps its progress moving quickly.Only through a number of trials (thumbnails) can a designer be assured of the best, most effectivedesign.

Thumbnail sketches (may be called "Thumbs")

A thumbnail is a visual record of the designer's thought processes. They are fast, freewheeling, andquick, passing thoughts. A rough sketch of an initial design idea for the designer's review. Contains allthe visual elements - headline, text, illustration or graphic, company identification. The purpose is toenable the designer to work out the overall design structure of the visual quickly without getting boggeddown in the details.

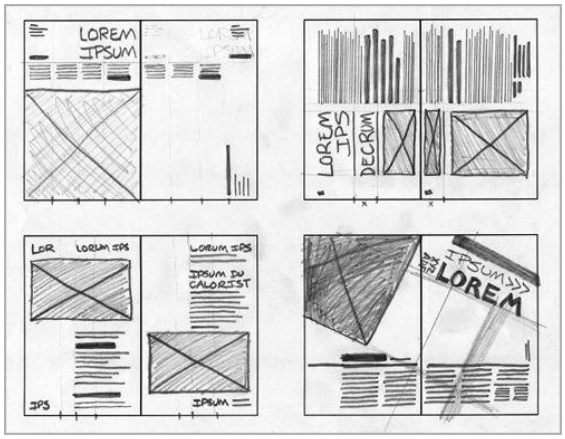

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Fig. 2.6. **A thumbnail sketch** for a news-page design.

- Imperfect, preliminary draft.
- Quick visual idea
- Pencil sketch
- Typically 1/4 the size of the end product
- In proportion to the end product
- At least four, but do as many as necessary to ensure the exhaustion of all ideas
- Think and explore options - do not judge!
- Use familiar, easily-controlled tools
- Keep all design ideas!

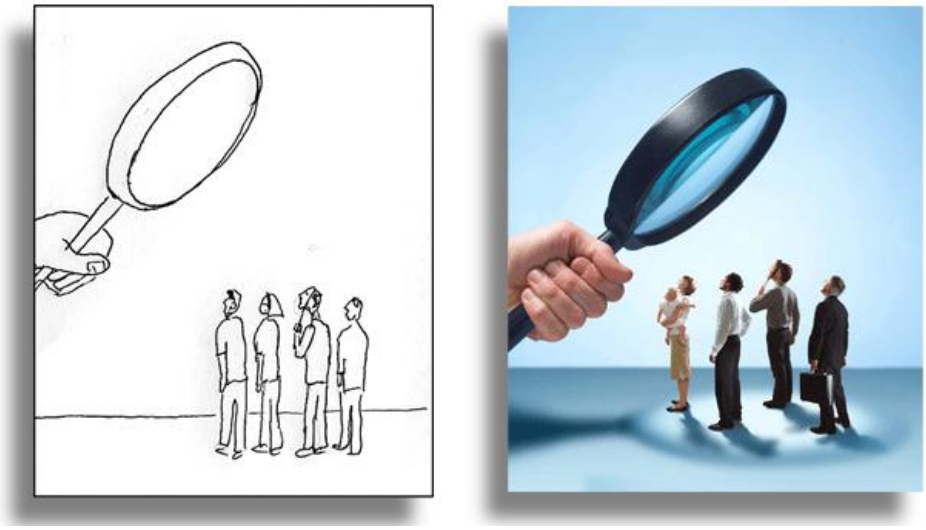

Fig. 2.7. **A rough layout** or a pre-production sketch on the left that helped create the final image (on the right).

Rough Layout (may be called “Rough” or “Layout”)

An actual size sketch, presents a more accurate appearance of the proposed design. Used for obtainingclient input or redirection before the design is finalized. Indicates an idea in progress. Enables thedesigner to refine or alter the design details from the thumbnail stage, where size, speed, and stage ofdevelopment do not warrant such careful scrutiny. Provides the client with diverse design solutions toreview, revise, redirect, or select.

- Refines and develops the best thumbnails (or combines the best thumbnails)
- Usually made actual size
- Made in actual shape (in proportion)
- General is one colour and in pencil, but may also be drawn in markers - “roughed out”
- Display type is drawn neatly
- Illustrations are represented at size, shape, and mood

- Process is repeated until a satisfactory rough is obtained
- Development continues as focused revisions of selected thumbnails

Comprehensive Layout (may be called "Comps")

It represents the closest visual form to the actual printed piece. This stage has benefited from the designer's thoughts and the client's input, and it is usually subject to minor changes, if any. It is an opportunity for the client to check final colour choices, design, and copy corrections from the previous stage before authorising the design's production.

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- Final layout before heading to the computer
- Drawn actual size, shape, and colour
- Everything is as close as possible to the desired appearance of the final project
- Comps include various design specifications:
    - Ink colour
    - Typefaces
    - Type sizes
    - Paper (stock) type (colour, weight, size, finish)
    - Folding
    - Die cutting and trimming
    - Embossing
- Examined by the client for approval

NOTE: The comprehensive is a prototype, a one-of-a-kind, handmade product that will be used as a guide to make the computer layout and/or production run. It must be neat!

2.6. APPROPRIATE VISUAL STRUCTURE

Graphic design is about bringing together necessary elements such as text and image within the communication space and offering them an appropriate visual structure. Several principles of design are used to create a harmonious design by structuring the visual elements of design. They include balance, rhythm and contrast. A graphic designer has to master this art.

This is when you're starting to make a bunch of plain elements into something interesting and appealing. Balance well all the elements on your design by considering their visual weight.

The way you lay elements in the page is crucial, making some elements heavier than others will help to create contrast and rhythm and lead your viewer's eyes through your design gracefully and effortlessly.

Scaling helps not only to create rhythm, contrast and balance but also hierarchy. Not all the elements in design should have the same importance, and one of the best ways to convey that is size.For instance, take a newspaper page. What's the biggest thing on the page?The titles, that are also usually short. Why? So you can scan the page quickly and see if there's something interesting for you to read. Then we have the subtitles that are smaller but give you a little more information about the article, and finally we have the article that has the smallest font size but also the most comfortable to read a long piece of text.

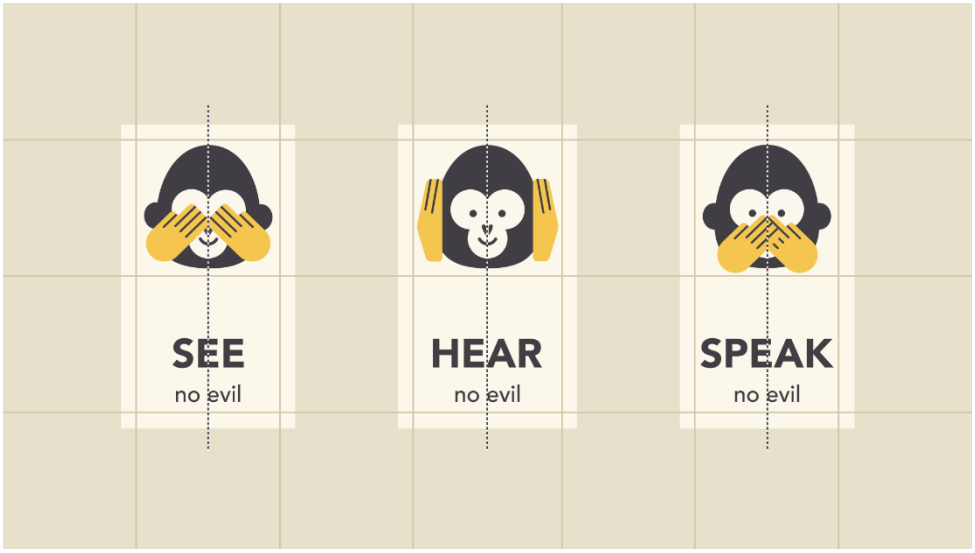

Fig. 2.8. Pictures in this image are aligned based on the grids.

*Grid and alignments:*It's like that oddly satisfying feeling when you're playing Tetris and you stack that last bar that clears your screen. These are supposed to be invisible but you'll see them if you open a book or a newspaper, but (no matter what you're designing) following a grid will structure your design and make it more pleasant and easier to digest.

Even if you're making a chaotic design purposefully, there must be an order for that chaos.Alignment is especially important with text, there are several ways to align it but my rule of thumb is to align it left. It always depends on what and for whom you're designing of course, but generally, people read from left to right, top to bottom, which makes text that is centre or right aligned much more difficult to read.

*Framing.*This is a key concept in photography but it also applies in visual design.Whether you're using a picture, an illustration or something else, framing something properly makes all the difference.Try to direct the eye to what matters, crop/frame images to make your subject stand out or to reinforce your message. It's all about telling the right story and telling it well.Visual conceptis the idea behind your design. What do you mean with it and what's the deeper meaning behind the superficial image.

2.7. SHAPING MEDIA ARCHITECTURE

Media Architecture. In the field of urban computer-based interaction, media architecture is an umbrella term for installations in which displays are integrated into architectural structures.

Architecture is generally understood as thepractice of shaping space. Obviously, this coversthe building of houses, but it also implies extended types of spatial intervention that does notnecessarily include material structures. Landscape architecture manipulates natural spacesthrough terra-forming and biological processes.Urban planning deals with the macro-parameters of cities, shaping their population patterns and commuter flows to optimize productivityand quality of life.

Similarly, modern buildings are more than acollection of walls and spaces. They constitute complex infrastructures, the majority of theirfeatures hidden from view. Without ventilationshafts, cable chutes, electrical circuits, computer networks, and security systems, the physicalspace would be of little use to their inhabitantsbeyond providing basic shelter. More often thannot, this invisible infrastructure is of greater importance than the physical walls it runs through.

In this immaterial conception of architecture, theextension of physical space through electronicdisplays is a logical next step. The emergence of the field of media architecture might be the directresult of advances in lighting technologies, butits invention is an inevitable consequence of newfunctions architecture is expected to fulfil. As thenature of human activity increasingly becomesintertwined with the intangible world of electroniccommunication, the need to manifest this invisible sphere becomes ever more pressing.

Fig. 2.9. Media Architecture is reaching a level of maturity. Research on media architecture to date has predominately focused on the integration of digital technologies, such as low-resolution media façades, into urban environments within a public context.

Recent technological advances have allowed a facade to become separated from the load-bearing structure and to act more like an independent skin, creating the physical and conceptual space for carrying a range of external media, such as lighting and screens (e.g. showing moving images, graphics, and text).

Next to the changing nature of architectural facades, an increasing number of electronic displays are becoming embedded in the contemporary urban environment, ranging from simple advertising surfaces to dedicated screens in trams or buses. We thus define media architecture as a field that comprises physical structures that utilise digital

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media to passively or interactively broadcast information to their immediate vicinity. Although the majority of existing media architecture seems to serve commercial, artistic or entertainment purposes, its potential cultural, social and technological values have already been discussed.

Our physical environment, in its ability to shape and represent the local standards and rules of social interaction, plays a crucial role in the construction and reflection of social behaviour. For instance, moving through the city has always been a performative practice where the citizen interprets the surroundings for his own purposes and enjoyment. Therefore, media architecture should avoid imposing any specific experience that fails to harmonise with the existing fabric, or to create an artificial reality on her own terms. Therefore, we believe that new knowledge is required to allow architects and urban planners to understand the full potential of 'interactive' systems over that of 'reactive' systems, so that the integration of media technology in our built environment will not suffer from the visual blindness and emotional disconnection that we know from current forms of public advertising.

2.8. MODERN DESIGN: OPPORTUNITIES AND CHALLENGES

Contemporary art can be defined as works that have been produced since World War II up to the present day, and reflects what is currently in style. The Tate defines Contemporary art as:Term loosely used to denote art of the present day and of the relatively recent past, of an innovative or avant-garde nature. In relation to contemporary art museums, the date of origin for the term contemporary art varies. The Institute of Contemporary Art in London, founded in 1947, champions art from that year onwards.

Whereas The New Museum of Contemporary Art in New York chooses the later date of 1977.The contemporary look of today is clean and simple with roots in various historical styles including the Swiss Style, particularly the trend for creative typography. During the 1960s new artistic styles arose displacing those of the modern era. One of the most significant movements at the start of the contemporary era was ‘Pop art’ with work by artists such as Andy Warhol and Roy Lichtenstein.

Contemporary art is regularly about the ‘idea’ of the work rather than the ‘overall look’ of the work and the artists often try experimenting with different ideas and materials. Today, an artist or designer will use whatever material fits their idea the most appropriately. This may include; painting, photography, sculpture, film, light and installation to name just a few.

Contemporary graphic design heavily relies on graphic software. Sometimes, it breaks off the basic principles of design to create a novel and contemporary feel. It is also moving past movements such as minimalism and bringing together mixed forms and texture to create an entirely new appeal. Contemporary trends presents a plethora of opportunities and challenges. For one, graphic design software such as Photoshop have introduced innovative and interactive features. To create a decent art work one doesn’t event need drawing skills and advanced technical know-hows. In other works, anyone can draw, thanks to these software.

Fig. 2.10. Contemporary design works.

Contemporary trends and the capabilities of these software present opportunities for the designers to experiment and innovate with design. Several software developments and upgrades have made designing significantly easier in this day and age. Thanks to online resources and YouTube, many of these software can be mastered in days or weeks. However, this easy path is fraught with challenges. With a focus on software and their capabilities, the importance of conceptual thinking and the basic principles of design cannot be ignored. Also, since anyone can create art, there is a rise in competition. Those who are able to understand these opportunities and challenges can excel in the field of graphic art and design. Following are some of the contemporary trends in graphic design.

3D design and typography.

Three dimensional works seems to be everywhere right now: entire compositions that have so much depth, you can't help but reach out and touch them. 3D typography especially feels just about ready to pop.

Fig. 2.11. A fine example of 3D typography. The best part about it is there's no particular type that works best for this trend: bold, skinny,

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sans-serif, script, any font can be rendered in 3D.

Asymmetrical layouts

We're starting to see the beginnings of a move away from the rigid grid-based designs that have been standard for the past few years. The dominance of Squarespace and Canva and other template-based design sites provided beginners with beautiful websites and graphic products, even if they had no idea what a grid was. Now, designers are looking to create products that feel more bespoke and alive.Enter the asymmetrical design trend.Because these layouts break free from the rigid and predictable grid, they deliver more kinetic energy and movement. An asymmetrical layout, whether on a design composition, in an app or on a site, demands attention. The user feels an innate curiosity about where the information and graphics might go next, creating a feeling of wonder and interest as they scroll or peruse a design.

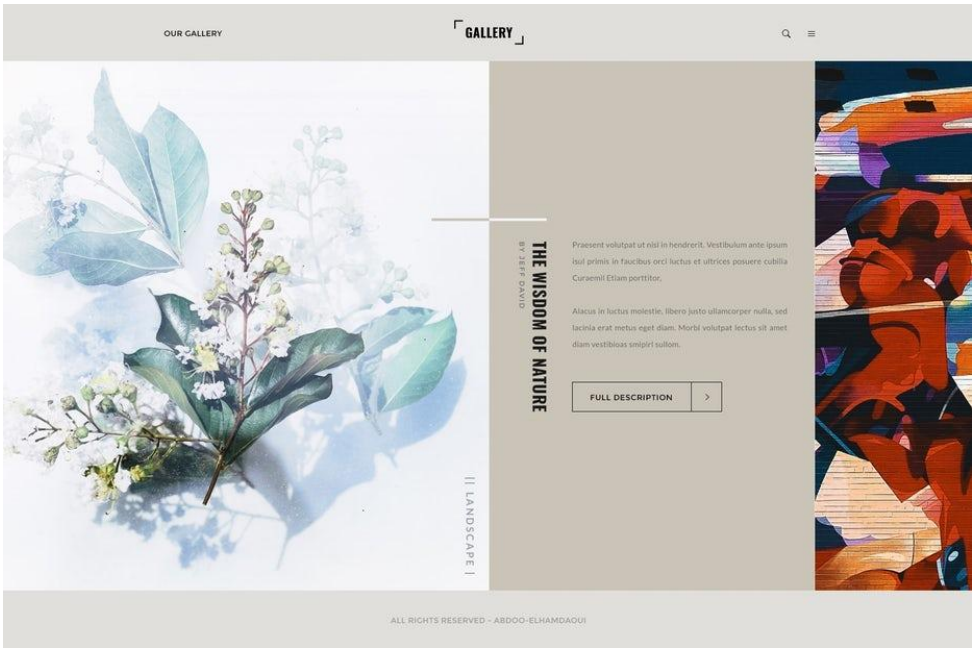
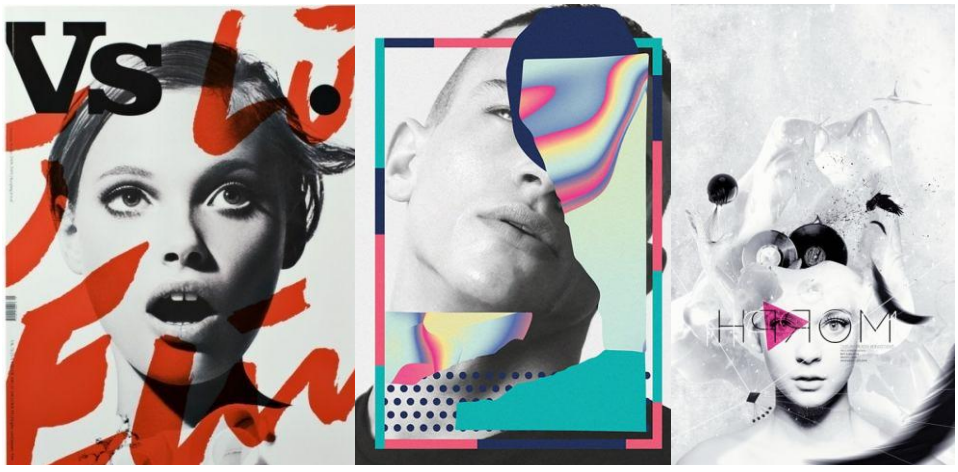


Fig. 2.12. Examples of asymmetrical layouts.



Art Deco

The “modern” design era gets its name from the artistic movement of modernism that began after World War I and continued for nearly a half-century. There are two major styles from this period that are currently experiencing a total renaissance: the highly ornamental and glamorous Art Deco designs of the 1920s and the streamlined organic forms of the Mid-Century Modern period of the 1950s.

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Fig. 2.13. Art Deco-inspired designs are set to blow up in 2019. We’re seeing the trend emerge particularly in logo work.

Isometric design

While open compositions leave some things out, isometric designs create whole universes in tiny little spaces. Isometric design sounds highly technical, but it’s simply a method of drawing a 3D object in two dimensions. The drawing is simple and clean, but has a depth that flat design can’t compete with. The arena where this trend is heating up the most is with icons. Isometric icons have a lot more tactility and warmth than flat design, drawing users in. Plus they are saved to a smaller file size than 3D, so you get all of the bang with none of the lag!

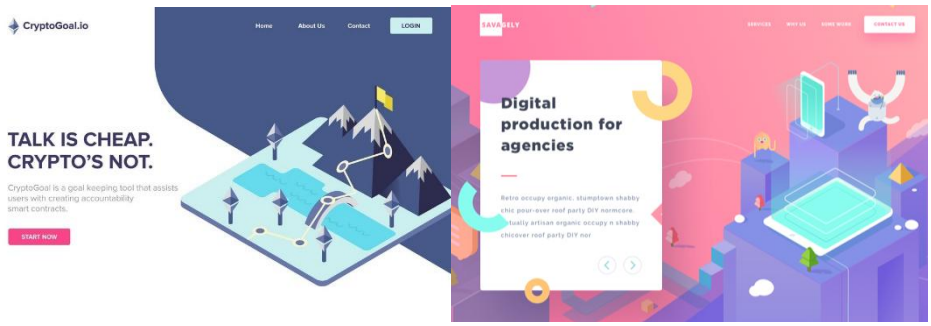

Fig. 2.14. Examples of isometric designs in graphic communication.

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2.9. LET US SUM UP

As mentioned in the earlier chapters, graphic design can be described as the sphere of human activity that lies on the crossroads of several directions, first of all, visual arts, communication and psychology. Basically, graphic designers do the job of communication to others by means of graphic (visual) elements such as images of different style and complexity, types and fonts, pictograms, shapes and sizes, colours and shades, lines and curves, etc. Graphic designer makes all those elements of visual perception transfer the message, so he makes them functional. Therefore, we could say that graphic designers are artists applying their talents mostly not in pure art but communicating and purposeful art.Modern graphic design broadly covers all spheres of human life which deal with visual communication, from books and posters to sophisticated mobile applications or 3D animation. Designing is a process. A design professional passes through several stages from conceptualisation and thumb-nailing to the production and delivery of the graphic product. Coming to contemporary graphic design, it is attempting to break from the traditional notions and design to move to innovative appearance with conceptual grounding. This shift present challenges as much as opportunities that need to be studied.

2.10. UNIT-END EXERCISES

1. Choose a few eye-catching contemporary graphic designs and check how much they adhere to the traditional principles of design. Also, check if there is a conceptual grounding and study the kind of feel they generate.

2. Outline the design process by delineating into its stages.

3. Comment on the modern-day media architecture.

2.11. ANSWERS TO CHECK YOUR PROGRESS

4. Define graphic communication.
Answer: Graphic communication as the name suggests is communication using graphic elements. These elements include symbols such as glyphs and icons, images such as drawings and photographs, and can include the passive contributions of substrate, colour and surroundings. It is the process of creating, producing, and distributing material incorporating words and images to convey data, concepts, and emotions.

5. Explain the concept development in graphic design.
Answer: Concept development is a process of developing ideas to solve specific design problems. It is also the first step and the most important. Concepts are developed in phases, from formless idea to precise message in an appropriate form with supportive visuals and content. Once you have done your research and understand exactly what you want to achieve and why, you are ready to start working on the actual design. Ideally, you are trying to develop a concept that provides solutions for the design problem, communicates effectively on multiple levels, is unique, and stands out from the materials produced by your client's competitors.

2.10. SUGGESTED READINGS

- Charlotte Fiell, Peter Fiell. New Graphic Design: The 100 Best Contemporary Graphic Designers. Goodman Fiell, 2013.
- Tamye Riggs, James Grieshaber. Font: Classic Typefaces for Contemporary Graphic Design. RotoVision, 2010

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UNIT III

Chapters

3.1. INTRODUCTION

Communication design is essentially the crafting of a message meant for a specific section of the public. This written message is infused with meaningful and relevant visual components. The composition of these components should amplify, clarify, and enhance the message for the viewer. To assist in making sound design choices, a designer applies principles of composition and principles of organisation to the design elements selected for a project. To master the assemblage of these elements and create effective messages, the graphic designer needs to understand the elements used in design: or in other words, the components of design. This unit will delve into the details of these components of design.

3.2. OBJECTIVES

After you complete this unit, you will be able to

- ✓ Identify the components of design
- ✓ Understand the contribution of the components of design

3.3. BASIC COMPONENTS OF DESIGN

Understanding how to utilise the fundamentals of design elements, principles, and composition is necessary to be able to confidently move through the stages of the design development process and build a project from the initial design brief to the final published design work.

Definitions from various design sources about what comprises a design element are consistent for the most part, but defining design principles is not as consistent and varies from one text to the next. Marvin Bartel's (2012) definitions of these categories are both simple and on point. He defines a visual element as any "basic thing that can be seen," and a design principle as a method for "arranging things better."

Also included in this chapter are organisational systems that can focus and direct the overall direction a composition will take. Point, line, and plane are the building blocks of design. From these elements, designers

create images, icons, textures, patterns, diagrams, animations, and typographic systems (Lupton & Phillips, 2014, p. 13).

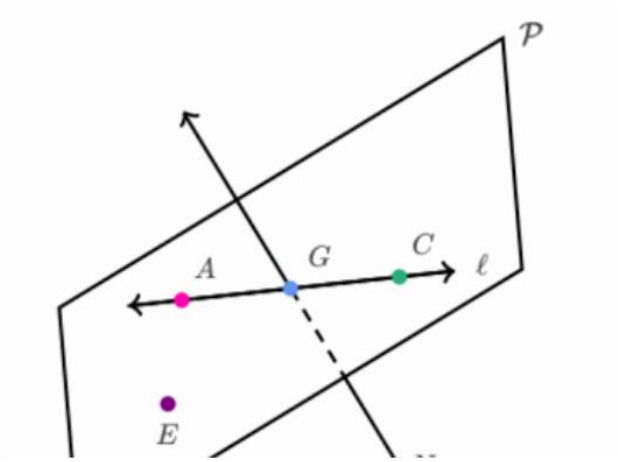

Fig. 3. 1. Point, line and plane.

Point. A point is a precise position or location on a surface.

In purely mathematical terms, a point marks a set of coordinates — it has no mass at all. In this objective definition, a point is essentially a place. Visually, a point is a dot and therefore the basic building block of every variation of line, texture, and plane.

Line. A line is the second most basic element of design—a line is a collection of points arranged in a linear manner. A line connects two points, or traces the path of a movement.

Plane. A plane is a flat surface that has defined borders. It can also be defined as a collection of lines of similar or varying lengths depending on the shape of the plane.

Colour. Graphic design has evolved over the last two centuries from a craft that designed text and images primarily in black and white for books and broadsheets, to a craft that works with full colour in analogue and digital media and on every kind of substrate.

Controlling and effectively using colour to support communication is now more important than it has ever been. Both media and advertising have become very sophisticated over the last few decades and are adept at creating exciting, sensuous, and energetic environments that are crafted with the skilful use of colour and texture.

Negative or White Space. Negative space, which is also called white space, is the visually quiet area that surrounds the active area of a composition. It is also referred to as figure and ground, and has a very important role in composition as it shapes the visual perception of the subject. Without negative space, there is no positive space—the effect is similar to seeing a polar bear in a snowstorm.

Negative space is often thought of as as passive and unimportant, but the active elements or ‘figure’ are always perceived in relation to their surroundings by the mind of the viewer. The composition of the negative space frames and presents the active elements in a flat or dynamic way. If the surrounding area is busy with many other elements, the focal point loses its power because the elements all have a similar visual value.

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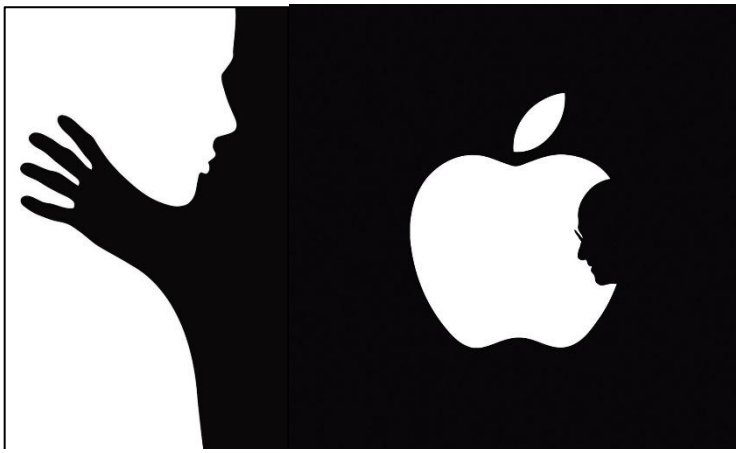
Fig. 3. 2. White or negative space is beautifully used in these pictures to create imagery.



Quite often than not, the *minimalist* movement employs white space to its advantage. It also uses other solid colours for a huge stretch to create the minimalist clean feel in designs. The term Minimalist is often applied colloquially to designate or suggest anything which is spare orstripped to its absolute essentials. It has its origins with an art critic seeking to describe what he saw,but has also been used to describe such diverse genres as plays by authors such as Samuel Beckett,films by director Robert Bresson (the narratives of Raymond Carver), the simple musical works ofcomposer Philip Glass (the art installations of Sol LeWitt), the German Bauhaus art movement and eventhe cars designed by Colin Chapman and the educational principles of John Carroll among others. Inspecting some of the visuals that belong to the minimalist domain will explain this art movement in graphic design. It is a modern movement and most of the modern media are moving towards the minimalist approach from their initial clutter.

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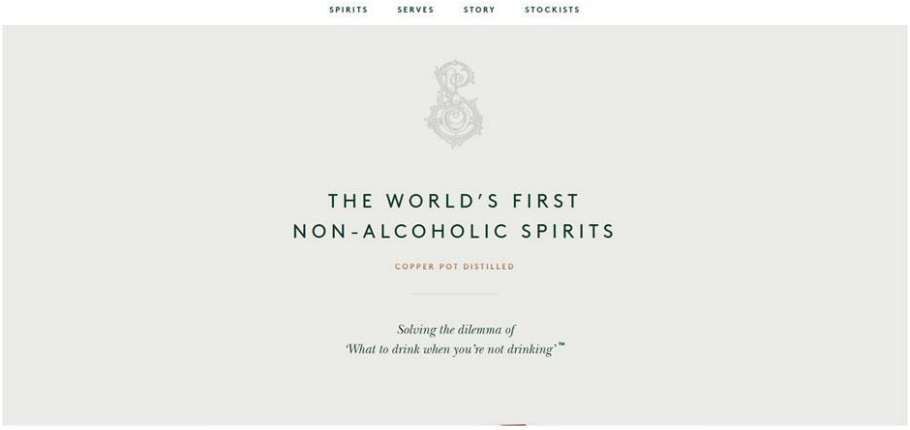
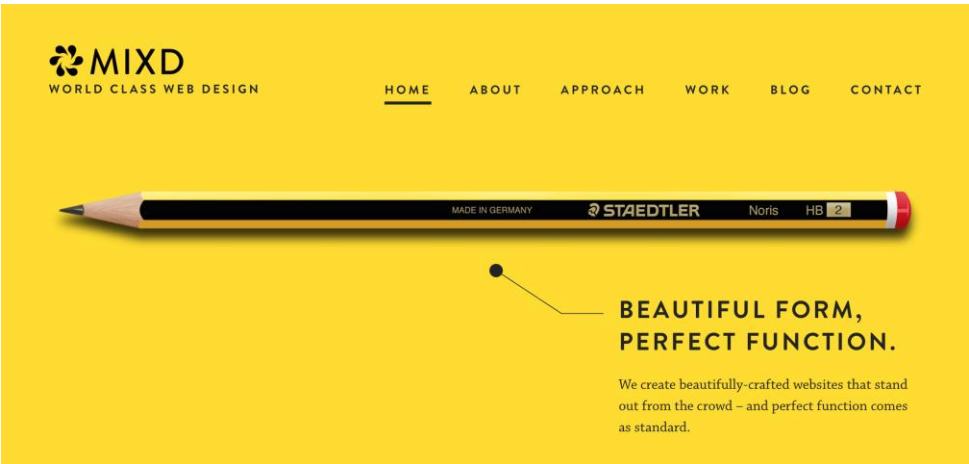


Fig. 3. 3. A few **minimalist** Web designs.



Texture. Texture is a visual and a tactile quality that designers work with. Texture is used both in composition and also on the printed substrate or media space. Designers create textures for their projects with anything at hand. A texture can be made with typography, generated in raster or vector software like Photoshop or Adobe Illustrator, or by using a camera and capturing elements in the material world. Using texture thoughtfully will enhance a visual experience and amplify the context for the content. Often adding texture adds visual complexity and a bit of visceral depth to a two-dimensional design project. It can also tie one piece of design to another, or become a defining element of a brand or a series of communications.

Check your progress - 1
NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

Outline the components of graphic design.

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3.4. VISUALS

Visuals are one of the components of graphic design, adding value to or accentuating the text in graphic designs. Visual elements of graphic design can range from photographs, manipulations of photographs, shapes or forms created using graphic software to support the text that tells the message or present the idea of the graphic communication by themselves.

Communicating effectively is an important partof graphic design and the usage of visuals to send a strong message is becoming importantbecause of the increasing number of visuals in graphics design. According to Evansand Thomas (2013), "graphic design is the art ofarranging pictographic and typographic elements tocreate effective communication."

Fig. 3. 4. Photographs in graphic design.

Pictures or visuals play an equal part as text in graphic design. There are several taxonomies of visuals to date.For example, Clark and Lyons (2004) categorisevisuals into six kinds by surface features:illustration, photographic, modelled, animation,video, and virtual reality. Modelled is "three-dimensional representation" of an object.

Clark and Lyons (2011) identify several functionsof visuals: decorative, representational, mnemonic,organisational, relational, transformational, andinterpretive. Mayer (2009) argues that designersshould refrain from using decorative andrepresentational graphics because they do notsignificantly contribute to learning. However,Norman (2002) states that designers have to becareful not only about cognitive but also emotionalaspects of designs due to the fact that the humancognition and emotion are strongly related to eachother. Greenspan and Shanker (2004) went so far tostate that intelligence is a part of the process ofemotion. People naturally have feelings aboutlearning contents and these feelings determine howthey organize the contents in their cognition orschema.

Photographs play a major role in graphic design.

Fig. 3. 5. Illustrations in graphic design.

3.5. TEXT

In most of the graphic design materials, text is unavoidable. For one, the brand name cannot be ignored. It is difficult to deliver a clear and precise message without simple words and with just pictures or illustrations.

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Reading of pictures is subjective and may be prone to multiple interpretations. Though a picture may be the main component in certain graphic design, it needs its best ally in graphic design—the text!

There are advertisements that just use words.

Most of the logos feature just text. Text art is a way of pictorializing text. When it comes to publication design, text is the major component. Several kinds of graphic designs are text-based.

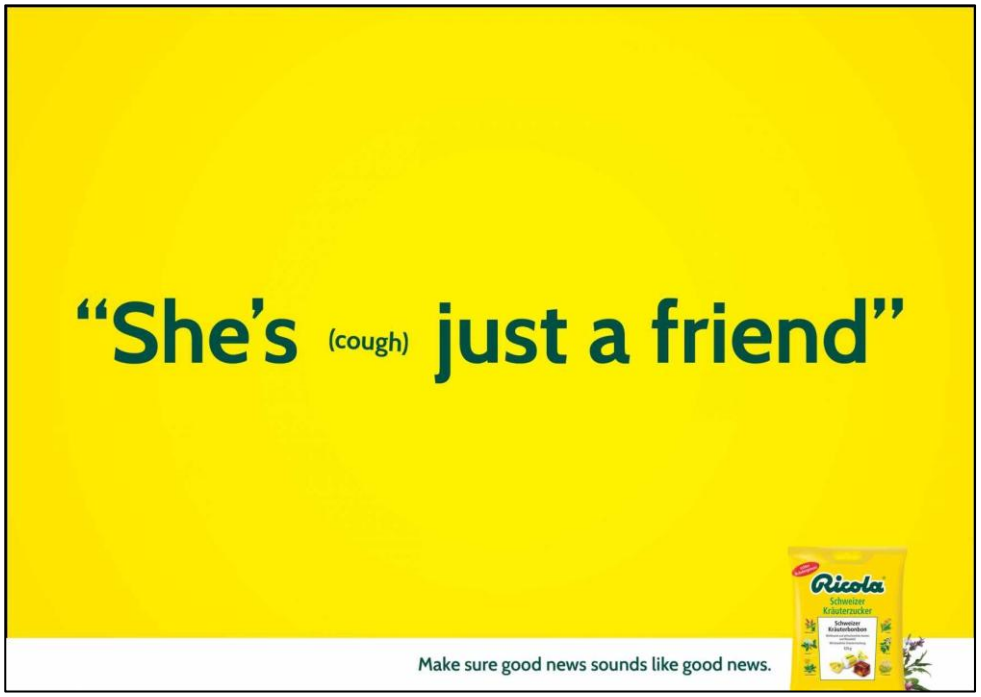
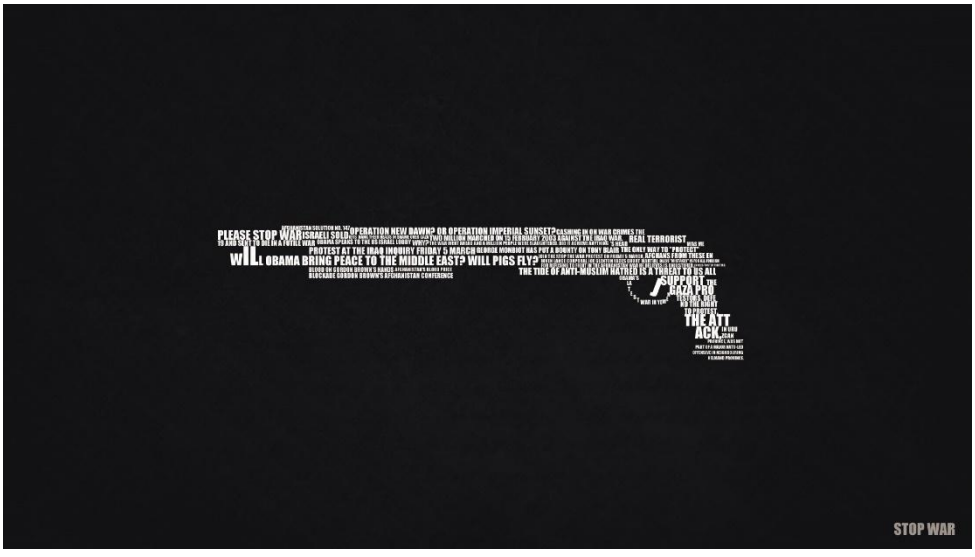


Fig. 3. 6. Text-based advertisements.



3.6. GRAPHICS

Tracing back to historical literature, illustration is developed in parallel with writing, giving text a better interpretation through painting techniques so that readers can have a deeper impression and understanding of the writing. In a word, illustration is an auxiliary text that appears in all

aspects of people's lives. Illustration appears mostly in pictures, with certain independence. Graphic design is indispensable for modern creation. It expresses ideas or information by means of graphics, words, abstract symbols, design combinations and so on with strong artistry and specialty. Illustration or graphics is a component element of graphic design and has an important position in graphic design. In order to satisfy customers, at the same time of beautifying product, some elements must be added in graphic design with a clear purpose, especially illustration, the most important one in the major components of graphic design.

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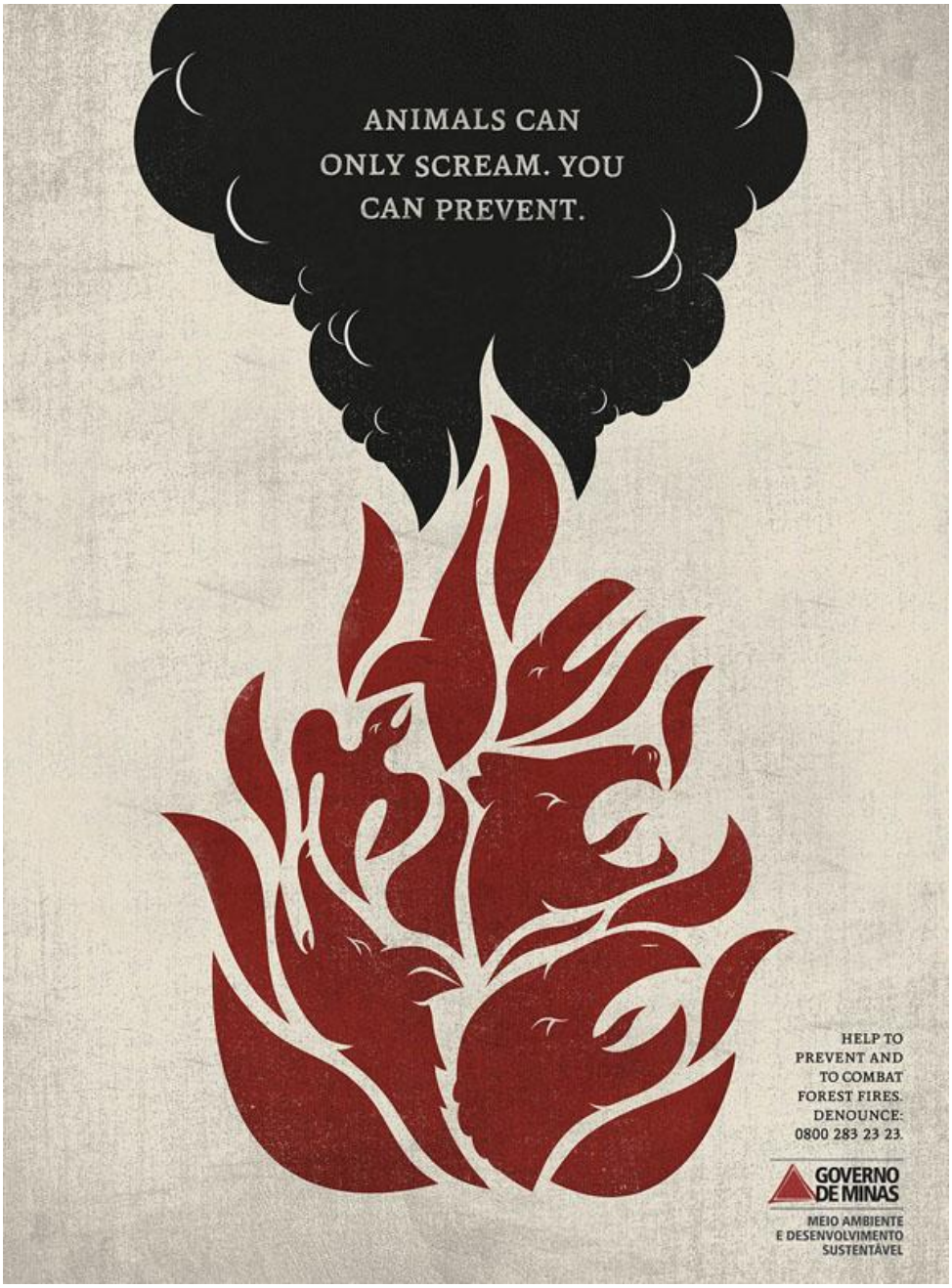

Fig. 3. 7. Illustration-based advertisement.

The illustration is not a single painting, because it is not a single existence, but an appendage of graphic design. Compared with other elements in graphic design, illustration has a unique advantage. Compared

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with fonts, colours, typesetting, etc., it can convey information more intuitively and attract more audiences' attention.

It enables people to understand the information at a glance. As the saying goes, "a picture wins a thousand words", and the strong persuasion of graphics and images often makes the description of many words tedious and redundant. In other words, an excellent graphic design usually contains a corresponding illustration design to make it easier to accept.

Illustration can interpret words in graphic design lively and reduce the boring nature of reading. At the same time, works of graphic and text are more easily accepted and understood by readers. Besides, illustration art has many styles and features, which greatly enriches the content of graphic design. In summary, graphic design and illustration art are inseparable. They are interdependent and interact with each other. Whether it is from the design concept, techniques and even the theme, only the perfect combination of the two can create more works in line with demand.

Fig. 3.8. Another illustration-based advertisement.

Illustration art is an appendage to the text. Without words, illustration has not only one meaning. According to readers' understanding and needs, illustration will form new concepts thus deepening the content that graphic design express. For example, a pair of black and white vase paintings some people see is a vase and some people see two people.

The text with picture will generally be more visible than the text itself and can convey information more directly.

3.7. COLOUR

Increasingly, people access the Web with high quality colour monitors. Therefore, colours and colour graphics are an important dimensions of website design. Understanding colours and how they can be used to enhance visual communication is the first step in the effective use of colour in site designs.Colour, like many other design factors, appears deceptively simple to use. Colour options appear in numerous software

packages on the market. Colour can be selected, spilled, painted, air brushed, or filtered in virtually every shade. Conservative colour, wild colour, pattern and textured colour–it's everywhere, and most of us have been exposed to it. From chalk art, to crayons, to the craft project in junior high, to painting a room in our house, most of us have worked with colour in one way or another.

When people declare that they are not artists, they often say, "I can't even draw a stick figure." No one ever says "I don't really know anything about colour." This assumed knowledge can often lead to poor colour choices by most novices. Designers, this odd breed of professionals who are often thrown into the general mix with other "artists," such as sculptors or painters, are usually not born with an innate sense of colour. Instead, most designers are formally trained to understand colour and its meaning in communication. Aesthetics, combined with communication, is at the root of choosing colour. Applying colour for purely aesthetic reasons is a luxury awarded to actual artists, who do not necessarily have to answer to the public, much less a paying client. Designers, on the other hand, have to do just that – articulate and defend their colour choices and its merits.

Check your progress - 2

NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

Write on the role of illustrations in design.

_____

_____

_____

3.8. LET US SUM UP

Graphic designs are built by the assemblage of several components--usually categorised as textual and visual elements. Of them, text, illustrations and their colours are the predominant ones. Text is the most important component of graphic design. It can standalone and deliver clear-cut meanings. It, however, would be more enticing and interesting when an illustration or an apt photograph is added to the graphic assemblage. It has been a traditional practise to use text and illustrations together--earlier hand-drawn and these days, with the aid of a computer. Colours also play an important role in graphic design and a graphic designer has to master its use. Colour theories and philosophies, however, will be discussed in detail in the forthcoming chapters.

3.9. UNIT-END EXERCISES

1. Collect a set of recent magazine advertisements and analyse which component of graphic design (text, illustrations, photographs) is used how.

2. Describe the individual roles of the components of graphic design.

3.10. ANSWERS TO CHECK YOUR PROGRESS

6. Outline the components of graphic design.
   Answer: Point, line, and plane are the building blocks of design. From these elements, designers create images, icons, textures, patterns, diagrams, animations, and typographic systems.

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7. Write on the role of illustrations in design.
   Answer: Illustration or graphics is a component element of graphic design and has an important position in graphic design. In order to satisfy customers, at the same time of beautifying product, some elements must be added in graphic design with a clear purpose, especially illustration, the most important one in the major components of graphic design. The illustration is not a single painting, because it is not a single existence, but an appendage of graphic design. Compared with other elements in graphic design, illustration has a unique advantage. Compared with fonts, colours, typesetting, etc., it can convey information more intuitively and attract more audiences' attention. It enables people to understand the information at a glance. As the saying goes, "a picture wins a thousand words", and the strong persuasion of graphics and images often makes the description of many words tedious and redundant. In other words, an excellent graphic design usually contains a corresponding illustration design to make it easier to accept.

3.11. SUGGESTED READINGS

- Alex W. White. The Elements of Graphic Design. Simon and Schuster, 2011. Allworth Press.

UNIT IV

Chapters

4.1. INTRODUCTION

Typography in graphic design can strongly affect how people react to a document. Careful selection and consistent use of a chosen typeface can be just as important as the use of graphics, colour and images in creating and solidifying a professional brand.Thoughtfully choosing the right font allows you to evoke a particular emotion or fit a certain style. The skilful use of typography commands the attention of your desired audience, communicates a key idea and motivates them to take action. Typography is not just about legibility. It is a blending of art and science and can serve a functional purpose. Every choice a graphic designer makes has an effect, including your choice of fonts.

4.2. OBJECTIVES

After you complete this unit, you will be able to

- ✓ Understand typography and its types
- ✓ Made apt typography choices
- ✓ Understand photo editing techniques

4.3. TYPOGRAPHY: DEFINITION, PRINCIPLES AND SIGNIFICANCE

Typography is the science of using letter forms for communication. We use letter forms extensively in our daily life. A very large number of digital fonts are available for a graphic designer to use in design projects.

A designer carefully chooses fonts after understanding the design problem, the medium, target audience, production aspects and the context. Fonts have unique characteristics and need to be carefully chosen and used to achieve good results in communication.

For example, newspaper designers spend a considerable time in experimenting with different fonts in different sizes to create a final design which helps a reader to go through several pages of a newspaper with ease and understand the text comfortably.

In order to use typography effectively, you must anticipate how the use of fonts and styling will influence your audience, even in ways they are

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not conscious of initially. Research has indicated that the skilful use of typography can affect readers' emotions and their performance in other tasks. Many large companies sponsor in-depth research and psychological assessments focused on how typography and the use of fonts affects readers.

In one study, researchers found that when good typography is used, people frown less and perform creative, cognitive tasks better afterwards. Since then, several researchers have embarked on experiments and studies on the effects of typography. They have also focused on determining factors for what makes typography most effective, including the skilful use of fonts for onscreen purposes. According to the article "Literature at the Human-Computer Seam," studies have indicated that visual fatigue from reading off a computer screen can be ascribed to "awkward character rendering, poor choice of line length and other typographical elements."

This emphasises the importance that good typography plays in helping to reduce eye fatigue and eye strain for online readers.

Additional findings have also indicated that nine point fonts are more difficult to read than 12 point fonts, and that standard black text on a white background is the most legible choice. In the end, after considering ongoing research, it's interesting to note that traditional typographic wisdom has a solid basis that is being proven by science. This is much to the satisfaction of seasoned designers and graphic artists who know the true value of good typography in graphic design.

Fig. 4. 1. A variety of fonts are used in newspapers for diverse purposes.

4.4. CATEGORIES

A font is a set of printable or displayable text character s in a specific style and size. The type design for a set of fonts is the typeface and variations of this design form the typeface family. Thus, Helvetica is a typeface family, Helvetica italic is a typeface, and Helvetica italic 10-point is a font. In

practice, font and typeface are often used without much precision, sometimes interchangeably.

Fonts are categorised under three types: serif, sans serif and script.

Serif

A serif is the pointed ending of a stroke as in “I” or “T”. This is inspired by the letters carved on stone, using chisels. Thickness of the strokes also changes in these letter forms, like those drawn by flat brushes. Serif fonts are known for their readability and is widely used in text composition for books, newspapers, magazines,etc., where a large amount of text is to be composed in small point sizes.

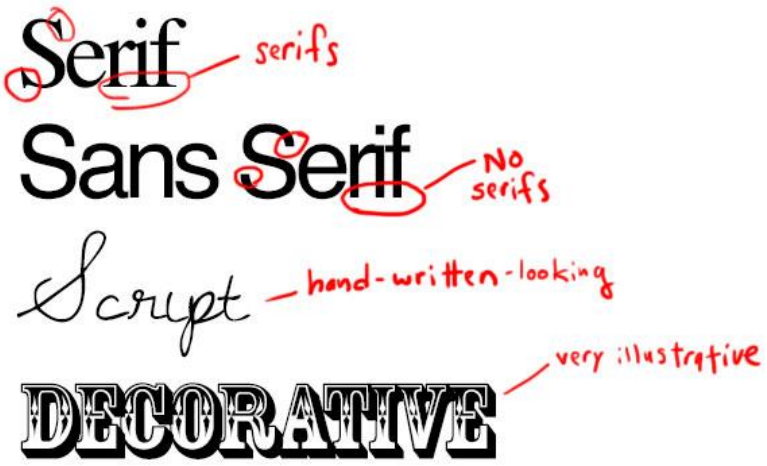

Fig. 4. 2. Serifs are the protrusions in font that aid readability.

Sans Serif

Sans means without. Sans serif means without Serif. Sans serif fonts have blunt endings to the strokes. Almost all the strokes look like equal thickness, as if drawn by a marker pen. Sans serif fonts give a modern look and is widely used in logos and symbols, packaging, signage, websites, mobile phone interfaces, gaming consoles etc.

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Script

Script fonts recreate the visual styling of calligraphy. The letters imitate the feeling of calligraphy nibs, with a slant to the right and changing thickness of strokes. These fonts give a festive and personal look to the reader and are very commonly used in wedding invitations.

Uppercase and Lowercase

ABCabc

Capital letters are called 'Uppercase' letters in typography terminology. During hand-composing, metal type of all capital letters were stored in the upper section of wooden boxes, kept in front of the person composing the text. Similarly, all small letters are called "Lowercase" letters, which were stored in the lower part of the composing box.

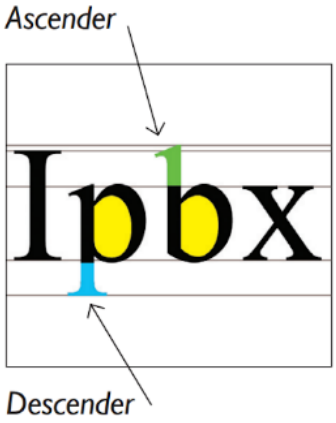

Fig. 4. 3. Ascender and descender.

Ascender: Ascender is the portion of the alphabet that 'ascends' or exceeds above the 'x' height of an alphabet as in b, d, t, l.

Descender: Descender is that portion of an alphabet that goes below or extends downwards from the 'x' height of an alphabet as in g, j, q, p.

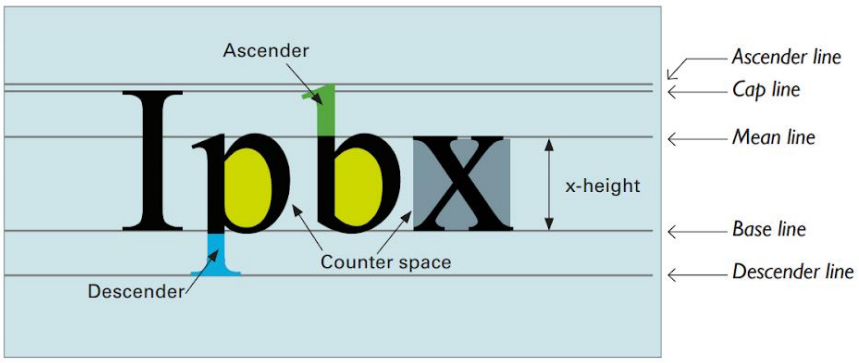

Fig. 4.4. X-height and counter space.

X-height: Height of lowercase "x" is called "x-height". This varies considerably in typefaces. X-height contributes to the readability of fonts.

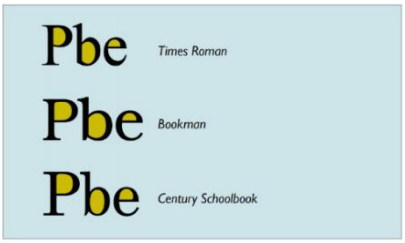

Fig. 4.5. Portions indicated in yellow are the counter space.

Counter space: The empty space or negative space inside a letter form is called a counter. Shape of the counter varies according to the designer who creates the font. Counter space also helps in identifying different fonts. These shapes can be creatively used in creating logos.

Point Sizes

Point size is the space measured from the bottom of the descender to the top of the ascender. Size of fonts are generally specified in point size. In typography, the smallest unit of measure is a point, specified as "pt". At the time of letterpress, space for printing were specified in "picas" or "ems", which were subdivided into points. 1 inch = 72 points; 1 point = 0.353 mm; 1 point = 0.0139 inch; 1 pica = 12 points; 1 inch = 6 picas.

Fig. 4. 6. Point size.

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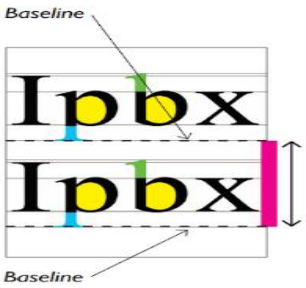


Leading

"Leading" is the space between lines of text. In digital typography, leading is the space between successive baselines. For text composition, leading is also specified in points. For example, if you need a space of two points between lines of text, you have to add that to the point size of the text and specify leading. So if you need 2pt leading for text with 10pt size, then leading = 10 + 2 = 12pt.This will be specified as "10pt on 12pt".

Fig. 4. 7. Leading is the point size plus the distance between fonts. (Below) Text with different leadings.

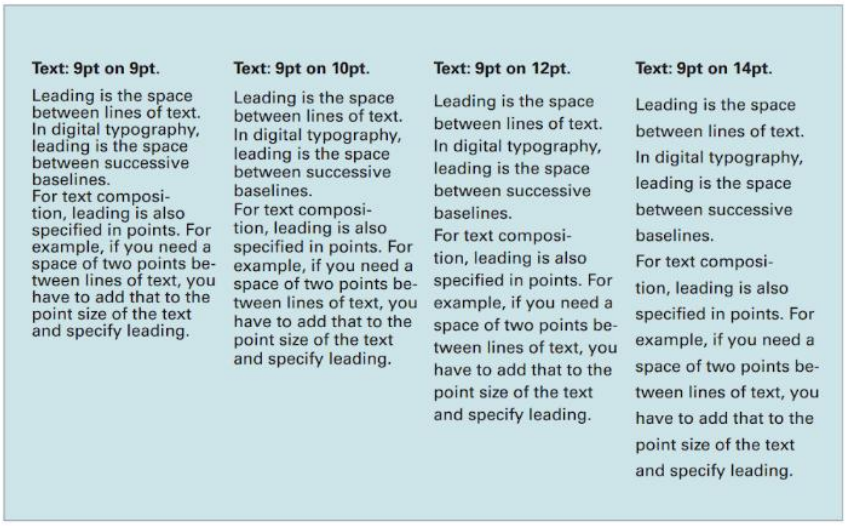
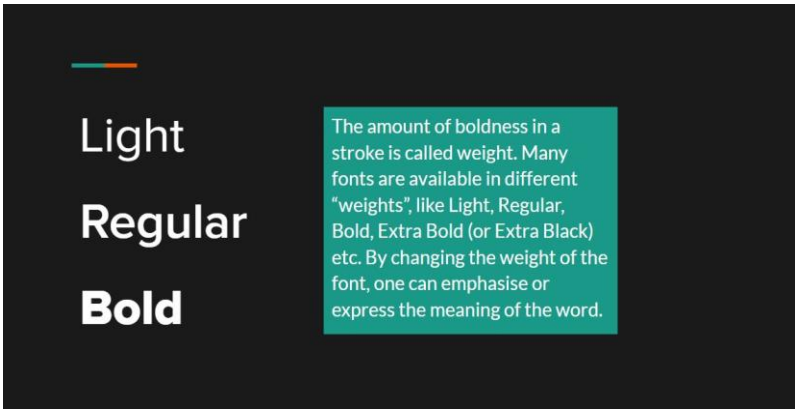


Fig. 4. 8. Font types based on weight.



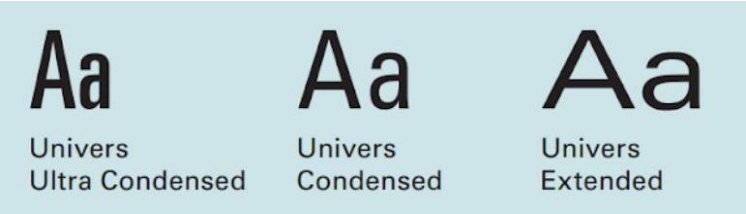


Fig. 4.9. Condensation of fonts.

The amount of space taken by letter forms can change as per the design. In some occasions where more text has to be fitted in a limited amount of space, variations of fonts were designed to accommodate more characters per line. This was done by redesigning the original fonts in such a way as to occupy less width and by keeping the same height. This is called a "condensed" font. On the other side, when you have less text and more space, you can use the opposite of condensed, the elongated or "expanded" or "extended" font. By changing the width of the font, one can emphasise or express the meaning of the word.

Fig. 4.10. Font styles: Different typography styles like Italics and outlines can be used creatively to provide expressions to text.

Check your progress - 1
NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

Describe a serif typeface.

_____
_____
_____

4.5. CRITERIA FOR SELECTION

> *Graphic design is the art of visual communication through the use of text, images and symbols.*

Communicating effectively is an important partof graphic design and thechoice of fonts plays a major role in it.

NOTES

Fig. 4.11. Fonts can alter the meaning and message.

Choosing the suitable one among the font piles that reach to ten thousands as of todayrequires preliminary information and experience. Although in our day there are differentfont catalogues prepared, it is pretty difficult to determine and choose which font is moresuitable with which message.The most important characteristic of writing is that it carries the communicationmessage directly to the reader.

The reader should be able to read and understand themessage carried to him/her as fast and as easily as possible.

Fig. 4.12. Fonts and feelings.

Each of these fonts evoke a different kind of emotion. It is pertinent for a graphic designer to understand this to create effective designs. For instance, a bold font indicates strength and stability. Analyse the choice of fonts on the following packages and understand their function.

Fig. 4.13. Colgate uses a **bold** typeface that is **white** in colours to signify **clean and strong** teeth. Fair & Lovely uses a **sleek-italic** typeface to signify **beauty.**

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4.6. EDITING PICTURES

'Photo editing' is a broad termthat involves making enhancements to change the appearance of an image. The meaning of photo editing is the act of altering an image, simply put. But that's oversimplifying a subject which is quite complex.For example, some photo editing techniques are done manually, while others are conducted through automated software.

Some photo editing is even done offline, on actual photographs, posters or other printed collateral.

Other terms for photo editing:

- Image editing
- Post-processing
- Image/photo manipulation
- Photoshopping
- Image/photo enhancement

Picture editing is an important aspect of graphic design. After the digital shift of photography, several image editing software such as Adobe Photoshop have come up with astonishing features for editing pictures. Of the multitude of photo-editing techniques, the following stand out:

- **Colour correction:** Software such as Photoshop are pixel-based and can alter the colours in image at the pixel-level

Fig. 4.14. Colour correction.

- **White balance:**adjusting the colour of the light in the image
- **Brightness and contrast:**higher contrast makes an image punchier, while lower contrast makes it flatter in colour
- **Image sharpening:** Using sharpening tools
- **Background change:** Background portion of the image can be chosen and replaced with another background image
- **Morphing:** A part of one image can be selected and superimposed on another image

Fig. 4.15. A morphed image.

- **Blur and zoom effect:** Several blur effects from Gaussian, motion and circular blur are available on image-editing software

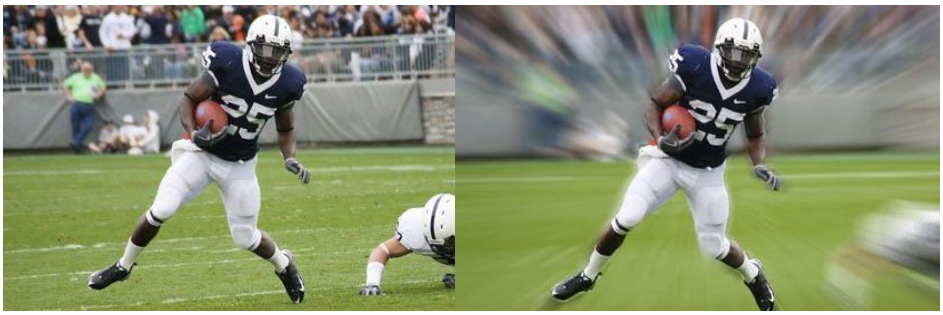

Fig. 4.16. Blur effect.

- **HDR conversion:**HDR or High Dynamic Range is the ability to capture the full luminance spectrum of the real-world. This is extremely difficult to achieve and is usually reserved for movies, special effects and some other specialty photography. What's marvellous about Photoshop, is that you can photograph a subject (multiple times at varying exposures) and then merge the images to create a single HDR image
- **Image noise reduction:**smoothing the picture out, typically accomplished by reducing the pixel size
- **Whitening eyes and teeth:**Used by professional editors
- **Skin retouching:** Smoothening tools can help make the skin glow

Fig. 4.17. Skin retouching.

- **Removing wrinkles, blemishes:** Involves several tools and steps
- **Texture effects:** Blending two images or using available effects.
- **Framing, resizing or cropping:** Parts of the images can be selected and chopped off.
- **Special effects:** this can mean an array of things, from animation to adding weather conditions like fog or snow

NOTES

Popular photo-editing software and programs include:

- Adobe Photoshop (and the entire Adobe Creative Cloud line of products)
- Serif Affinity Photo
- Pixlr
- Aviary
- Canva
- GIMP
- Microsoft Paint

Popular photo-editing mobile apps include:

- Snapseed
- VSCO
- Afterlight
- Instagram
- Enlight Photofox

Check your progress - 2
NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

Is converting a colour photograph into a greyscale one an image editing technique?

4.7. LET US SUM UP

Typography is the science of using letter forms for communication. We use letter forms extensively in our daily life. A very large number of digital fonts are available for a graphic designer to use in design projects.A designer carefully chooses fonts after understanding the design problem, the medium, target audience, production aspects and the context. Fonts have unique characteristics and need to be carefully chosen and used to achieve good results in communication.The type design for a set of fonts is the typeface and variations of this design form the typeface family.Fonts are categorised under three types: serif, sans serif and script.Communicating effectively is an important part of graphic design and the choice of fonts plays a major role in it.Each of these fonts evoke a different kind of emotion. It is pertinent for a graphic designer to understand this to create effective designs.

4.8. UNIT-END EXERCISES

Choose random print advertisements and analyse them using the typefaces that have been used in them.

4.9. ANSWERS TO CHECK YOUR PROGRESS

8. Describe a serif typeface.
   Answer:A serif is the pointed ending of a stroke as in "I" or "T". This is inspired by the letters carved on stone, using chisels. Thickness of the strokes also changes in these letter forms, like those drawn by flat brushes. Serif fonts are known for their readability and is widely used in text composition for books, newspapers, magazines, etc., where a large amount of text is to be composed in small point sizes.
9. Is converting a colour photograph into a greyscale one an image editing technique?
   Answer: Yes. It is one of the uses of the colour-correction tools of software such as the Photoshop and Lightroom.

4.10. SUGGESTED READINGS

- Robin Whalley. Essential Affinity Photo: Image Editing Techniques Using Affinity Photo for Desktop. Robin Whalley
- Phil Baines, Andrew Haslam. Type & Typography, Biebl Ranweiler portfolio series. Laurence King Publishing, 2005.
- Gavin Ambrose, Paul Harris. The Fundamentals of Typography: Second Edition. A&C Black, 2011

BLOCK II: PHOTOGRAPHY AND COMPONENTS OF NEWSPAPER

UNIT V

Chapters

5.1. INTRODUCTION

Photography has become a predominant part of design. The use of photography in design should receive as much consideration as the other elements of design such as typography and illustration. While layout and typography are widely taught in schools, the integration of photography in design is not a major focus of education. It should not only be taught but should remain a major part of graphic design education.

Today's use of photography in advertising and web design require more than a casual attention to teaching these skills. A more in-depth approach to integrating photography in design is needed while still embracing the basic principles of design and publications. In this Unit, the integral role of photography in design and publications, some of the ethical issues surrounding the subject and colour basics will be reviewed.

5.2. OBJECTIVES

After you complete this unit, you will be able to

Understand the relevance of photography in design

- ✓ Know the ethical issues surrounding design
- ✓ Understand colour basics, theories and psychology
- ✓ Understand the importance of colour
- ✓ Efficiently use colour in design

5.3. PHOTOGRAPHY AND DESIGNING

Even if you're already a working graphic designer, it's a good idea to develop photography skills. And today, that probably means using a digital camera that takes photos with a digital sensor rather than film. Using a camera is a creative outlet that can strengthen your abilities in ways applicable to the design process. Photography is also a process. Every step requires making decisions about the placement of objects, framing the shot, appropriate settings, and looking at the intricacies of light and colour. All these elements are also important to graphic design.

Learning photography can help you develop a better eye for composition. Composition is the combination of formal underlying elements like line, balance, and shape in an image. When these elements are used well together, the result is a cohesive and effective image. When photographing subjects, you're forced to understand how they relate to each other in space, and you're constantly honing your skills in composition. Photography can strengthen your eye in understanding the impact of light and colour. Graphic design includes a formal understanding of elements like warm and cool colours and contrasts of dark and light. But photography makes you apply these ideas in real-world settings. Think about trying to take an image of a stark winter landscape, and adding a person with a red scarf to make the image pop. Now use that same idea in a design where you want to create a focal point that reinforces the main idea with a splash of bright colour. The mediums are different, but the skill set is the same. Ever since photography has been around, it has been utilised as a key component of advertising. Look back at early advertising and you will most likely see an image that became a staple for that company. Illustrations were used early on, but photographic images capture an emotion. Photography has an emotional component to it, so select images that make you pause – not for shock value necessarily, but because they connect to your theme or story. If you see a picture of a happy kid on a cereal, you want that cereal to make you happy in turn. I think it is the defining feature of some ads, but of course you know there is also type, graphics, illustration.

As the saying goes, 'A picture is worth a thousand words.' As a visual communicator, photography is essential to the graphic designer in diverse ways, since images can mean a lot in communication as far as aesthetics are concerned. Photography is also an important part of branding, hence the connection with graphic design. Graphic designers manipulate photos to communicate an idea. Some employers look for graphic designers with a photography background and vice versa.

Selecting which shot you should use can often be the most time-consuming stage within your process, especially when you might have upwards of 100 seemingly identical photos to choose from. When using a picture as the background of your layout, try to lose details: go darker, go blurry and your fonts and design will jump out and have much more impact.

When you have multiple images in a single layout, you have to keep searching for a way for them to work together, or you'll have to try and incorporate other elements. When you're dealing with 'art' style imagery, the other elements become really important as visual glue, such as symbols, typefaces, colours, borders, etc. Don't start designing until you have all the imagery you know you'll be using. The quality, size and subject may well dictate the design direction as a whole.

Good photographers make the designer's job easier, but if the photos are going to be combined with type later, it's always helpful to keep this in mind when shooting to really get what you want. Great photos with no place for text generally do not make for great design.

Other important aspects of photography in design is image editing, setting the frame, positioning the images and using effects. After choosing the apt photography to go with your design, you will need to decide how the photograph will be used in the design. The same photograph can be

used in innumerable ways in a design each with different effects. The rule of thirds and the focus of the image can all play a role in deciding the image frame and how it can be used. A good photograph with apt font and colours can do wonders to a graphic design.

Check your progress - 1

NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

What are the advantages of learning photography for a graphic designer?

_____

_____

5.4. ETHICAL ISSUES

Design ethics concerns moral behaviour and responsible choices in the practice of design. It guides how designers work with clients, colleagues, and the end users of products, how they conduct the design process, how they determine the features of products, and how they assess the ethical significance or moral worth of the products that result from the activity of designing. Ethical considerations have always played a role in design thinking, but the development of scientific knowledge and technology has deepened awareness of the ethical dimensions of design. As designers incorporate new knowledge of physical and human nature as well as new forms of technology into their products, people are increasingly aware of the consequences of design for individuals, societies, cultures, and the natural environment. The design arts are important because they are the means by which scientific knowledge and technological possibilities are converted into concrete, practical form in products that serve the needs and desires of individuals and communities.

The first ethical dimension of design arises from the human power or ability to design. One may reasonably argue that design itself is morally neutral because the art is only an instrument of human action. However designers are not morally neutral. They possess values and preferences, beliefs about what is good and bad for human beings, and an array of intellectual and moral virtues or vices that constitute personal character. The power or ability to design is embedded in a human being, within the character of the designer. Personal accounts, written statements, manifestos, and biographies are the beginnings of the study of ethics in design. They provide direct and indirect evidence of individual character and personal values, and often include accounts of the moral dilemmas and decisions that individuals have made in the course of their careers. Thus the first ethical dimension of design is the character and personal morality of the designer.

Another ethical dimension, product integrity, arises from the nature of the products created through the art of design. Product integrity should be distinguished from the end purpose or worth of products. It is the synthesis of form and materials by which one judges a product to be well

or poorly designed. There are specific ethical issues of product integrity for each kind of design (engineering, communication, industrial, and architectural design), but in general the issues concern safety and reliability, compliance with laws and regulatory codes, sustainability in its various aspects, and service to the public good. Products are created to serve human beings in their various activities and pursuits. Anything that directly or indirectly harms a human being or harms someone or something for which a human being is responsible presents a serious problem of product integrity requiring both technical and ethical considerations.

Part of the misunderstanding of aesthetics rests with the term itself. In its original and broadest meaning, aesthetics refers to the pleasurable or painful sensations that human beings feel through their senses. In this meaning all products have an aesthetic element, by accident or by design. The sound of a door closing, the texture of a control surface, the visual appearance of information in a software interface, the smell of plastics and metals, and the taste of medicine: All are examples of the aesthetic element of form. Over time aesthetics has taken on a second, more restricted meaning as the study and theory of beauty. The psychological, social, cultural, and philosophical significance of aesthetics is a complex and profound subject. One way to understand the place of aesthetics in design is how it leads a human being to identify with a product. Identification with a product—to imagine a product as a desirable part of one's lifestyle and a valuable extension of the user into the world—shows how important the aesthetic element of form may be in design thinking.

Another ethical dimension of design arises from the service nature of the design arts, and presents some of the most difficult ethical issues designers face. The design arts are fundamentally a practical service to human beings in the accomplishment of individual and collective purposes. That is, the end purpose of design is to help other people accomplish their own purposes. This is where the personal character and morality of the individual designer, as well as the other ethical dimensions of design, are inevitably placed in a larger social, political, religious, and philosophical context. What is the moral significance of the particular purposes that designers are asked to serve? What is the moral worth of particular products that seek to achieve these purposes? What consequences will products have for individuals, society, and the natural environment in the short and long terms? What ethical standards can designers employ in making decisions about the proper use of design?Ethical guidance in these matters comes from several sources including personal morality, professional organisations, and the institutions of government, religious teachings, and philosophy. The potential for moral conflicts and dilemmas is so great that in this fourth ethical dimension the ethical problems of design are essentially the same as the ethical problems of citizenship and practical living in general. It is difficult to distinguish design from politics, political science, and political philosophy. This reaffirms Aristotle's treatment of ethics and politics: They do not address different subject matters but the same subject matter from different perspectives.

In a broader sense, moral issues are addressed when the designer employs clear and well-articulated ethical standards in making decisions about the proper use of design in any particular situation. There is no

single set of ethical standards in the field of design; the pluralism of the human community in general is mirrored in the design community in particular. However, there are distinct ethical positions in the discussions of designers, and they bear a recognisable relationship to positions in the tradition of formal ethical theory. Two of these positions point toward a natural foundation of design ethics, and two others point toward conventional and arbitrary foundations established by human beings.

Designers whose ethical position is grounded on conventional and arbitrary foundations typically argue that products should satisfy the needs and desires of human beings within acceptable constraints. The constraints at issue are simply conventional expectations of a community and what is considered normal in the physical, psychological, and social condition of human beings in a particular time and place.

The strongest premises are drawn from the study of manners, taste, and prevailing laws, and by scientific study of what is normal and abnormal in the body and mind. Alternatively, various designers argue that products are merely instrumental, in the sense that they are useful in enabling human beings to achieve any of their wants and desires, limited only by the power of individuals and the state to curb wilfully destructive actions and turn creativity in acceptable directions. This position draws its strongest premises from the concept of the social contract, upon which it is argued that any state is created.

5.5. COLOUR BASICS, COLOUR THEORIES, COLOUR PSYCHOLOGY

Basics

Colour can make you look away or draw you in. It has the power to create an emotion as powerful as music can. Colour helps us instantly understand our environment. It is intrinsically important to our everyday life. It is all around us all the time and helps us to relate and to respond to our world, even if we generally take it for granted.

Theory

Colour theory is the science behind understanding what colour is and how it is essential in culture, communication and everyday life. In design, the wrong colours can cripple your marketing, even if all other elements are perfect. The Colour wheel is the easiest way to understand how colours relate to each other as we see them. They are divided up into:

- Primary colours – red, yellow blue;
- Secondary colours – the combination of the primary colours – orange, green, purple;
- Tertiary colours are the blends between the primary and secondary colours.
- Colour terms indicate in what state the colour is in.

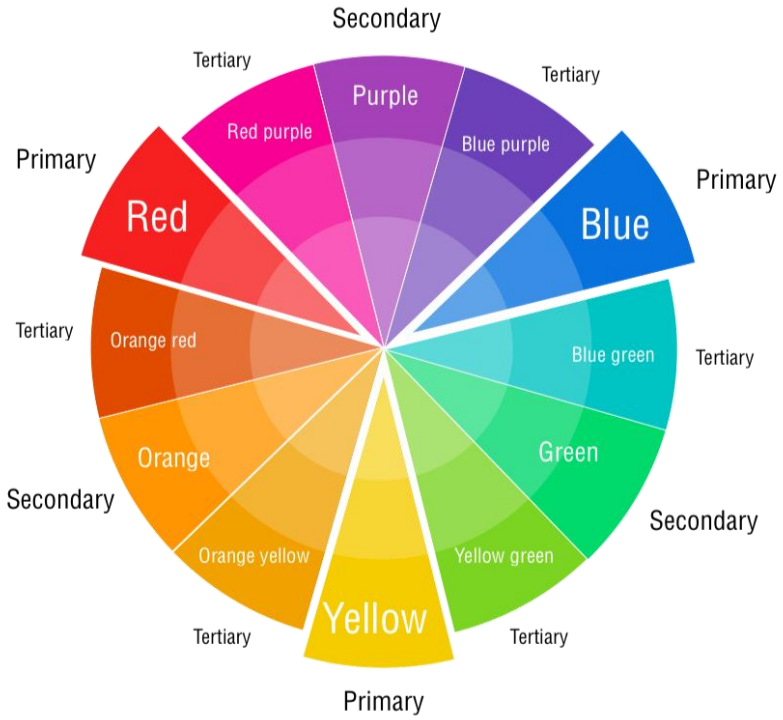

Fig. 5.1. Primary, secondary and tertiary colours.

- Hue or colour: Generally describes the basic, pure colour.
- Shade: a hue darkened with black
- Tone: a hue dulled with grey
- Tint: a hue lightened with white
- Saturation: refers to the intensity or purity of a
- Value: refers to the lightness or darkness of a colour

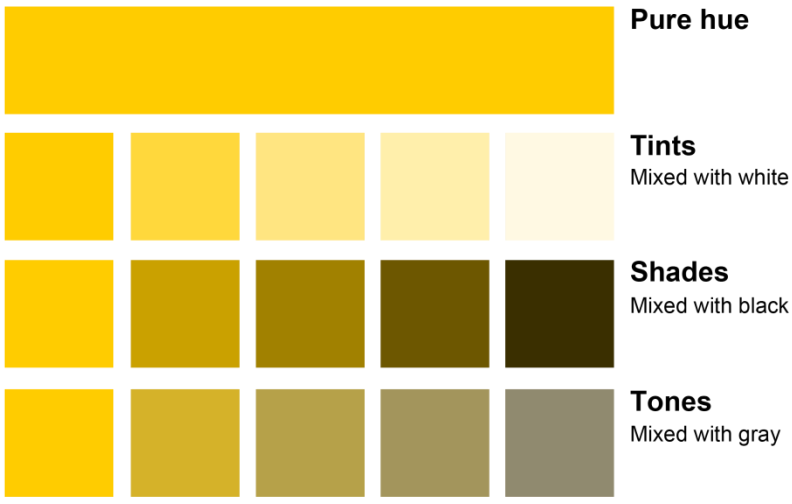

Fig. 5.2. Hue, tint, shade and tones.

To sort out and effectively use all these colours colour schemes and harmonies are adopted. They give a premise to organising colour.

- Monochromatic: various shades, tones, or tints of one colour; for instance, a range of blues varying from light to dark; this type of scheme is more subtle and conservative
- Analogous: hues that are side by side on the colour wheel; this type of scheme is versatile and easy to apply to design projects
- Complementary: opposites on the colour wheel, such as red/green or blue/orange; complementary colours are high-contrast and high-intensity, but can be difficult to apply in a balanced, harmonious way (especially in their purest form, when they can easily clash in a design)
- Split-Complementary: any colour on the colour wheel plus the two that flank its complement; this scheme still has strong visual contrast, but is less jarring than a complementary colour combination
- Triadic: any three colours that are evenly spaced on the colour wheel. In design, extreme unity of colours are boring and unengaging and extreme complexity of colours leads to overstimulation or confusion. The goal is harmony, a dynamic equilibrium.
-

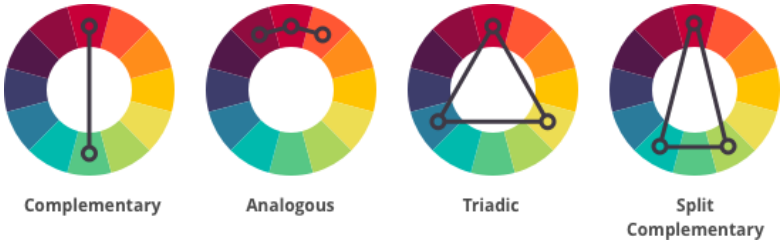

Fig. 5.3. The colour wheels.

Adding or subtracting light from colour helps us to understand the mixing of colour and the beginnings of how colour is created digitally. On paper, you subtract light by adding more colour thus deepening the colour and taking out the light. This is what we are taught at school but mixing in light is perhaps more intuitive and the way we physically perceive colours. It allows you to create colours by mixing red, green and blue light sources in various intensities. The more light you add, the brighter the colour mix becomes, which is the reason this mixing process is called additive and is how we mix colours on a computer. There are a few different colour models we can use on a computer but the RGB Colour model is the most "popular" additive colour model. Each colour is described as set of Red, Green and Blue values on a scale from 0 to 255.

Check your progress - 2
NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

While applying the triadic colour scheme, what are the colours that will go with Red?
_____
_____
_____

A subtractive printing colour model is CMYK. Each colour is represented by a corresponding value of cyan, magenta, yellow and black inks, on a scale from 0% to 100%. To name all the many different colours, shades, tints and hues would be impossible and un-usable, so we use universal digital systems of HEX or RGB colour codes.

Colour psychology

Colour is everywhere, and whether you know it or not each colour you encounter gives you an emotional experience. Green and blue evoke a feeling of calm, and yellow makes you feel upbeat (and hungry).

Understanding the psychology of colour can be a valuable asset for designers and entrepreneurs when choosing brand colours. Choosing the right colours means your audience will instantly know who you are, what you do and what you're about. And—no joke—the wrong colours can drive them away.In branding especially, we can choose a colour palette that will reflect the emotions we want the customer to feel when they engage with us. For example, you can probably guess why BP use green predominantly in their branding (despite that probably being the opposite of what they do), and why Cadbury would choose purple. Don't worry if you're not entirely sure, as I'll be running through the emotions that each colour conveys.

Each colour in the spectrum can make us feel a certain way just by association, these are the most common themes we can see in colour psychology. There are both positive and negative emotions that we can attribute to each colour to.

Red

- Positive: Power, Excitement, Strength, Power, Passion, Energy, Youth, Confidence
- Negative: Anger, Danger, Warning

Orange

- Positive: Confidence, Warmth, Innovation, Friendliness, Energy, Bravery
- Negative: Frustration, Ignorance, Immaturity

Yellow

- Positive: Optimism, Warmth, Happiness, Creativity, Friendliness
- Negative: Caution, Anxiety, Fea
-
-

- r

Green

- Positive: Health, Hope, Nature, Growth, Freshness, Prosperity
- Negative: Envy, Sickness, Boredom

Blue

- Positive: Trust, Loyalty, Dependability, Logic, Serenity, Security
- Negative: Coldness, Emotionless, Uncaring

Purple

- Positive: Wisdom, Luxury, Wealth, Spirituality, Sophistication, Royalty
- Negative: Introversion, Decadence, Moodiness

Pink

- Positive: Imaginative, Passionate, Transformation, Balance, Creativity
- Negative: Outrageousness, Femininity, Impulsive

Brown

- Positive: Serious, Earthiness, Reliability, Authenticity, Warmth, Support
- Negative: Humourless, Dirty, Sad

Black

- Positive: Sophistication, Security, Power, Authority, Substance
- Negative: Oppression, Coldness, Menace

White

- Positive: Cleanness, Clarity, Purity, Simplicity, Freshness
- Negative: Sterility, Coldness, Isolation

Successful businesses use colour meaning and psychology to influence a consumer's brand experience.

Check your progress - 3

NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

Which colour will you choose for a university and why?

_____
_____
_____

5.6. IMPORTANCE OF COLOUR IN DESIGNING

Design, be it in the use of colour or layout, is all about balance. The more complicated the colours and the scheme, the more difficult it is to achieve balance. Begin by identifying which colour in your pallet will be the dominant and most frequently used, which will be the accent colours to support the dominant hue and which colours will help balance the whole design. Ensure you pay attention to how the colours interact with each other especially when it comes to the ease of reading text and the mood you are creating with the colour choices. 60-30-10 is a basic, three-colour palette rule that is sometimes applied to design which helps to create this harmony. Basically the dominant colour is used 60% of the time, the accent colour 30% and the balancer hue 10%. Another way to keep your colour palette simple and balanced is using shades and tints of one Hue.The importance of colour design stems from the significance of colour to the human mind. Colour creates ideas, expresses messages, spark interest, and generate certain emotions. Some colours hold a universal significance- for example, it is commonly understood that red is a colour for warning and green means go. But, put together, most people would associate the colour combination of red and green as Christmas. Bright colours tend to set a happy and positive mood, whereas dark colours tend to project the opposite. Within the psychology of colours, warm colours show excitement, optimism, and creativity; cool colours symbolize peace, calmness, and harmony.

5.7. LET US SUM UP

Starting with the role of photography in design and ethical concerns, this Unit delved into colour theory and psychology. As an everyday consumer of design in myriad forms: from product packages and bill-boards to newspaper and magazine advertisements, we understand that photographs are an integral part of design. Studying colour theories and psychology, we understand the importance of such knowledge in creative and efficient designing. Each colour has an underlying meaning: understanding it will help designers in choosing the apt colours for their designs. In fact, it is a prerequisite for a critical designer.

5.8. UNIT-END EXERCISES

Analyse how colour schemes are used in the following advertisements.


open happiness


Coca-Cola
open happiness™


THEY DON'T MAKE 'EM
LIKE THEY USED TO.
WE DO.
ORIGINAL TASTE
Coca-Cola
SINCE 1886


Colgate
MaxFresh
TAAZGI KA
DHAMAKA
Colgate
MaxFresh
COOLING CRYSTALS
FRESH BREATH FOR HOURS

5.9. ANSWERS TO CHECK YOUR PROGRESS

10. What are the advantages of learning photography for a graphic designer?
    Answer: Learning photography can help you develop a better eye for composition. Photography can strengthen your eye in understanding the impact of light and colour. Graphic design includes a formal understanding of elements like warm and cool colours and contrasts of dark and light. But photography makes you apply these ideas in real-world settings. Ever since photography has been around, it has been utilised as a key component of advertising. Look back at early advertising and you will most likely see an image that became a staple for that company.
11. While applying the triadic colour scheme, what are the colours that will go with Red?
    Answer: Blue and yellow.
12. Which colour will you choose for a university and why?
    Answer: Blue. Because it stands for Trust, Loyalty, Dependability, Logic, Serenity and Security.

5.10. SUGGESTED READINGS

- Patti Mollica. Colour Theory: An Essential Guide to Colour-from Basic Principles to Practical Applications. Walter Foster Publishing, 2013.

Michael Freeman. The Photographer's Eye: Composition and Design for Better Digital Photographs. Hac

UNIT VI

Chapters

6.1. INTRODUCTION

In this digital age, we are exposed to several kinds of publications and designs: from newspapers and magazines to brochures and websites. Publication designs are mostly functional in nature. That is, their designs are based on functionality. For instance, news articles feature columned structures in newspapers and that is to serve a purpose. The top-positioned headline on the front page of a newspaper is huge and bold: and the intention is to garner the attention of the reader. A lot of white space is used in the feature news articles published in the magazine section. It gives a feel that's different from the crowded-tight design of news articles arranged in the main sections of a newspaper. This unit starts lessons on publication design.

6.2. OBJECTIVES

After you complete this unit, you will be able to

- ✓ Understand the nuances of publication design
- ✓ Know how to create name plates
- ✓ Understand what master pages, stylesheets and templates are and how to use them in publication designs
- ✓ Understand the role of computers in designing
- ✓ Learn the basics of QuarkXPress for page designing

6.3. PUBLICATION DESIGN

Graphic design uses visual compositions to solve problems and communicate ideas through typography, imagery, colour and form. There's no one way to do that, and that's why there are several types of graphic design, each with their own area of specialisation.

Though they often overlap, each type of graphic design requires specific set of skills and design techniques. Many designers specialise in a single type; others focus on a set of related, similar types. But because the

industry is constantly changing, designers must be adaptable and lifelong learners so they can change or add specialisations throughout their careers.

Whether you are an aspiring designer or seeking design services for your business, understanding the eight types of graphic design will help you find the right skills for the job.

Publications are long-form pieces that communicate with an audience through public distribution. They have traditionally been a print medium. Think books, newspapers, magazines and catalogues. However, there's recently been a significant rise in digital publishing.

Graphic designers that specialise in publications work with editors and publishers to create layouts with carefully selected typography and accompanying artwork, which includes photography, graphics and illustrations. Publication designers may work as freelancers, as creative agency members or in-house as part of a publishing company.

Examples of publication graphic design

- Books
- Newspapers
- Newsletters
- Directories
- Annual reports
- Magazines
- Catalogues
- Websites

Publication designers must possess excellent communication, layout and organisational skills. In addition to graphic design expertise, they need to understand colour management, printing and digital publishing.

6.4. NAME PLATE

A nameplate identifies and displays a person or product's name. Nameplates are usually shaped as rectangles but are also seen in other shapes, sometimes taking on the shape of someone's written name. Nameplates primarily serve an informative function (as in an office environment, where nameplates mounted on doors or walls identify employees' spaces) or a commercial role (as in a retail environment, where nameplates are mounted on products to identify the brand). Whereas name tags tend to be worn on uniforms or clothing, nameplates tend to be mounted onto an object (e.g. cars, amplification devices) or physical space (e.g. doors, walls, or desktops). Nameplates are also distinct from name plaques. Plaques have larger dimensions and aim to communicate more information than a name and title.

When it comes to the name plate of a newspaper, it is referred to as the masthead. By definition, the masthead is the title of a newspaper or magazine at the head of the first or editorial page. Typically, in a magazine or a newspaper, you may see the masthead (also called a nameplate) on the cover or front page. Masthead is the name of the magazine displayed in the typeface in which it is designed. This is the visualbranding of the title and is usually done in a unique typeface to be very recognisable.

Fig. 6.1. Masthead or nameplate of a newspaper.

The masthead of the nameplate, usually, carries the name of the newspaper, its logo, publication location and date, a tagline (sometimes), apart from several other information such as publication details.

On the Internet, a masthead is a graphic image or text title at the top of a Web page that identifies the Web site and, sometimes, the particular section of the site. In addition to the name of the Web site, a masthead could include other elements such as images, text, or navigational links. The Web site masthead was named after a similar feature of newspapers and magazines, which in turn got its name from the top of a mast on a ship.

Check your progress - 1

NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

What are the usual elements of a newspaper masthead (or nameplate)?

_____

_____

_____

6.5. MASTER PAGES, TEMPLATES, STYLE SHEETS

Master pages

Master pages allow you to create a consistent look and behaviour for all the pages (or group of pages) in your print or web application.

A master page provides a template for other pages, with shared layout and functionality. The master page defines placeholders for the content, which can be overridden by content pages. The output result is a combination of the master page and content page.

The content pages contain the content you want to display.

Benefits of master pages

Design Consistency. Presenting your website with a consistent design on every page is vital when you want your visitors to easily navigate your site to find and discover what you want them to. Placing objects in consistent locations on your web page and using the same style approach for things such as titles, buttons, logos and so on is really important so your visitors don’t get a frustrating experience. Consistency should also extend to page

settings as well. Having a consistent framework to design your site in is easier for you as well as being easier for your visitors.

Design Accuracy. Web design also needs to be pixel perfect. Have you ever visited websites where things like titles and buttons jump around a bit as you move from page to page? Or the background colour changes slightly when it really shouldn't? Your website should focus your visitor on its content, not the distraction of a poorly placed objects on the design canvas. A Master Page will instantly take these issues away and you'll have a more focused visitor as a result.

More Professional. Your website is often the first place potential and existing customers go to when they want to discover more about you, your company, your products or your services. Often it's your calling card for the digital age. Creating a professional appearance is a must. If you have followed the first two points above, you're already getting there. Take time to think about the design of your Master Page(s) as and test the results on mobile, tablet and desktop devices. If necessary create Master Pages for each environment so that you offer your visitors the right experience on all platforms. It's the professional approach!

Easier Website Maintenance and Updates. Having one Master Page to maintain and update rather than all of your web pages is a no brainier. Having just one page to update means you're less liable to make mistakes. Updating many pages with the same changes is boring and repetitive which is where errors start to creep in.

Saves Time. We all know that time is a valuable commodity to most people. Using a Master Page is the perfect tool for this. If you do make a mistake, or need to make changes or a quick website update it's faster and more efficient to do so using a Master Page. All changes immediately get applied to any page that uses the Master Page so it couldn't be easier!

Template

A template is a file that serves as a starting point for a new document. When you open a template, it is pre-formatted in some way. For example, you might use template in Microsoft Word that is formatted as a business letter. The template would likely have a space for your name and address in the upper left corner, an area for the recipient's address a little below that on the left site, an area for the message body below that, and a spot for your signature at the bottom.

When you save a file created with a template, you are usually prompted to save a copy of the file, so that you don't save over the template. Templates can either come with a program or be created by the user. Most major programs support templates, so if you find yourself creating similar documents over and over again, it might be a good idea to save one of them as a template. Then you won't have to format your documents each time you want to make a new one. Just open the template and start from there.

The term template, when used in the context of word processing software, refers to a sample document that has already some details in place; those can (that is added/completed, removed or changed, differently from a fill-in-the-blank of the approach as in a form) either by hand or through an automated iterative process, such as with a software assistant. Once the template is completed, the user can edit, save and manage the

result as an ordinary word processing document. Word processing templates enable the ability to bypass the initial setup and configuration time necessary to create standardized documents such as a resume. They also enable the automatic configuration of the user interface of the word processing software, with features such as auto-completion, toolbars, thesaurus, and spelling options.

Word processing templates are ordinarily included as a regular feature in most word processing software. In addition, users of such software often have the option to create and save their own templates, to acquire them from the original vendor of the software, or from third parties.

Style sheets

A style sheet is a feature in desktop publishing programs that store and apply formatting to text. Style sheets are a form of separation of presentation and content: it creates a separate abstraction to keep the presentation isolated from the text data.Style sheets are a common feature in most popular desktop publishing and word processing programs, including Corel Ventura, Adobe InDesign, Scribus, PageMaker, QuarkXPress, WordPerfect, and Microsoft Word, though they may be referred to using slightly different terminology.Individual styles are created and may include a wide variety of commands that dictate how a selected portion of text is formatted:

- Typeface or font
- Boldfacing
- Italicizing
- Underlining
- Justification (left, right, centre, justify, force justify)
- Space before and after paragraphs
- Tab stops and indentation
- Type size
- Leading
- Kerning
- Tracking
- Colour
- Borders or strokes
- Superscript or subscript
- Drop caps
- Letter case
- Strike through
- Outline font style
- Hyphenation

In most programs with style sheets, there is a window or menu listing the style sheets the user has associated with the document. For example, a newspaper may have a style sheet for its story text called "Body copy" that sets the type at 10 point Nimrod with 11 point leading and justified alignment.Most programs allow users to name their own styles. Usually easy-to-remember names are used that describe what the

style is used for. Common names might include "headline," "subhead" and "byline."

To apply a style to a portion of text, most programs allow users to select the text with their mouse and then click on the desired style in a style panel.Style sheets help publications maintain consistency, so common elements such as story text, headlines and bylines always appear the same. Style sheets also help save time allowing a designer to click once rather than having to apply each element one at a time and risk using an incorrect value.Finally, style sheets are also useful if a publication decides to make changes to a design - say, make the story text slightly smaller.

A user with proper administrative access can make the change to the master style sheet and then "send" the revised style sheets to all users, so the change is automatically reflected.

Some programs split style sheets into two classes: paragraph and character.Paragraph style sheets are applied to an entire paragraph while character styles are applied to only a select number of characters. Character styles are useful when a user needs to format only a small portion of a paragraph. For example, a newspaper may publish lists of current movies by starting with the name of a movie in a bold, sans serif typeface. Then, without starting a new paragraph, the review starts in the standard story text format. In this case, the designer could highlight the movie title and select the appropriate character style to apply the formatting only to the title. The rest of the paragraph can then be styled independently.

More advanced layout programs allow users to format more complex paragraphs with a single paragraph style. Using our movie review example above, say the newspaper always places a colon after the movie title and runs 10 short movie reviews as one large story. In this case, the style could be programmed to apply the bold, sans serif typeface at the start of a new paragraph until it encounters a colon. After the colon, the style switches to the standard story text style. Therefore, the designer could highlight the entire collection and apply only one style that will automatically format the entire story without having to go through and apply separate character styles to each of the 10 reviews.

Some scorewriters, including MuseScore and Sibelius, implement style sheets to control the appearance and layout of sheet music.

Check your progress - 2

NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

Write a brief about the roles that master page, stylesheet and templates play in news page design.

_____

_____

_____

6.6. DUMMYING PROCESS

We all know that the concept of placing photos, illustrations and stories on a page is important, and more than just a mechanical process. The way articles are displayed, their size, and their headlines tell readers the importance you are giving to each story. Bigger, more prominently placed equals more important. Smaller, less prominently placed equals less important. Who has not at times looked at a publication and said, "of course, they put that story on page 18 at the bottom—theyare biased against that topic." Or "of course that's a big story, and a big headline, right on the cover, because they are obsessed with that topic."

That's why the process of placing elements on a page involves decisions made by editors. Normally editors are responsible for certain sections of a large publication. In a newspaper, for instance, a "wire editor" may be responsible for choice and placement of national and international news, which comes over the wire (well, now computer) news services. A sports editor will be responsible for sport pages. An editorial page editor will be responsible for editorial pages, etc.

This involves important choices, as well as a knowledge of the mechanical way a publication gets made, and the operation of the publication that makes sure everything gets done correctly, and on time. Most publications of any size have a standardised, routinized, never-vary set of guidelines for the mechanical process of placing elements on a page. Why? Well, for the same reasons that a pilot has a chart of routine checks before taking off, which must be followed in order, and must never vary. It guarantees you won't forget something important.

Pre-press is where photos are edited, advertisements are created and composed and the whole pages of the newspapers are laid-out and designed.

After stories have been edited, the editor and other sub editors will sit in an editorial conference to determine what goes inside the paper for the day. Then, each sub-editor is expected to plan their pages if possible. The marketing department also will forward the advertisements that have been paid for with specification of the pages allotted to the advert, all these will be forwarded to editorial department so as to add these pages in their planning process. The newspaper planning is done on a dummy sheet to give a prototype of the final outlook of each pages, this is called page planning. After the planning, the editorial department forwards the already planned pages to the graphic section where the dummy sheets are transformed into meaningful digital form. At the pre-press, text, pictures, cutline, graphics, and graphical illustrations as well as colour are put together to form the newspaper pages. Smaller newspapers sometimes still use desktop publishing programs (DTP) such as Corel Draw, Adobe PageMaker, Adobe InDesign, QuarkXPress and other graphic design software. This software enables the graphic designer to easily compose pages and output them on a hardcopy proof-printer for proofreading and sending the corrected and finished pages to the printing press of the newspaper.

6.7. ROLE OF COMPUTERS IN DESIGNING

Computers play a pivotal role in the design of newspapers. In the yesteryears, newspaper design was majorly a mechanical process. In the pre-computer era, news page designers melted lead to produce alphabet blocks and arranged them in a mechanical process to print pages. Corrections and creation of news-page blocks had been a tiresome process. Thank to computers and software, page designing has become such an easy process.

Several software such as the Adobe InDesign and QuarkXPress have provided digital platforms for news-page design. This process of news-page design has become so simple that a section of newspapers have done away with page layout artists. Even several Indian newspapers make the sub-editors to also perform the task of news-page design. It has become so simple because such software offer features such as error correction (Ctrl+Z). Laying out text and images on newspaper have also become so simple because of the creation of stylesheets, templates and master pages.

When the master page is provided to the copy-editors or low-level designers, they use it to create new pages. Further, the stylesheet can be used to accurately follow the prescriptions that are set for the elements of newspapers. For instance, the headline needs to have a certain font and font size, while the body text of news reports need to have a different font and size. Further, the templates are readymade blocks of news-page designs that can be used for a new story by just altering the text and images of the template. In other words, the new story or text can replace the dummy text in a template and the new story block can be created for a news page.

6.8. QUARKXPRESS

QuarkXPress is a desktop publishing software for creating and editing complex page layouts in a WYSIWYG (What You See Is What You Get) environment. It runs on macOS and Windows. It was first released by Quark, Inc. in 1987 and is still owned and published by them.

QuarkXPress is used by individual designers, large publishing houses and corporates to produce a variety of layouts, from single-page flyers to the multi-media projects required for magazines, newspapers, catalogues, and the like. More recent versions have added support for ebooks, Web and mobile apps.

The package provides the basic functionality of font, alignment, spacing, and colour, but it also provides its users with professional typesetting options such as kerning, curving text along a line, and ligatures.

A QuarkXPress document contains text and graphics boxes. The boxes can be reshaped, layered, and given varying levels of transparency and text alignment (runaround). Both graphic and text positioning is allowed within a box with an accuracy of one-thousandth of an inch.Colour control allows the full-use of printing-press standard Pantone or Hexachrome inks, along with a variety of other colour-space options. Draft output can be printed on conventional desktop printers. Process colour (CMYK) separation films can be produced for printing-presses.

QuarkXPress also offers the ability for composite work-flows, both with PostScript and PDF output.QuarkXPress offers layout synchronisation, multiple undo/redo functionality, XML and web page (HTML) features, and support for direct PDF import and output. Documents can be verified (pre-flight) before printing. This high-level print preview automatically identifies conflicts and other printing problems. Adobe has a similar feature in InDesign.

Composition zones feature makes it the only desktop application with multi-user capabilities by allowing multiple users to edit different zones on the same page. Composition Zones pushes collaboration a step further than just simultaneous text/picture (as possible with Quark CopyDesk since 1991), as it allows layout and graphic elements to be edited outside the layout application.User-defined rules, output specs, and layout specs can be used for intelligent templates and enable resource sharing (for example, server-based style sheet definitions).

Version 6.5, released at the end of 2004, added enhanced support for Photoshop format (PSD). The PSD integration and picture manipulation features led to QuarkXPress receiving a number of awards, such as the Macworld Editor's Choice for 2004.

Version 7 added support for OpenType, Unicode, JDF, and PDF/X-export. QuarkXPress 7 also added unique features, such as native transparency at the colour level.

QuarkXPress 8 introduced a completely new user interface, support for drag and drop, PDF 1.7 import, AI Import and a global file format. Design grids can be assigned to pages and boxes to allow unlimited baseline grids. Hanging characters can be applied and customized by character and amount to hang outside the box. This is the first version to include built-in Adobe Flash authoring. Designers can create Flash content including sound, video, animation and interactivity without programming. In October 2008, QuarkXPress 8 won the MacUser Award for Print Publishing Software of the Year.With version 9 QuarkXPress extended its cross media publishing approach and can be used now to also export to eBooks (ePub3 and Blio) and native apps (for the iPad). With App Studio, which is shipped with QuarkXPress, designers can even create and design their own apps. Additionally QuarkXPress 9 offers cascading styles (stylesheets based on text content), callouts (anchored objects that flow with the text based on position rules), create complex ad editable Bézier paths using a wizard (ShapeMaker), bullets and numbers (with import & export from/to Microsoft Word) and more.

The Mac version of QuarkXPress 9 is for Intel processors only, making QuarkXPress 8.5.1 the last choice for PPC-based Macs.

QuarkXPress 10, was described by Quark as a major rewrite of the software on the Mac platform in particular to move it from the older Carbon API to Cocoa. It also included a new, modern graphics engine, Xenon. During the lifecycle of version 10, new features included Retina Display support, PDF pass-through transparency, notes, redlining, increased zoom (8000%) and the ability to create HTML5 animations for inclusion in App Studio tablet and smartphone apps.

QuarkXPress 2015 was the first version to use a different naming scheme. It was completely 64-bit and added fixed-layout ePub and Kindle export as well as exporting layouts as PDF/X-4. Quark claimed to have added the top 10 of all user-requested features.

QuarkXPress 2016 included the ability to import and copy and paste from other applications and file formats to native QuarkXPress objects. The release also includes revamped digital capabilities including being able to create HTML5 Publications. Top user requested features include multi-gradient blends and a colour picker tool.

QuarkXPress 2017 continued the new naming scheme and established an annual release cycle. The headline features include non-destructive image editing, various typography enhancements such as text stroking and text shading, responsive HTML5, and unlimited iOS apps for no additional cost (outside of the Apple Developer fees). Other user-requested features included adaptive layout conversion for print, smart quotes, and proportional leading.On March 1, 2018, Quark announced QuarkXPress 2018, stating it would be available on May 16, 2018, continuing its now familiar annual release cycle. The headline features in version 2018 include new OpenType controls, hyphenation strictness, support for colour fonts, IDML import (to convert Adobe InDesign documents to QuarkXPress) and the ability to create unlimited Android apps for no additional cost (outside of the Google Play fees).

Check your progress - 3
NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

Outline any three important features of QuarkXPress.
_____
_____
_____

6.7. LET US SUM UP

Starting with an introduction to publication design, this unit delved into nameplate or the masthead of a newspaper of magazine. It is the visual branding of that publication and features several elements. Further, this unit ventured into explain the roles of master pages, templates and stylesheet in publication design. Then, it discussed the role of computers in designing, and particularly, how the software QuarkXPress is used for design.

6.8. UNIT-END EXERCISES

Compare and contrast the mastheads of two popular Indian newspapers.

6.9. ANSWERS TO CHECK YOUR PROGRESS

13. What are the usual elements of a newspaper masthead (or nameplate)?
    Answer: The masthead of the nameplate, usually, carries the name of the newspaper, its logo, publication location and date, a tagline

(sometimes), apart from several other information such as publication details.

14. Write a brief about the roles that master page, stylesheet and templates play in news page design.
Answer: Laying out text and images on newspaper have also become so simple because of the creation of stylesheets, templates and master pages.When the master page is provided to the copy-editors or low-level designers, they use it to create new pages. Further, the stylesheet can be used to accurately follow the prescriptions that are set for the elements of newspapers. For instance, the headline needs to have a certain font and font size, while the body text of news reports need to have a different font and size. Further, the templates are readymade blocks of news-page designs that can be used for a new story by just altering the text and images of the template. In other words, the new story or text can replace the dummy text in a template and the new story block can be created for a news page.
15. Outline any three important features of QuarkXPress.
Answer: A QuarkXPress document contains text and graphics boxes. The boxes can be reshaped, layered, and given varying levels of transparency and text alignment (runaround). Both graphic and text positioning is allowed within a box with an accuracy of one-thousandth of an inch.Draft output can be printed on conventional desktop printers. Process colour (CMYK) separation films can be produced for printing-presses.Composition zones feature makes it the only desktop application with multi-user capabilities by allowing multiple users to edit different zones on the same page.

6.10. SUGGESTED READINGS

- Steven E. Ames. Elements of Newspaper Design. Praeger, 1989
- Tim Harrower. The Newspaper Designer's Handbook. Edition 5, McGraw-Hill, 2002.

UNIT VII

Chapters

7.1. INTRODUCTION

Newspapers and magazines are two important forms of print media that are read by millions of people around the world. Some of the most common differences between newspapers and magazines can be seen through their size and appearance, content, style, target audience, design and layout, readability and advertisements. Let us have a glance through these factors in this unit apart from the sections of newspapers and their styles.

7.2. OBJECTIVES

After you complete this unit, you will be able to

- ✓ Understand the components of newspapers and magazine design
- ✓ Understand the styles of popular newspaper sections

7.3. ARCHITECTURAL COMPONENTS OF NEWSPAPERS AND MAGAZINES

Newspapers are bigger in size and they can be folded. A story above the fold on the front page of a newspaper is considered as the most important story and one that appears just below the fold is generally the second most important story. If there are many important stories on a newspaper page, then the treatment given to a story will decide its importance: such as, photos/graphics with a more important story and with no visual elements in other stories. The eyes of a reader can scan an entire page without a fold. A magazine tends to have a "book-type" size while the newspaper is really meant to be spread arm's length for the reader to grasp its contents.

Content

Newspapers deal with reports clearly, briefly and objectively. A magazine writer focuses on specialized topics and current issues of public interest.

Newspapers remain the primary source of authentic, reliable and latest information about what is happening around the world and even in one's own locality. But magazines are not sources of fresh content to the extent of publishing breaking news. However, its content is specialized and recent in nature. Thus, we have various magazines such as entertainment, science, share markets, sports, glamour and movies. Newspapers are versatile and hence they never fall short of content as there is always something happening in different parts of the world. On the other hand, magazine content is always based on the liking of the readers of diverse backgrounds.

Style

Newspapers focus on catchy headlines to create interest in the reader. Many reporters and editors are employed in newspapers to prepare specialized reports and interpretative articles. But magazines have lesser staff. A magazine writer has more freedom to express or has more room for subjectivity. S/he has the tenacity and freedom to express things in a creative manner. It further enhances the writer's mastery of the expression by imploring these seemingly circular methods of self-expression. The newspaper writer on the other hand is compounded to a somewhat strict, strong and straight writing mostly based on facts and figures.

Design and layout

Newspapers are known for their simple layout and design. While the content is usually in black and white, the style and font are fairly consistent throughout. Magazines have much more visual expression than newspapers because magazines are not subject to one consistent layout. Magazines use lots of colours, different types and sizes of fonts and break up their articles with images and colour.

Target audience

The main difference between a newspaper and a magazine is that newspapers are written for a general audience, while magazines are for specific types of audiences. A magazine attracts varied target audience. A newspaper's target audience is determined by its geography and its focus is broad. Here, the editor determines what people should read, what they want and desire. In contrast, a magazine' target audience is determined by demographics and interests. ('Demographics' mean the physical characteristics of the individual such as race, gender, interest, education level etc.). Hence the target audience of a magazine is usually separated geographically, but they share common interests; for example, a common interest in sports, fashion or beauty. A magazine editor should understand the nature of the target audience.

Readability

News stories are usually written in a matter of fact style. But magazines employ colourful language so as to make the content enjoyable. The newspaper readability level corresponds to a difficult classification built around tight grammatical and syntactical rules. Linguistic subjectivity which relies on expressive adjectives enhances the readability of magazines.

Display ads

Though magazines and newspapers both provide readers with information, their format and appeal differ considerably. Magazines are more advertiser-driven than newspapers. Newspapers are slightly different in this regard. Newspapers are driven more by readership than by advertisers. They focus more on catchy headlines in an effort to capture the reader's interest and get him to read the entire story. Part of the reason for this is that people often associate what they read with an ad they see near the piece. Our minds just naturally attach and group objects and associations together. Advertising giants know this and place their ads exactly in proper alignment with stories and articles they want to associate with their products on those specialized magazines.

Visual strength

The visual strength of magazine is enhanced with the effective use of colour in magazines. In magazines, we can also use a colour background whereas newspapers normally have only a white background. This means you can present more attractive colour contrasts in your magazine visuals.

Shelf life

Another strength of magazine is longer life. Newspapers are read only once and then discarded. In contrast, magazines are commonly kept for several days, weeks or months in magazine racks which provides for possible repeat reading. Magazines use some of the highest-quality paper and ink to produce a visually appealing product meant to be kept and read longer than a newspaper. Magazines tend to focus on entertainment pieces, provide how-to-do articles and features about certain subjects within their chosen marketing niche. Magazines also have advertisements taking up large amounts of page space to balance the cost of production.

How to structure a magazine article

As soon as you're ready to write a magazine article, you need to think about structure. With magazine articles, you can move beyond the inverted pyramid style of news by scattering important points throughout the article.

Tell a story

The important thing to remember is that you're telling a story to your readers. That means you need a beginning, a middle and an end. It also means you need to think about where you're taking your reader and create a logical path to that end point.

*The beginning.*To get people to read your article, you need to find a way to grab them. For example, you can begin an article with a quote or an anecdote from a person's life. However, you can also set the scene or use anything that will attract the reader's attention.

*The middle.*With most magazine articles, you talk to a person or people. People like reading about other people, so if your interviewee says something good, use a quote rather than the reported speech. This makes your magazine article more interesting.

*The ending.*Finally, end with a bang. This could be in the form of an important point, a revelation or another anecdote or quote. The idea is to satisfy and to get the reader interested in your other writings as well.
Extra credit. When you do research for an article, you often have information leftovers that didn't make it into the main piece. Don't get rid of this. Use it to create a sidebar or table (editors will love this), or as a starting point for another article.

7.4. FORMATS AND PAGE MAKE-UP

Newspaper Article Format

A typical newspaper article contains five (5) parts:
Headline: This is a short, attention-getting statement about the event.
Byline: This tells who wrote the story.
Lead paragraph: This has ALL of the who, what, when, where, why and how in it. A writer must find the answers to these questions and write them into the opening sentence(s) of the article.
Explanation: After the lead paragraph has been written, the writer must decide what other facts or details the reader might want to know. The writer must make sure that he/she has enough information to answer any important questions a reader might have after reading the headline and lead paragraph. This section can also include direct quotes from witnesses or bystanders.
Additional Information: This information is the least important. Thus, if the news article is too long for the space it needs to fill, it can be shortened without rewriting any other part. This part can include information about a similar event."Newspaper makeup" is defined as the design of a newspaper page or the manner in which pictures, headlines and news stories are arranged on a page.
The objectives of newspaper makeup areas follows:

- To indicate the importance of the news
- To make the page easy to read
- To make the page attractive

Makeup Lines

You will use the following four basic types of "lines" in newspaper makeup:

Vertical Line
The vertical line is used to get the reader to read up and down the page. The line is carried out on the page by displaying stories, headlines and pictures vertically on the page. It is characteristic of the makeup of newspapers in early America and is still used to a limited degree in making up newspapers today.

Diagonal Line
The diagonal line is used in newspaper makeup to get the reader to read through the page. The line is carried out on the page by displaying headlines and pictures so together they form a diagonal line from the upper left-hand corner to the lower right-hand corner of the page. Also, a page can contain a double diagonal by forming another diagonal in the opposite

direction from the first. The diagonal line lends a sense of rhythm to the page. It is characteristic of many of today's newspapers.

Circular Line

The circular line is used in newspaper makeup in an attempt to get the reader to read around the page. The line is carried out on the page by displaying stories, headlines and pictures on the page so the reader sees each as being equally important. This creates a tendency on the reader's part to read all the stories. The circular line is used to a limited degree in modern newspapers.

Horizontal Line

The horizontal line is used in newspaper makeup to get the reader to read back and forth on the page. The line is carried out by displaying stories, headlines and pictures horizontally on the page. The horizontal line is a post-World War II development and it is probably the most striking change in the appearance of newspapers in this century. It is a characteristic of many present-day newspapers.

Check your progress - 1

NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

What are the objectives of newspaper makeup?

_____

_____

_____

7.5. FRONT PAGE

Each page of a newspaper has a focal point - a point on the page to which the reader normally looks for the most important story. Any area can be the final point, depending on the chosen design. Advertisements can also dictate the focal points of the inside pages of a newspaper.

On the front page of some daily newspapers, the focal point is often in the upper right-hand corner a now-dated practice that reflects the style of a bygone era. Americans, although trained to read from left to right and top to bottom, greatly altered this pattern for many years with respect to their newspaper reading habits. Through the use of banner headlines that extended more than half the width of the page, readers were trained to seek the upper right-hand corner of the front page. Newspaper readers begin their reading by following the banner headline across the page and continuing down the right-hand side of the page. Therefore, many newspaper readers have come to expect the most important story in each issue to appear or touch in the upper right-hand corner of the front page.

The right-hand focal point is not as important to makeup editors as in the past, since fewer newspapers use banner headlines on the lead story.

However, many newspapers still carry the most important story in the upper right-hand corner of the front page because of established practices.

Today, a large percentage of newspaper editors use the upper left-hand corner as the focal point. These editors think that readers, trained in school to read other literature from left to right, prefer their newspapers to be designed that way too. A few editors still use other areas, such as the upper centre of the front page as the focal point. Only time will tell which is best, if indeed, there is a "best."


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JOURNALISM OF COURAGE

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P10 EXPRESS NETWORK
PRAGYA, 7 FREED OF MURDER CHARGE
BATHINDA BLAST: THREE MORE DIE, TOLL RISES TO SIX

P14 THE EDITORIAL PAGE
Steadying the ship
By Pratap Bhanu Mehta
THE IDEAS PAGE: What's not to like? By Rajiv Lall, P16

WORLD
TRUMP NAMES NEIL GORSUCH AS PICK FOR SC
P26

SPORT
CHAHAL'S 6/25 GIVES INDIA SERIES WIN P27

SHORT ON BIG IDEAS, STAYS THE PRUDENT COURSE IN UNCERTAIN TIMES

No-nonsense Budget

The signal: Back the small — firm, farmer, taxpayer

Over-ambitious on divestment despite poor record, little to alleviate bank stress

P VAIDYANATHAN IYER

BUSINESS AS USUAL
By UNNY

Modinomics means: govt less a spender, more an enabler

HARISH DAMODARAN

EXPLAINED

EXPRESS EXPLAINS

Well-off hit: Tax halved for below Rs 5 lakh, Rs 50 lakh-1 crore face 10% surcharge

SANDEEP SINGH

UNION BUDGET 2017-18

Fig. 7.1. A newspaper front page on a special day.

7.6. INSIDE PAGE

The focal point on inside pages is the upper left-hand corner if there are no advertisements. Therefore, the focal point is influenced by a newspaper reader's natural sight tendencies and is not hampered by customs.On inside pages with advertising, the way ads are placed on the page influences the position of the focal point. The focal point is always opposite the lower corner of the page that is anchored by the largest mass of advertising.

7.7. EDITORIAL

An editorial is an article written by or under the direction of the editor of a newspaper or magazine, or a statement broadcast on radio or television. Editorials give opinions on important social, political, economic, or legal

issues of the day and intend to persuade readers to agree to a particular point of view. An editorial, printed on the editorial page of newspapers, is an example of persuasive writing and many of the suggestions in TN 24: Persuasive Writing are relevant.

Editorials reflect the views of the owners, managers or board of directors of media companies. Editorials of major papers are often viewed by readers in terms of their positioning as right (conservative), centre (liberal), or left (socialist) on the political spectrum. Furthermore, editorials usually do not shy from controversy, in the hope of not only presenting the issues to the reading public, but also of drawing response from the public and attracting new readership in the competitive marketplace.


14

AN ECSTASY OF IDEAS

UP's Blockbuster Drama

Modi In Israel?

Stop The Violence

'Won't block highways but essential supplies to Delhi will be stuck with so many Jat agitators on the road'

Q & A

Ivy Log Ejukaysun

Dilbert

Adiyogi - From Religion To Responsibility

Fig. 7.2. Apart from the front page, the masthead and logo of a newspaper, generally, appear on the Editorial page.

Editorial Structure

An editorial is similar to an essay in that it focuses on a specific issue or topic, offers a thesis, and provides evidence and supporting arguments to convince its readers. The title clearly identifies the topic; the introductory statement includes the writer's view on the issue; the body provides supporting evidence and examples; and the conclusion restates the writer's view and provides a final appeal for the reader to agree to that view.

Suggestions for Planning the Editorial:

- Decide what issue you will write about and clearly define the issue.
- Consider who your intended audience will be (for example, it may be the general readership, or it may be directed at those who hold a particular view that may or may not already have been expressed in the media or other public forum).
- Brainstorm a variety of strategies you can use to gain reader support for your view on the issue. These might include acknowledgement of the reader's current viewpoint, listing benefits of the view you are promoting, providing reliable evidence, and using sound reasoning.
- Develop logical and ethical arguments; avoid purely emotional rhetoric.
- Conduct necessary research both to gather information about the audience you are writing for, and to collect evidence, examples, and support for the view you are promoting.
- Develop an outline to follow before you begin writing.

Writing the Editorial:

- Follow the pattern and style of editorial writing.
- In most editorials, the opinion of the writer is given near the beginning, followed by supporting evidence and reasoning (direct approach).
- The first person plural voice (we, our) is most common in editorial writing and is appropriate in establishing the credibility of the writer.
- Editorials should be short, precise, and well organized.
- Develop a strong introductory statement to capture the reader's attention and to state your opinion. Use a logical sequence for presenting your arguments, and an effective conclusion to maximize the impact on the reader.

7.8. OPINION PAGE

Opinion pieces, colloquially known as "op-eds" because they appear on the editorial pages of the newspaper next to syndicated writers, offer you a chance to get your viewpoint out in a visible way. Op-eds, some of which are solicited by a newspaper's opinion editor, are written by people not affiliated with the paper—from business executives and scientists to school kids and interested local citizens.It is often difficult to get an op-ed published in a newspaper. There is limited space for them and editors receive a larger number of unsolicited articles. You might consider other options first, as op-eds take more effort and time than a letter to the editor,

for example, or a guest post on a relevant, well-read blog.Just like a good essay, op-eds have an introduction, body, and conclusion. The introduction should grab the reader and encourage him or her to read on. Use timely references, colourful language, metaphors, or personal references to get the reader's attention. Try to limit the introductory paragraph to three sentences.

The body of the piece further develops your thesis, giving some background and context. Keep each paragraph short and focused. Each paragraph should range from three to five sentences. Try to make one point in each paragraph, and be sure each paragraph flows into the next smoothly. Every paragraph should tie back to the introduction and your overall thesis. Be sure not to get off-track or follow tangents; if the reader will only take away one message from your op-ed, what do you want it to be?

The final paragraph should wrap up the piece. Do not leave any dangling ends. Tie everything up and close with a kick. Your conclusion should refer back to your introduction, carrying the same theme but adding something new. Use your conclusion to state your overall point or opinion. Just as the first sentence should grab the reader and make her/him want to continue to read, the closing line should be memorable and make your overall point stick in the reader's mind.

Check your progress - 2

NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

Where do opinion pieces or Op-ed stories appear in a newspaper?

_____

_____

_____

7.7. LET US SUM UP

Each page of a newspaper has a focal point - a point on the page to which the reader normally looks for the most important story. Any area can be the final point, depending on the chosen design. Advertisements can also dictate the focal points of the inside pages of a newspaper. A newspaper is divided into several sections for the ease of the reader. Depending on the content and nature of the news stories, each of these sections and page sport designs that help and accentuate their respective agenda.

7.8. UNIT-END EXERCISES

Compare and contrast the mastheads of two popular Indian newspapers.

7.9. ANSWERS TO CHECK YOUR PROGRESS

16. What are the objectives of newspaper makeup?
Answer:To indicate the importance of the news; To make the page easy to read; To make the page attractive
17. Where do opinion pieces or Op-ed stories appear in a newspaper?
Answer:Opinion pieces, colloquially known as "op-eds" because they appear on the editorial pages of the newspaper next to syndicated writers.

7.10. SUGGESTED READINGS

- Robert Klanten, Anja Kouznetsova, Javier Errea. Newspaper Design: Editorial Design from the World's Best Newsrooms. Gestalten, 2018
- Steven E. Ames. Elements of Newspaper Design. Praeger, 1989

UNIT VIII

Chapters

8.1. INTRODUCTION

Newspapers and magazines have several sections. For instance, the most important stories of the day are laid out on the front page of the newspapers. Because, a busy reader may have time to go through only the front page. And, what he has missed inside are the stories of lesser importance. Sports stories are, typically, placed on the last pages of the newspapers.

A sports buff may, without even going through the front page stories, go directly to the last pages to read his or her favourite sports news. Sectionalising the newspapers saves time for the readers to spot their favourite news. Each newspaper has different sections of news placed in particular pages, so that the regular readers know where which sections comes. For instance, city stories are placed in the second, third and fourth pages. Editorial and Op-ed pages come near the centrespread. This unit will get into how the lifestyle and feature, food and fashion, entertainment, business and classifieds pages are designed. It will also explain what the characteristics of these page designs. It will also look into the designing of special and regular sections and book design.

8.2. OBJECTIVES

After you complete this unit, you will be able to

- ✓ Identify with lifestyle and feature sections of a newspaper
- ✓ Understand the characteristics of food and fashion, entertainment, business and classifieds pages.
- ✓ Know how special and regular sections differ in terms of design
- ✓ Understand the basics of book design

8.3. LIFESTYLE AND FEATURE PAGES

In a newspaper, this section features news stories on the lifestyle of people and this includes topics such as culture and clothing. Such lifestyle stories may also appear on the main edition of the newspaper that is for hard news

articles. However, feature stories predominantly appear in the supplements that are given with the newspapers. Lifestyle is one major section of feature stories. It is titled as Lifestyle or sometimes Life & Style and encompasses a variety of topics. These topics tend to relate to life at home and how the readers can look after themselves as well as a variety of hobbies to engage themselves in. The content will vary depending on the newspaper.When it comes to designing such news stories, a creative and colourful layout that uses a lot of whitespace is used, unlike the tight hard news layout.

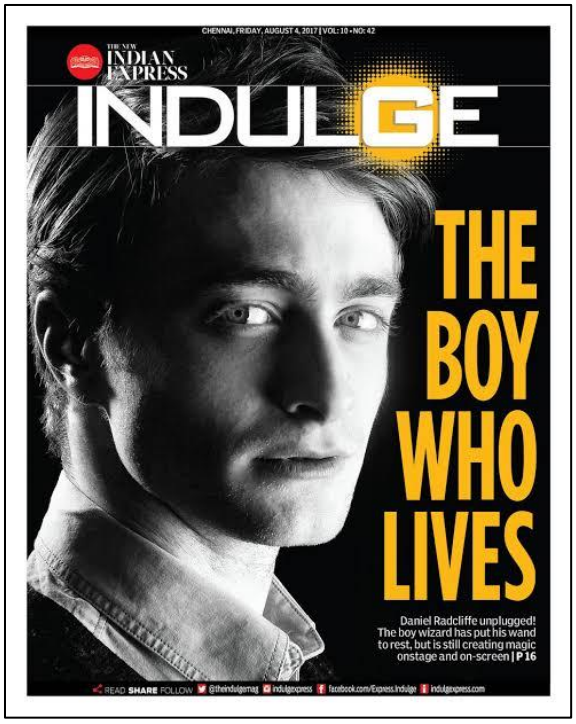

Fig. 8.1. A supplement of TNIE in tabloid size.

Some of the topics included in the Lifestyle section include:

Fashion. This content usually advises its readers on the latest fashion and clothing items available in the market and through retailers. There can often be sections relating to celebrity fashion and what is in during the current season. You can also find news relating to fashion shows and designers in this section.

Food. This content is often related around giving readers advice and recipes for cooking. This can range from creating seasonal foods, low calorie dishes and cheap homemade cooking options to choose from. There could also be features from famous chefs in this section depending on the publication.

Health and Fitness. The health content often links in very well with the food area of this section. It advises on the nutritional value of foods that we eat as well as other features like health guides. The fitness section advises readers on the ideal workouts to lose weight and tone up.

Family and relationships. This section tackles the problems that readers may be having with their family or indeed with

their relationship. It can often have sections where letters are answered by experts in psychology and social interaction.

These are just some of the sections that are often included under the Lifestyle section of a newspaper.

Feature story

A feature story is a colourful and pictorial piece of composition which gives stability to constructive public opinion.

According to a writer, News Feature is more effective than editorial, more interesting than a column in and more informative than news. Feature writer enjoys a sort of fame which no reporter, journalist or columnist can get, because readers of all communities read features very keenly. It helps the reader to arrive at a certain conclusion and also provides him possible solutions of a problem. It is such a virtuous force before which all powers of evil bow.Daniel R Wilson writes about significance of feature. "Feature has become an integral part of newspapers in their combat with electronic media". W. R. Peterson says. The dramatic style or writing a feature gives it an edge over other items of the paper and when a reader the stories of life around him in a dramatic style he enjoys them very much. News Feature Story is a colourful and enchanting report, whereas news is a dull one. News accompanies only one picture but many sketches and pictures are given with a feature. The reason of pictorial nature of a news feature is the fact that no aspect of the matter remained unanswered. There is no set pattern of writing a feature. Whatever point the feature writer considers more important is given before others and much stress is laid upon it.

News tells the facts of an incident. But a feature answers how's and why's of the said incident. News is the offspring of an incident, but it takes its life from news. And features, unlike columns, are neither written under permanent captions nor are these published at fixed places. Features also contain less material as compared to columns. There is no headline in column but a feature contains many of those. And, unlike a column, a feature contains many pictures.

Fig. 8.2. Another issue of the same supplement of TNIE. Note the use of white space on its front page to give it a leisurely feel.

A writer can pen down a literary essay without consulting facts, but a feature needs thorough research. Moreover, an essay can be published in many episodes. But a feature is never published in parts. Now, we compare feature with editorial. An editorial is always written on an important contemporary issue. But a feature can be written on any topic. The objective of the editorial is to propagate the newspaper policy. While the feature writer does not feel obliged to follow such things. Therefore, a feature bears far more importance than column, editorial, short story and reportage. In the beginning, articles were published abruptly in the newspapers. People did not want abrupt pieces of information. Then feature was introduced in the early years of the 20th century. Urdu journalism has always been under the influence of English journalism.

Comparison with news journalism

News journalism deals with information of current events or reports of events that have previously occurred. The main purpose of this type of journalism is to inform. Entertainment journalism deals with information of the entertainment industry such as films, television shows, events, music, fashion and video games among others. The main purpose of this type of journalism is to entertain. Journalists can skew facts in a particular matter that cause their story to come across as entertainment. This action can have a profound effect on the consumer, making the authenticity of the report questionable. Cases of this problem can occur in news articles, magazines, and documentaries. Entertainment has different news values from mainstream news.

Popular forms

Lifestyle and celebrity

This is focused on celebrities and their lifestyles and feeds off television soap operas, reality television, members of royal families, and the like. Red carpet reporting and interviewing of celebrities during film festivals and award shows are part of entertainment journalism.

Film

A review or analysis of a motion picture released to the public. The critic's review or analysis is subjective and informative, with a focus to inform and entertain the consumer. Film criticism is considered to have had a major impact on the integration of the cinema into mainstream media. It is stated that film criticism wasn't fully accepted as an art until film was widely accepted in the 1960s. The Internet has further advanced the acceptance of this entertainment journalism with the introduction of film blogs and film review sites. Some popular film review sites and blogs include Rotten Tomatoes, IMDb, and Metacritic.

Video game

A form of journalism that covers all aspects of the video game industry. The birth of the computer age in the 1990s forced media companies to

release content that would attract consumers in the video game generation. Visually stimulating print magazines were introduced into the market, covering the video game industry. Some popular video game review sites and print based magazines include IGN, Game Informer, Nintendo Power, and GameSpot.

Internet

The rise of the internet allowed many amateur and semi-professional personalities to start their own blogs relating to entertainment journalism.

The Me Too movement can trace its roots to entertainment journalism as the centrepiece of it is Harvey Weinstein, a Hollywood mogul who not only produced independent and blockbuster films but has also worked on television and theatre.

Check your progress - 1

NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

Draw a comparison between design of hard and feature news.

_____

_____

_____

.4. food and fashion

Food writing is a type of writing that focuses on food and includes works by food critics and food historians. As a term, “food journalism” is relatively young. When I tell people that I’m working on a study about food journalism, mostly people think about restaurant reviews. And yes, a review can be a great journalistic piece of work. Besides giving information about a restaurant and the food they serve, it can tell about a certain food trend, or about a certain time or society, it can explain a certain feature of food culture or cover an ethnological or a historical story. It can explain a certain cooking method or tell about the people behind the food.

DNA

HEALTH

DIDYOUKNOW?

YOUR PILL CAN MAKE YOU SICK

How to avoid these kill-pills

FRIED FOOD MYTH DEBUNKED

A new study disproves the theory that fried food can cause heart attacks; it also says that olive and sunflower oils are the best

WHAT RESEARCHERS SAY

Book: It harms 10 women for every life it saves and can no longer be justified

Breast cancer screening does more harm than good

Fig. 8.3. A special page on food and health.

Fashion journalism

Fashion journalism is a component of fashion media with a focus on writing and photo journalism. Fashion journalists essentially serve the same purpose as other journalists, but focus specifically on fashion trends and events. Strong contacts in the fashion industry, such as relationships with designers and stylists, are a must. In addition to having inside industry knowledge and a love for fashion, a fashion journalist will need a strong capacity for writing, reporting and narration. In the mass media age, a fashion writer should also be digitally adept and comfortable with modern technology. More and more, publication houses are choosing job candidates who have skills in creating web-based content. A fashion journalist may be employed by a publication or work on a freelance basis.The job of a fashion journalist is to report on the latest fashion trends. A fashion journalist has knowledge of fashion history, stays up to date on industry trends/ forecasting. The majority of journalists' time is spent doing research, fact-checking, and attending events. Fashion journalists are either employed full-time by a publication or they submit articles on a freelance basis.

The impact of the internet on fashion journalism

As society increases its dependence on the internet, the journalism industry is becoming far more fluid. Print, being more costly and less convenient, many publications (such as Nylon magazine) have opted to focus on a digital publication. Digital journalism gives the writer unlimited space (rather than forcing an article to fit in a magazine or newspaper layout), allows for links to external resources, and a number of images. Another major advantage of digital media is real-time updates/ corrections to misinformation.

Major fashion magazines such as Vogue, Elle, Marie Claire, Cosmopolitan, and Paper Magazine have altered their business models due to the onset of the digital age, creating an online component in addition to print. Social media has also contributed to the rise in these digital magazine platforms, allowing them to be far more interactive than they have been in the past.

The internet and social media have made it possible for industry outsiders to view fashion shows without an invitation. Shows for buyers became a source of entertainment, becoming more elaborate and often include an element of performance art or a popular musicians making an appearance. The front row is not only fashion journalists, they are for celebrities and influencers. This invites outsiders acting as citizen journalists to write articles on collections and either self-publish or pitch to larger publications. Since anyone with a computer can sound off about a fashion trend, journalism is becoming an increasingly competitive field as writers try their best to break through the noise

8.5. ENTERTAINMENT

Entertainment journalism is any form of journalism that focuses on popular culture and the entertainment business and its products. Like fashion journalism, entertainment journalism covers industry-specific news while targeting general audiences beyond those working in the industry itself. Common forms include lifestyle, television and film, theatre, music, video games, and celebrity coverage.

8.6. BUSINESS AND CLASSIFIEDS

Classified ads marketplaces are quite simple when it comes to business models. Majority of the classified businesses provide their core services free of cost. Sellers can list their products for free, whereas users can choose and buy those easily. Now, from where does the income come from?

Sponsored Listings or Bounce ads– This depicts the main revenue of a classified ad business. Sellers or businesses can enhance their visibility by paying a certain amount of money. The portal earns their major portion of income through this.

Advertising Opportunities– Another possible option is to take advantage of Google AdSense. One can place Google ads on their platform, they are placed on the home page as well as product pages. For every added new product, it gets a new page. So, eventually, the revenue will improve.

Paid Banner Ads– While allowing the users to post their classified for free, offer an extra option for them to pay and display their product or service as an attractive banner ad.

Pay per View– this is a very genuine and results-focused way of approach. Customers will pay only if their ad gets a view. Thus and so, it incorporates a comparatively low risk as well.

Pay per Lead– this is a more specific and targeted business model. Businesses will earn money only if the ad gets converted to a sale. In other words, a potential customer is the source of revenue.

Affiliate Business Model– Unlike the conventional way of directing customers to other websites using an affiliate link, you can provide your users with an option to sell their products directly on your site. You will soon see yourself earning some serious money through the sales happened.

Merging different models together

Aforementioned are the common stereotype models but you can always experiment, innovate and lead by implementing new and unique ways of thinking. There are several ways to make money when you own a classified marketplace. You can always blend several relevant

monetization options and expand your revenue generation possibilities. However, be aware of your advertiser and user needs.

Classifieds

Advertisements in a newspaper are typically short, as they are charged for by the line or word, and one newspaper column wide.

Publications printing news or other information often have sections of classified advertisements; there are also publications which contain only advertisements. The advertisements are grouped into categories or classes such as "for sale—telephones", "wanted—kitchen appliances", and "services—plumbing", hence the term "classified". Classified ads generally fall into two types: individuals advertising sales of their personal goods, and advertisements by local businesses. Some businesses use classified ads to hire new employees.

One issue with newspaper classified advertising is that it doesn't allow images, even though display ads, which do allow images, can be found in the classified section.

Types of Classified advertisement

Let us now discuss different kinds of classified advertisements that consumers come across. These are:

1. Regular Classified advertisement

They are normal text advertisements and are charged per letter or line or column. They are typically a column wide, have no graphics, and are typeset by the publisher of the print media.

2. Classified Display Advertisement

These types of advertisements also include a logo or a visual image and have a border surrounding the text advertisement. They are typically priced more than the regular classifieds and are charged on per column centimetre or per square centimetre basis.

3. Display classified advertisement

This is the costliest kind of classified advertisement as it has the maximum impact. The minimum size of the advertisements is 3 centimetres and it can be of any size in height and width. Advertisers can also choose to have their display classified ads in colour too.

Types of Classified Advertising

1. Recruitment

Though recruitment advertisements are extremely popular in display advertising, it is equally popular in classified advertisement too. Advertisements under

“Situations Vacant” heading are an apt medium for small and medium-sized businesses to attract job applicants. A spin-off of Situations Vacant is “Situations Wanted” classified ads, where job applicants describe their skills and qualifications.

2. Property

Classified advertisements are one of the most effective advertising methods for sale, purchase or rent of houses or other properties by individual property owners, landlords or even property brokers. However,

we must remember here that advertisements for Real Estate projects do not come under classified advertisements.

3. Obituary

Obituary messages are another common kind of classified advertisements, which allow advertisers to add images of the departed along with a message. Advertisers also used classified advertisements to place condolence messages, funeral invitations, and Remembrances.

4. Matrimonial

This is one of the most common kinds of classified advertisements found in India. Here, parents or a close family member places a text advertisement or a classified display that consisting of an image of the prospective bride or groom and seeks for a prospective match.

5. Business

A lot of small and medium-sized businesses choose classified ads to advertise. Statistics say that 80% of business promotional campaigns choose newspaper advertising as their first choice. Common kinds of business classified advertisements are Business Proposals and offer, Sales promotions and ads seeking Business partners.

6. Announcements

Though Matrimonial advertisements are the leading type of classified advertisement, announcement classified advertisements are a close second. They include personal announcements like Name or Address Change, legal notifications, Lost & Found and marriage notices. Placed by individual advertisers, these are primarily intended for personal or government references.

7. Education

A lot of educational advertisements can also be found under the classified ad section. It is mostly used by coaching centers, who have a small budget, and thus prefer to introduce or promote their coaching classes.

8. Personal

This is the last kind of classified advertisement and includes personal messages such as Birthday wishes, messages about personal achievements, season's greetings and others similar messages. These are placed by individuals in a personal capacity.

Advantages of Classified Advertisements

One of the first advantages of this kind of advertisement is its low cost when compared to other forms of advertising. This low cost might allow small and medium businesses to effectively advertise their products or services while not burning a hole in their pockets.This kind of advertisement has a wide reach. Classified ads placed in newspapers or magazines can be seen by everyone reading them while classified ads placed on online websites will be seen by every website visitor.Since the advertisements are short and simple, they are easy to create and need no rocket science. No need for copywriters to write these!Some Online classified advertisements allows interested consumers to directly contact the advertisers, either by clicking on a link or sending a text or email.

8.7. DESIGNING SPECIAL AND REGULAR SECTIONS

All newspapers run special sections. It's part of our routine. For some, it seems, there's a special section every other week. For others, not so much.

Special sections let us give readers content that differs from the normal flow of news, features, sports, ads and other content in the newspaper.But there are some key elements to remember when dealing with special sections.

1. *Be proactive.* Advertising, news and production departments all need to be part of the creative and planning process for special sections. It's a mistake for the newsroom and production personnel to sit and wait for advertising to come to them with the plan for a special section. Getting involved in the beginning, all departments can come up with a concept that's sure to be more appealing — and a plan to get it done by deadline.
2. *Create a great cover.* A compelling cover is critical to getting readers to check out the special section. If the cover is dull or poorly designed, odds are many readers won't even give it a second glance. You've only got a few seconds to grab their attention…so make sure you do it with something unique and gripping.
3. *Tell what's inside.* If your cover has grabbed your readers…and they turn the page…then let them know what's further inside. The more they know, the more inclined they'll be to go through the section.
4. *Create and use a grid.* To create a uniform, clean look, decide early on a grid for your special section. Three columns? Four? Five? Different grids for some different pages, like calendars and lists? Decide early…and make sure ad sizes will fit into the plan.
5. *Make the best use of type.* This is a place where you can break away from the look of the newspaper…but don't overdo. Find some fonts that work well with the content. And keep the selection limited. Best to stay with one typeface family for text, another for headings and a third for labels and other standing elements.
6. *Give lists a different look.* Are you including a calendar of events? Schedules? Standings? Rosters? Give these a different approach. Try some sans serif, maybe a bit larger than the text. Perhaps cantered…perhaps some even set flush right.
7. *Be consistent.* With good typography and a planned approach to handling photos and other visual elements, you'll have a design that looks organized and polished. Just what you want! The design should flow from page to page and have the same look throughout.
8. *Decide ad size and placement.* Do ads go up the sides? Across the bottom? Both? What sizes are we selling into this section? Are they modular ad sizes? What are the rules…and what are the exceptions? What pages will have limited ads on them? How about the back page? What about the spread? Make these decisions before selling and you'll create a better section.
9. *Give the spread great play.* If you can, keep the centerspread open. It's the one place in a tabloid special section where you can give your designers a larger canvas to work with. Sure, some advertisers may be willing to pay a markup for that space, and if that's the case then they'll get it. But if not, if you can give an open spread to your designers, you'll increase the odds that you'll get something compelling and memorable.
10. *Remember the purpose.* Why are you doing a special section? In most cases, it's to add to your revenue stream. Sure, you want those sections to appeal to readers, and there's content that readers will dive into. But

underlying all the content and all the design is the goal of building your bottom line. And that's always a worthy purpose.

8.8. BOOK DESIGN

Fig. 8.4. Book design.

12 Steps to design a book

Part I
What is Book Design?
There are good reasons to know something about the evolution of the book, the history of typography, and the deep roots that printed books have our cultures.
Book Production and Book Design—Books can be printed and bound in many ways, and understanding practical book production is essential to good book design.
Book construction—Each part of the book has its role to play and its assigned place in the whole. This is a blueprint to book construction.

Part II
Fonts for text—There's no bigger decision a designer makes than selecting the fonts that will be used for the book's text.
Fonts for display—Most books use a combination of two typefaces to create a dynamic and readable interior. Knowing how to choose and combine typefaces is critical for the designer.

Architecture of the book page—When a manuscript is turned into a book, there are many elements that have to come into balance on the page. Building pages and spreads is at the heart of book design.
Non-text book elements—Every book incorporates elements that are outside the text itself, like notes, bibliographies, part- and chapter-opening pages, captions, sidebars, pull-quotes, and others. Each has to blend well with the rest of the book, and stand out when necessary.

Part III
Designing simple books—Putting it all into practice, starting with the simplest books; novels, memoirs, essays, and narrative nonfiction.
Designing nonfiction—Adding structure and hierarchy makes the designer's job more challenging, as does adding more book elements and complexity to your projects.
Designing illustrated books—Book design emerges from the background to play a more visible role in the design of art, photography, and other heavily illustrated books.

Part IV
Cover design basics—It's hard to overestimate the importance of an effective book cover in today's crowded market. Your cover has a lot of work to do, and needs to be put together properly.
Cover design for success—Cover design doesn't stop with the basics, that's where it starts. When you introduce marketing intelligence to your design, you have a winning combination.

The three most important elements of book design
1. *Book Structure:* This includes the front matter and back matter and the body. The front matter is the smallest section of the book, and the pages are usually numbered in Roman numerals. Most of the books are divided into different chapters, while some of them have chapters with sections, as well. The first page of the book, contains initials and special design features. The back matter contains epilogue, in the narrators' voices, afterword, and a conclusion.

2. *The Printed Page:* The layout of the book is carefully designed, with the font style and size, and with single or double spacing. The quality of the page is also important, and the gum is to be carefully considered. Another aspect of the printed page is the gutter, which is bound at the spine. There should be enough space, in the book's spine, so that the text is visible.

3. *The Cover:* The front cover of the book has some images or graphics, along with the title and the author's name. It is the first thing, which makes an impression on the reader's mind, and makes him pick up a book. So, the front cover designing should be carefully done. The back cover contains the biographical content of the author. It also contains some quotes and news sources, who have appreciated the book. The book cover can also contain a brief summary of the book.

These were the three most important elements of book design. Once the content writing is done, and designing is complete, the book publishing

will take place. The publisher should not adopt any shortcuts, when it comes to designing books, as it will have a direct impact on the sales.

Check your progress - 2
NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

Highlight any two nuances of book design.
_____
_____
_____

8.9. LET US SUM UP

Feature sections of the newspapers publish articles on light subjects such as lifestyle, fashion, culture and entertainment. Such feature stories may also appear on the main edition of the newspaper that is for hard news articles. However, feature stories predominantly appear in the supplements that are given with the newspapers. When it comes to design of feature news, it gets creative and colourful employing more white space. It is to match the nature of feature articles that are in-depth and timeless in nature. In other words, the feature news articles are beautifully designed, whereas the hard news stories use the usual (boring?) grid layout that is tight in nature.

8.10. UNIT-END EXERCISES

1. Identify the different sections of a newspaper by reviewing the local edition.
2. Compare and contrast the designs of the main edition and the supplements of a newspaper.
3. Summarise the elements of book design.

8.11. ANSWERS TO CHECK YOUR PROGRESS

1. Draw a comparison between hard and feature news.
Answer: News journalism deals with information of current events or reports of events that have previously occurred. The main purpose of this type of journalism is to inform. Entertainment journalism deals with information of the entertainment industry such as films, television shows, events, music, fashion and video games among others. The main purpose of this type of journalism is to entertain. Journalists can skew facts in a particular matter that cause their story to come across as entertainment. This action can have a profound effect on the consumer, making the authenticity of the report questionable. Cases of this problem can occur in

news articles, magazines, and documentaries. Entertainment has different news values from mainstream news.

2. Highlight any two nuances of book design.
Answer: Book structure includes the front matter and back matter and the body. The front matter is the smallest section of the book, and the pages are usually numbered in Roman numerals. Most of the books are divided into different chapters, while some of them have chapters with sections, as well. The first page of the book, contains initials and special design features. The back matter contains epilogue, in the narrators' voices, afterword, and a conclusion. The front cover of the book has some images or graphics, along with the title and the author's name. It is the first thing, which makes an impression on the reader's mind, and makes him pick up a book. So, the front cover designing should be carefully done.

8.12. SUGGESTED READINGS

- Andrew Haslam. Book Design. Laurence King Publishing, 2006
- Francesco Franchi. Designing News: Changing the World of Editorial Design and Information Graphics. Gestalten, 2013

BLOCK III: DESIGNING AND GRAPHICS

UNIT IX

Chapters

9.1. INTRODUCTION

In this era of internet and information technology, even communication professionals are expected to understand and execute design deliveries. They are expected to be tech-savvy and adept in creating design materials for the campaigns that they may have to plan to promote their brands. Whichever kind of campaign is envisaged in public relations, to build and promote a brand image, several kinds of materials are needed and they need to be eye-catching and well-designed to garner the attention of the target audience. This chapter will focus on newsletter design, design of collateral materials, and design for product and packaging.

9.2. OBJECTIVES

After you complete this unit, you will be able to

- ✓ Understand designing for public relations
- ✓ Create newsletters, letterheads and logos
- ✓ Understand the basics of collateral materials
- ✓ Know the nuances of designing product packaging

9.3. DESIGNING FOR PUBLIC RELATIONS - NEWSLETTERS

Most people don’t realize that design can make or break a PR campaign. They may focus more on the campaign than the visuals, branding, and design aspects that go with it. The goal in Public Relations is to make a brand that is visible, easily accessible for the public, and eye catching. All three of these things go hand in hand with the design of the product or company because that is what the public will see and recognize as part of a

campaign. Here are three tips on how to successfully incorporate good design into PR.

1) Consistency is key!
Consistency in branding makes it easier for the public to recognise a brand and helps them see how extensive a brand can be. When you have the same logo on every website, social media pages, and advertisement, more people will see it and recognize it. This is good because the more exposure a brand has, the more the public will take notice and remember them in the future. What will attract the public eye first when noticing a new company, ad, or campaign is how the company portrays itself.

2) Make your brand accessible.
In Public Relations, you want to make it as easy as possible for people to navigate the company and find what they need to know in a timely matter. Have you ever gone on a website and whatever you do you can't seem to find the page or information you are looking for? This is very frustrating, and it turns people off a brand because it makes the brand seem less trustworthy. When you use a clean crisp design on promotional items, ads, and most importantly your website, people are more likely to spend more time learning about your campaign and company. The more straightforward a company is about their goals and other relevant information, the more likely the public will be to trust the campaign. Accessibility like this is only possible with a strong and consistent design at its core. A messy or confusing website can cause the most important information to become difficult to find.

3) Design can speak louder than words.
Design, especially logo design, can say so much more about a company than just its name. A designer's goal is to translate the campaign and goals of the company into a beautiful system that works in all mediums. The beginning of this is the logo. A good company logo conveys what words cannot: the expansiveness of a company and what the company essentially is. This all can be conveyed by design choices. A sharp clean logo gives the public the impression that the company is serious, trustworthy, and official. In comparison, a logo that is more free-flowing or abstract can appeal to a different category of people. Logos like this are often used for companies that would like to appeal to children or more creative minded adults. Similar to PR, the goal for design is to see the company as a member of the public and to get information across clearly and effectively, in an interesting or intriguing way to draw in customers.

Newsletter design

A newsletter is a printed report containing news (information) of the activities of a business or an organisation that is sent by mail regularly to all its members, customers, employees or people who are interested in. These days, newsletters have also taken an online form: eNewsletters that are sent via email. Print newsletters can be designed in diverse forms, depending on the abilities of the designer. It can take the form of a magazine if the contents of the newsletters are presented in the form of a news story. In such a case, it can carry the elements and complicated designs of a news story such as headline, sub-headline, blurbs,

infographics and quotes, apart from photographs. In other cases, it could feature essays or articles contributed by the people of the organisations without a journalistic background.

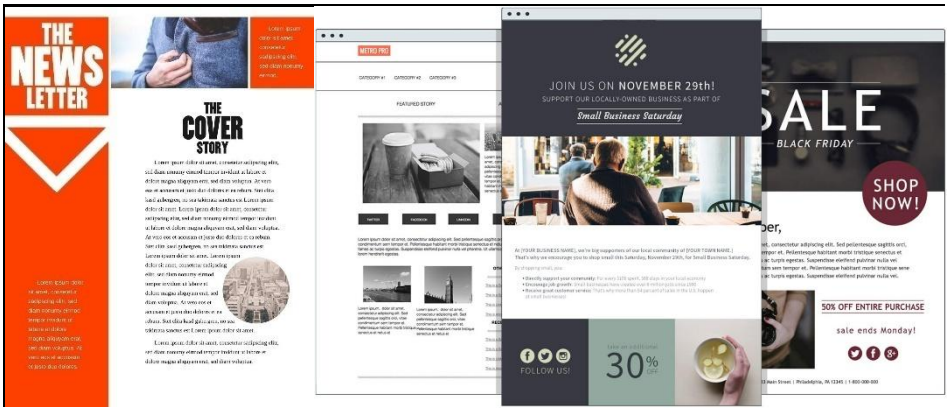

Fig. 9.1. Newsletter designs.

Again, the design of the newsletters can depend on the organisation, newsletters professionals and the target audience. In all the cases, the newsletter may feature a masthead of the newsletter that could be similar to a magazine masthead and the content organised in the pages of the newsletter. If it is an email newsletter, it could again feature a logo or masthead and the content placed in a graphical arrangement with pictures, headlines and a brief. It could also be linked to the full articles on the organisation's website if it is posted online.

Check your progress - 1
NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

Identify the elements of a newsletter

_____

_____

_____

9.4. LETTERHEAD AND LOGO DESIGN

Logo design

A logo is the visual entity signifying an organization, logo design is an important area of graphic design. A logo is the central element of a complex identification system that must be functionally extended to all communications of an organization. Therefore, the design of logos and their incorporation in a visual identity system is one of the most difficult and important areas of graphic design. Logos fall into three classifications. Ideographs, such as Chase Bank, are completely abstract forms; pictographs are iconic, representational designs; logotypes (or wordmarks)

depict the name or company initials. Because logos are meant to represent companies' brands or corporate identities and foster their immediate customer recognition, it is counterproductive to frequently redesign logos.

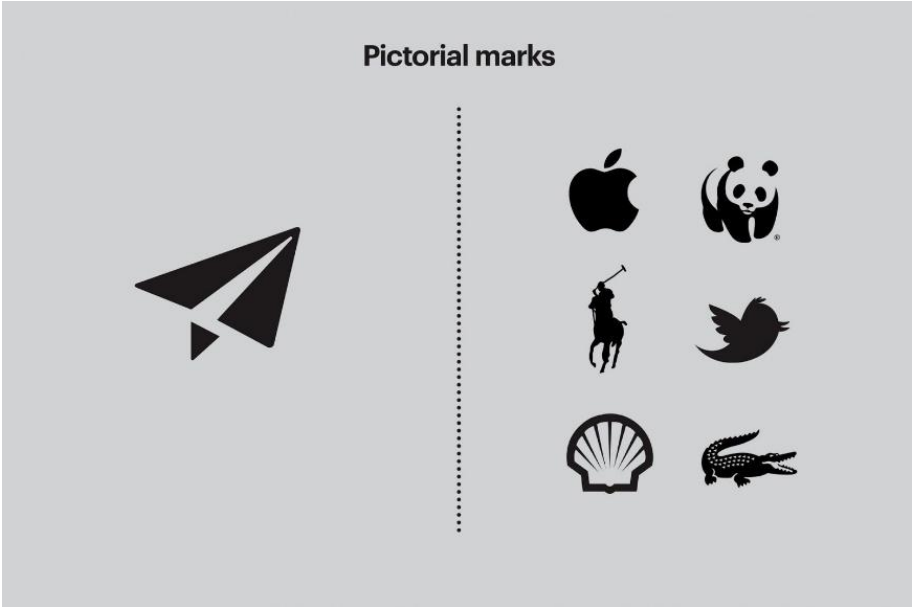

Fig. 9.2. Pictograph logos.

Designing a good logo often requires involvement from a marketing team teaming with the graphic design studio. Before a logo is designed, there must be a clear definition of the concept and values of the brand as well as understanding of the consumer or target group. Broad steps in the logo design process includes research, conceptualization, investigation of alternative candidates, and refinement of a chosen design, testing across products, and finally adoption and production of the chosen mark.

Letterhead

A letterhead, or letter headed paper is the heading at the top of a sheet of letter paper (stationery). That heading usually consists of a name and an address, and a logo or corporate design, and sometimes a background pattern. The term "letterhead" is often used to refer to the whole sheet imprinted with such a heading.

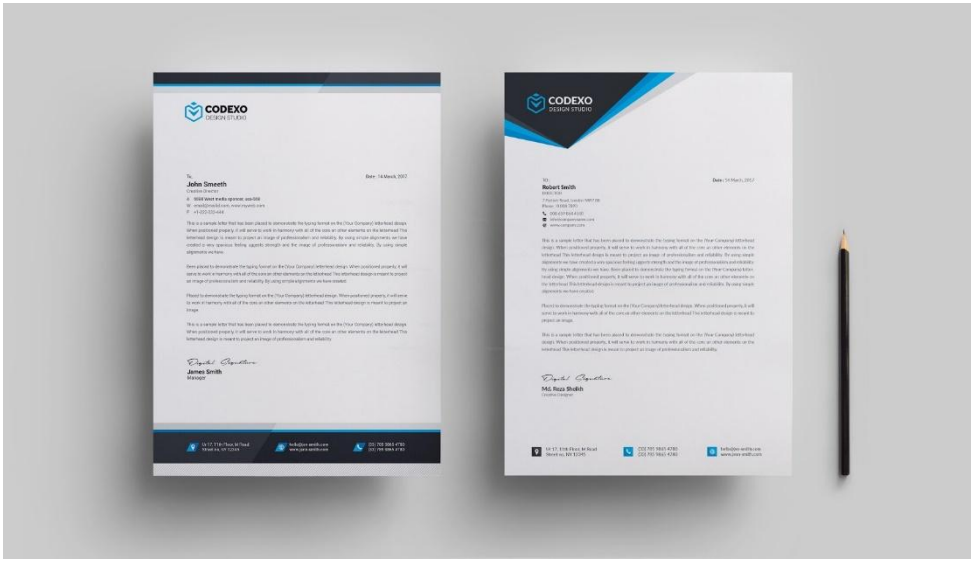

Fig. 9.3. Letterhead designs.

Check your progress - 2

NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

What are the steps involved in logo design.

_____

_____

_____

9.5. IDENTIFY AND COLLATERAL MATERIALS

Fig. 9.4. A collection of collateral material.

In marketing and sales, marketing collateral is sometimes considered the collection of media used to support the sales of a product or service. Historically, the term "Collateral" specifically referred to brochures or sell sheets developed as sales support tools. These sales aids are intended to make the sales effort easier and more effective. The brand of the company usually presents itself by way of its collateral to enhance its brand through a consistent message and other media, and must use a balance of information, promotional content, and entertainment.

The benefit of using a marketing collateral management tool:Many companies will still question the need for developing marketing collateral material when in reality, the answer to that should be very apparent, especially if it applies to a small business. The key benefits of using a marketing collateral management tool include:

- Creates credibility for your business
- Explaining why your product or service is better
- Provides your marketing and sales team with an effective way of explaining the function of your product or service

9.6. PRODUCT AND PACKAGING

Packaging is the science, art and technology of enclosing or protecting products for distribution, storage, sale, and use. Packaging also refers to the process of designing, evaluating, and producing packages. Packaging can be described as a coordinated system of preparing goods for transport, warehousing, logistics, sale, and end use. Packaging contains, protects, preserves, transports, informs, and sells. In many countries it is fully integrated into government, business, and institutional, industrial, and personal use.Package labelling (American English) or labelling (British English) is any written, electronic, or graphic communication on the package or on a separate but associated label.

Fig. 9.5. A sample of product packaging design.

The purposes of packaging and package labels

Packaging and package labelling have several objectives:
Physical protection – The objects enclosed in the package may require protection from, among other things, mechanical shock, vibration, electrostatic discharge, compression, temperature, etc.

Barrier protection – A barrier to oxygen, water vapour, dust, etc.is often required. Permeation is a critical factor in design. Some packages contain desiccants or oxygen absorbers to help extend shelf life. Modified atmospheres or controlled atmospheres are also maintained in some food packages. Keeping the contents clean, fresh, sterile and safe for the duration of the intended shelf life is a primary function. A barrier is also implemented in cases where segregation of two materials prior to end use is required, as in the case of special paints, glues, medical fluids, etc.

Containment or agglomeration – Small objects are typically grouped together in one package for reasons of storage and selling efficiency. For example, a single box of 1000 pencils requires less physical handling than 1000 single pencils. Liquids, powders, and granular materials need containment.

Information transmission – Packages and labels communicate how to use, transport, recycle, or dispose of the package or product. With pharmaceuticals, food, medical, and chemical products, some types of information are required by government legislation. Some packages and labels are also used for track and trace purposes. Most items include their serial and lot numbers on the packaging, and in the case of food products, medicine, and some chemicals the packaging often contains an expiry/best-before date, usually in a shorthand form. Packages may indicate their construction material with a symbol.

Marketing– Packaging and labels can be used by marketers to encourage potential buyers to purchase a product. Package graphic design and physical design have been important and constantly evolving phenomenon for several decades. Marketing communications and graphic design are applied to the surface of the package and often to the point of sale display. Most packaging is designed to reflect the brand's message and identity on the one hand while highlighting the respective product concept on the other hand.

Security – Packaging can play an important role in reducing the security risks of shipment. Packages can be made with improved tamper resistance to deter manipulation and they can also have tamper-evident features indicating that tampering has taken place. Packages can be engineered to help reduce the risks of package pilferage or the theft and resale of products: Some package constructions are more resistant to pilferage than other types, and some have pilfer-indicating seals. Counterfeit consumer goods, unauthorized sales (diversion), material substitution and tampering can all be minimized or prevented with such anti-counterfeiting technologies. Packages may include authentication seals and use security printing to help indicate that the package and contents are not counterfeit. Packages also can include anti-theft devices such as dye-packs, RFID tags,

or electronic article surveillance tags that can be activated or detected by devices at exit points and require specialized tools to deactivate. Using packaging in this way is a means of retail loss prevention.

Convenience – Packages can have features that add convenience in distribution, handling, stacking, display, sale, opening, reclosing, using, dispensing, reusing, recycling, and ease of disposal

Portion control – Single serving or single dosage packaging has a precise amount of contents to control usage. Bulk commodities (such as salt) can be divided into packages that are a more suitable size for individual households. It also aids the control of inventory: selling sealed one-litre bottles of milk, rather than having people bring their own bottles to fill themselves.

Branding/Positioning – Packaging and labels are increasingly used to go beyond marketing to brand positioning, with the materials used and design chosen key to the storytelling element of brand development. Due to the increasingly fragmented media landscape in the digital age this aspect of packaging is of growing importance.

9.7. LET US SUM UP

Designing a newsletter is similar to that of a magazine, featuring content in the form of news articles replete with headlines, sub-headline and photographs. It also carries a masthead similar to that of a news magazine. If it is an email newsletter, it takes a different form. Thanks to technology, there are several online tools for creation of e-newsletters with templates that can be edited. Designing a logo is another skill altogether. It needs projecting an idea through a simple graphic that is logo. Logo needs to sport simplicity in its design and clarity in its idea. Logo design is intentionally made simple to serve two purposes: for easy remembrance and recollection; and to aid printing it on small (such as a pen) to big things (such as a hoarding). Finally, lessons were also on designing for collateral materials and product packaging. Though designing for product packaging is a highly-creative exercise as it has to be eye-catching, it is also an arrangement of all essential information in the space of the product package.

9.8. UNIT-END EXERCISES

4. Analyse the logos of top brands. Appreciate their simplicity and attempt to identify that they highlight through their simple designs.

9.9. ANSWERS TO CHECK YOUR PROGRESS

1. Identify the elements of a newsletter.
Answer: Again, the design of the newsletters can depend on the organisation, newsletters professionals and the target audience. In all the cases, the newsletter may feature a masthead of the newsletter that could be similar to a magazine masthead and the content organised in the pages of

the newsletter. If it is an email newsletter, it could again feature a logo or masthead and the content placed in a graphical arrangement with pictures, headlines and a brief. It could also be linked to the full articles on the organisation's website if it is posted online.

5. What are the steps involved in logo design.
Answer: Broad steps in the logo design process includes research, conceptualization, investigation of alternative candidates, and refinement of a chosen design, testing across products, and finally adoption and production of the chosen mark.
.

9.10. SUGGESTED READINGS

- Oxide Design Co. Letterhead and Logo Design, Vol. 12. Rockport Publishers, 2011.
- Edward A. Hamilton. Newsletter Design: A Step-by-Step Guide to Creative Publications. John Wiley & Sons, 1995

NOTES

UNIT X

Chapters

10.1. INTRODUCTION

This unit will deal with topics such as branding, business correspondence, brand promotion, advertising and poster design. Each of these subjects demand the use of design. Not just simple design but the expertise and creativity of professionals. Though reaching such levels of becoming a design specialist would require years of dedication and experience, understanding its nuances and basics is important even if you do not intend to become a designer. As discussed earlier, one needs to be a Jack of all trades to survive in this connected world. Even if you become a journalistic writer or political campaigner, you need to understand design to promote yourself or your organisation.

10.2. OBJECTIVES

After you complete this unit, you will be able to

- ✓ Understand the techniques of branding
- ✓ Know the basics of business correspondence material
- ✓ Understand the nuances of advertising and promotional material

10.3. HOSPITALITY MATERIALS & BRANDING

Hospitality material

Even as an ordinary user of computer, you will have to at some point of time create simple designs for hospitality material such as sign boards or informational notices. You can use a wide array of software from the simple MS Word to Adobe Photoshop. It could be the simple arrangement of information in the form of text and images. It can also sometimes get creative if it is a standee for say, an event, or the sign board of an office.

Fig. 10.1. Name board and standee (below).

Fig. 10.2. A sign board.

Branding

Branding is the marketing practice of actively shaping your brand. That's the basic definition, but there is so much more that goes into it.

Branding is what your business needs to break through the clutter and grab your ideal customer's attention. It's what transforms first-time buyers into lifetime customers and turns an indifferent audience into brand evangelists. It's what you need to stand out, make an impact and take your business to the next level.In other words, if you want your business to succeed, branding is non-negotiable.But why, exactly, is branding so important? What does it entail? And how do you brand your business in a way that's going to have a real impact on your audience? In this article, we're going to explore what branding is and how your business can reap its benefits in the most effective way.

What does branding mean?

Branding has been around since 350 A.D and is derived from the word "Brandr", meaning "to burn" in Ancient Norse language. By the 1500s, it had come to mean the mark that ranchers burned on cattle to signify ownership—a precursor of the modern logo.Yet branding today is so much more than just a look or a logo. It has come to signify the emotional "gut feeling" reaction a company can elicit from its customers.Your brand is the set of perceptions people have about your company. But branding is the set of actions you take to cultivate that brand.

In other words, your brand is a noun, but branding is a verb. When you design a logo, that's branding. When you develop your brand voice, that's branding. When you get together with your marketing team to brainstorm an ad campaign, that's branding.

Any action you take to shape your brand is, in a nutshell, branding.
Why is branding so important?
*Branding is important because it:*Helps you stand out from the competition. It doesn't matter what kind of company you have, what industry you're in, or what type of customer you're after—if you're in business, you've got some serious competition. Branding helps you establish the ways in which you're different, special, and unique. And it shows your customers why they should work with you instead of your competitors.

Builds brand recognition. If you want to build a successful brand, you need to be recognizable. The right branding (including designing an impactful logo, website, and other brand assets) helps you carve out a distinct style, and it increases your brand recognition in the market.Creates a consistent brand experience for your customers. In order for your business to succeed, you need to provide a consistent experience for your customers however they interact with your brand—whether that's through your website, at an in-person event or by following your social media accounts.

Branding allows you to control how people perceive and experience your brand—and you can ensure that perception and experience stays consistent across all your brand touchstones.Sparks a connection with your audience and turns that audience into loyal customers. The most successful businesses are the ones that foster an emotional connection with their audience. That emotional connection is what transforms a prospect into a customer and a customer into a brand enthusiast. And how do you create and build that connection? Branding. Different branding strategies (like packing an emotional punch with your brand voice or leveraging colour psychology when designing your logo) can help you connect with your audience on a deeper level and create a sense of loyalty to your brand.

Elements of branding?
These are the elements of branding that you'll need to create in order to cultivate how your business is perceived by customers:
Mission statement and brand values. Your mission statement and brand values are the foundation for your branding. Think of your mission as the brains of the operation—a short and succinct statement that defines the present state and purpose of your organization. Meanwhile, your company's vision is its heart, providing an inspirational and motivational snapshot of what you seek to achieve in the long term.

Brand guidelines. With the mission and vision statement set as the pillars of your organization, your brand strategy comes to encompass everything in between. This will take the form of brand guidelines (also known as your "brand bible"). These guidelines are comprised into a tangible document that will reflect and support your business goals, differentiate you from competitors, resonate with customers, provide a template for decision-making and precipitate ideas for future marketing campaigns. It

will also include all the stylistic elements of your branding, including your colour palette, fonts, and an outline of your brand voice.

Logo. Your logo is the face of your company and designing it is arguably the single most important branding you'll do for your business. During the design process, think about who you are as a brand and how you want to be perceived by your customers. Use that to drive your design strategy.

Website. Designing your website is also a key branding step. Your website is your brand's digital real estate and when your customers visit, it should be visually engaging, easy to use, and most important of all a reflection of who you are as a brand. Similar to your logo, refer to your brand guide to choose your web design elements (like layout and fonts).

Additional assets. There's no one-size-fits-all approach to branding. Based on your business and industry, you might need additional assets like business cards, product packaging or event flyers. Assess your business and your unique needs, and then develop additional branding assets accordingly.

10.4. BUSINESS CORRESPONDENCE MATERIAL

Business Correspondence

Just as we express our views, opinions, thoughts, and ideas through writing. Business people also feel the need of expressing themselves. It is not always possible for them to remember each and every detail in the business.They use the simplest way of expressing i.e., written correspondence. A written correspondence in the business world is the business correspondence.

Meaning of Business Correspondence

Any communication in the form of the letter is correspondence. Any person related to a business expresses oneself through business correspondence. One can also ask any doubt or uncertainty through business correspondence.A businessman writes and receives letters in his day to day life. A correspondence between two organisations or within an organisation comes under this category. A letter to a supplier, complaint letters, letter of inquiry, job application letters are some of its examples.

Importance of Business Correspondence

A business correspondence has numbers of importance. Its most important feature is the ease of reaching and communicating with different parties. It is not always possible to meet people face to face.A business correspondence helps to meet organizational goals. One can achieve the objectives through it. Let us study some of them in detail.

1. Maintaining a Proper Relationship

It is not always possible for any business or organization to reach to any person in particular. This will cost any business. Here, the business correspondence will be a rescue for any business.It helps in maintaining the proper relationships between the parties. Business correspondence

strengthens the business. It also helps in the internal communication. It makes communication within the organization more clear and precise.

2. Serves as Evidence
Any written form of communication serves as evidence. A business correspondence helps the person in a business to keep a record of all the facts. These written records will serve as evidence.

3. Create and Maintain Goodwill
It helps in creating and maintaining goodwill between a business and a customer. Any letter to enquire, complaint, suggestion or feedback helps a company to grow and maintain goodwill.

4. Inexpensive and Convenient
It is a cheap and convenient form of business communication.

5. Formal Communication
A business communication serves as a formal communication between two persons. It may be a seller and a buyer. It can be between an employee and the employer. The language used is formal and logical.

It helps in removing the ambiguity and the doubts of the person involved in the business. The formal communication in business is followed and acceptable.

6. Helps in the Expansion of Business
A business correspondence helps a business to achieve the set goal. It also ensures the expansion of a business. With no waste of time and proper utilization of manpower and resources, a business can expand.

Any information regarding some resources or any product or market can be easily done. Even the news of the expansion of business can be spread by it.

Types of Business Correspondence
A correspondence is of many types. Let us get ourselves familiar with some of them.

1. Internal Correspondence
It refers to the correspondence between the individuals, departments, or branches of the same organization.

2. External Correspondence
It refers to the correspondence between two individuals. These are not of the same organization. Any correspondence outside the organization is external correspondence. Customer and suppliers, banks, educational institutions, government departments come under this category.

3. Routine Correspondence

It refers to the correspondence on routine manners. A correspondence made for inquiries, orders, replies, acknowledgments, invitation, and appointment letters are routine correspondence.

4. Sales Correspondence

It refers to the correspondence related to the sale. Sales letters, sales reports, invoice, and confirmation of orders are sale correspondence. Delivery letters, statement of accounts etc. are also some of its examples.

5. Personalized Correspondence

It refers to the correspondence based on emotional factors. Letters of the request, recommendation, and congratulations are personalized correspondence. Letter of introduction, granting and the refusal of terms are some of its examples.

6. Circulars

It refers to the communication of common matter to a large number of persons or firms. Circulars, notices of tenders, change of address, an opening of the new branch come under this category. An introduction of new products is also its example.

10.5. PROMOTIONAL MATERIAL, ADVERTISING DESIGN, POSTER DESIGN

Promotional material

Businesses of all sizes and in all industries use promotional materials to increase sales and attract customers. Promotional materials are used to make a business stand out from its competitors and to engage the target audience. While promo materials can come in a variety of mediums, they usually contain the business logo and can be directly linked to sales of the product or service. Both new and existing customers benefit from promotional marketing. New customers get an incentive to try a product or service they have not bought before, while existing customers build brand loyalty by utilizing a promotional offer.Promotional materials are a part of the larger marketing strategy of a business. Organizations can utilize many different marketing vehicles in addition to promotional materials to meet their business goals. The marketing mix, as it’s often referred to, consists of different elements such as print and online advertising, public relations, direct mail, social media, events, sponsorship and personal selling.

Promotional materials can fit into any one of the marketing mix mediums. For example, if a business is offering a dollar-off coupon to their customers, they may tell their customers about this promotion through an advertising campaign. Similarly, they may post about this incentive through their social media channels and may mention it during one-on-one sales calls. When it comes to promotional merchandise, businesses often hand out the merchandise at sponsorship events, conferences and trade shows. They can also be mailed out through a direct mail campaign.Hence, promotional materials and merchandise work in harmony with the other elements of a marketing campaign. By utilizing different aspects of the marketing mix together, small businesses can reach their sales goals more effectively.

Understanding the different types of promo materials

There are a number of different types of promotional materials, ranging from print or online coupons to mugs and notebooks. Print collateral, such as flyers, posters, postcards and brochures, is one kind of promotional product that small businesses use to attract new customers. These low-cost items are a great way to provide information about your company to customers with whom you speak in person. This is also a great way to help your potential customers remember how they can contact you and what they can purchase from you. Many small businesses that attend trade shows or industry events bring print collateral with them to hand out to their prospects.

For example, if a small business specializes in creating handcrafted baby toys, they may create promo materials like business cards and flyers that include their company name and logo, key differentiators about their products and contact information. These promotional materials can also include information on how the customer can purchase their toys.

Another kind of promotional material is coupons. This is a common way to incentivize customers to make a purchase and is used by both big and small businesses. Coupons can be sent online through direct email marketing or online newsletters. They can also be available on an e-commerce website at checkout. Coupons can be sent to customers in print through snail mail as well. Another way to distribute print coupons is in person through your retail location or at industry events. Promotional coupons can offer a percentage or dollar amount off the price of a product or service or offer a deal such as "buy one, get one free."In the case of the small business that makes handcrafted baby toys, they may attract their existing customers through their email marketing efforts by offering a 25 percent off coupon digitally. In order to attract new customers, they can develop a promotion where an existing customer receives an additional discount if he forwards the coupon to a friend. Another strategy for attracting new business with coupons is to place print coupons in high-traffic areas where their prospects are located. In this case, the small business can create a partnership with a local day-care to place a stack of coupons in the lobby, where parents of babies and young children will undoubtedly see them.

Marketing swag, often referred to as tchotchkes, is one of the most common kinds of promotional products businesses use to incentivize customers. Promotional merchandise contains the logo of the company and is given out for free to prospects and customers as part of marketing communications campaigns. Swag is handed out in person at industry events, trade shows, conferences, customer meetings and anywhere there is in-person interaction between the business and its customers and prospects.

This promotional merchandise can range from small items, such as pens, USB keys and notepads, to larger products such as sweatshirts and hats. Companies are now also utilizing mobile apps in their promotional materials and bringing the swag experience online.

The goal of this movement is to increase the opportunities to engage with their customers and prospects. Through a mobile app extension, for example, businesses can gain new ways to learn about their customers and offer further promotions in return. An example of a promotional product that includes an app is a smart Bluetooth finder that

helps customers keep track of their important items, such as their phone and their keys.

Not only is this app useful, it's also a great way for the business to continue to stay top-of-mind with the customer.While not all small businesses will be able to develop an app as part of a promotional giveaway, they can certainly utilize promotional products in other ways. In the case of the small business that makes handcrafted baby toys, they may choose to develop a reusable tote bag with their logo on it. They can then use it for the customers' purchases and give it to them for free as a thank you. In addition, they can use the tote bag as a giveaway at trade shows. The tote bag is something their customers or prospects may use on a regular basis, which will help to make that business memorable.

Benefits of Promotional Merchandise

Promo materials have many benefits. One of the major ones is cost, which resonates with many small businesses. Promotional merchandise is generally lower cost than other forms of marketing, such as print and online advertising. While it can cost tens of thousands of dollars to create an advertising campaign, printing promotional materials often only costs a small fraction of that amount. Many organizations also purchase promo products in bulk and use it throughout several marketing campaigns to save on development costs.Promotional merchandise helps make the company or product memorable. Studies have shown that organizations that use promotional items have a better chance of being remembered by their customers. It’s a great way to increase brand awareness and get people to see your company name and logo. In addition, if the promotional product your business is offering is useful for your customers, they are likely to see your company name and logo multiple times.Unlike some forms of marketing, promotional products can often be directly linked to sales. Coupons, for example, are a great way to see the return on your promotional campaign investment because they are directly tied to sales. By printing your company name and logo on promotional swag, you provide your prospects and customers with inspiration to reach out to you. If the prospects of the small business that makes handcrafted baby toys received one of their branded tote bags at a trade show, they may be more likely to buy a toy from that company simply because they are now more familiar with them.

Advertising design

Advertising is a marketing communication that employs an openly sponsored, non-personal message to promote or sell a product, service or idea. Sponsors of advertising are typically businesses wishing to promote their products or services. Advertising is differentiated from public relations in that an advertiser pays for and has control over the message. It differs from personal selling in that the message is non-personal, i.e., not directed to a particular individual. Advertising is communicated through various mass media, including traditional media such as newspapers, magazines, television, radio, outdoor advertising or direct mail; and new media such as search results, blogs, social media, websites or text messages. The actual presentation of the message in a medium is referred to as an advertisement, or "ad" or advert for short.

Commercial ads often seek to generate increased consumption of their products or services through "branding", which associates a product name or image with certain qualities in the minds of consumers. On the other hand, ads that intend to elicit an immediate sale are known as direct-response advertising. Non-commercial entities that advertise more than consumer products or services include political parties, interest groups, religious organizations and governmental agencies. Non-profit organizations may use free modes of persuasion, such as a public service announcement. Advertising may also help to reassure employees or shareholders that a company is viable or successful.

How to make an advertisement?

Here are the most important steps you need to undertake:

- The SWOT analysis of the product and the company
- Set up your main objectives
- Research the market, the competition, your audience
- Identify your target audience
- Select your channels
- Brainstorm for fresh ideas
- The design process
- Deliver your advertisements
- Quantifying and analysing the results

1. The SWOT analysis of the product and the company

Before analysing how to create an advertisement that converts into great results, you should start by performing a thorough analysis of the strengths, weaknesses, opportunities, and threats for both, the company and the product that is to be advertised.In short, it is a SWOT analysis.

2. Set up your main objectives

What is the purpose of your advertising campaign? What are your main objectives? Are your goals feasible or not? You should also perform an analysis of these questions and answer them with the utmost sincerity.Based on what you set up here, you can go to the next step and start your research.

3. Research the market, the competition, your audience

You cannot consider yourself ready to make an advertisement without conducting a proper research on some important factors you campaign depends on. For instance, it’s important to know the market and its behaviour. Study how things have changed over the past few months and what professionals are predicting for the near future as well.Know your position on the market, the competitors’ role and positions as well. Find out how they advertise their products and try not to copy their campaigns. Instead, you will need to come up with something new, something out of the box, something that will make your audience convert into clients. In order to accomplish that however, you will also need to know some things about the typology and the personality of your ideal client. Know to whom you are addressing your advertisements too. What devices are they using? What is their social status? What are their online behaviours and how do they shop?

4. Identify your target audience

Who is more likely to buy your products or services? Responding to this question is yet another important step in setting up your advertising campaign. Should you want to be successful at designing an appealing advertisement, you need to know to whom you are addressing it.

For example, if you are selling clothing for babies, it's quite obvious that your target audience is parents and maybe grandparents. You don't have to do anything with teenagers, kids or single people. The design and copy text will, therefore, be appealing to the selected demographic groups. If you also consider influencer advertising it will definitely help you choose your influencer.Of course, based on your industry and your niche, there may be other important questions to answer here such as:

- To what demographics group am I addressing my messages?
- What is my clients' social status?
- Are they young and unemployed?
- Are they professionals from a specific niche?
- Are they old or not?
- What's the level of their education?
- Where do they live?
- What is their relationship with the competition?
-

The list of questions could go on forever.

What's important here is to identify which one of them – or maybe more – suits your goals and answer them with honesty and objectivity.Once you do this, you can move further to the next step.

5. Select your channels

Based on your demographic research, however, you will be able to narrow your search to some specific channels of media distribution suitable for your campaign. For instance, if you are targeting people who are known to spend a lot of time on social media, you should channel your efforts in designing suitable ads for social media and of course, select the most appropriate channels of these sorts. Focus on them. For instance, if you want to advertise on Facebook or Instagram, there's no need to study the ad placements requirements and methods on Twitter. At the same time, you can advertise on websites and blogs as well. In this case, you need to analyze at least a few advertising platforms and select the one that manages to meet all your needs in terms of placements, costs, and network.

6. Brainstorm for fresh ideas

Take all the information you manage to gather up to this step regarding your products and your targeted audience.Think also about the delivery channel you have chosen for your advertisements. Based on your findings, you can now start brainstorming for fresh and creative new ideas for your campaign.

Write down some words, phrases, ideas. Combine them and do not stop until you come up with at least a dozen of possible calls to action, copy texts and visual representations of how your banners, flyers or videos should look like.

7. The design process

Obviously, this is the hardest part of the entire advertisement creation process. Everything you did until now, each other previous steps, prepared you for this one. Now, it's time to put your creativity to work and actually design your banners, flyers or brochures. Take the top three or five ideas from your previous sketches and use them to create raw advertisements.

8. Deliver your advertisements

Once the designs are ready to be delivered online, based on your selected delivery channels, you can start your campaign.At this point, you need to define your budget and select the criteria on which you are going to publish your banners on each channel in particular. Each advertising platform (or social media platform that includes paid advertising) will let you select your own parameters of delivery, based on demographics, age groups, types of websites, industries, countries, and regions. You have already identified your target audience at the fourth step of this guide. Now, you need to apply that information according to the specifications of each selected channel.

9. Quantifying and analysing the results

This is also an important step in your campaign, maybe the most important of all.After your campaign has ended, you need to start analysing how your audience reacted to your banners and whether or not the entire process was a successful one. This data is also important for your future campaigns. You will start your future design processes based on your initial results and try to improve them.

Poster design

A poster is a temporary promotion of an idea, product, or event put up in a public space for mass consumption. Typically, posters include both textual and graphic elements, although a poster may be either wholly graphical or wholly text. Posters are designed to be both eye-catching and informative. Posters may be used for many purposes. They are a frequent tool of advertisers (particularly of events, musicians, and films), propagandists, protestors, and other groups trying to communicate a message. Posters are also used for reproductions of artwork, particularly famous works, and are generally low-cost compared to the original artwork. The modern poster, as we know it, however, dates back to the 1840s and 1850s when the printing industry perfected colour lithography and made mass production possible.

Steps to design a poster

Step 1: Get the right size

Posters are large print documents designed to grab attention. A few standard poster sizes are 11" × 17", 16" × 20", 18" × 24", and 24" × 36". You have flexibility in choosing the size of your poster, depending on whether it will be on a corner lightpost, the break room, or a school bulletin board. All of the poster templates in Lucidpress are set to 18" × 24".

Step 2: Design your poster layout

Your audience needs to take in the message of your poster at a glance. Choose your alignment—left, centered, right, or justified—and apply it to your headers, photos, text, and shapes. Unify the elements of your poster

by aligning objects and text. This will make the poster feel coherent. Text is often centered, creating a sense of symmetry.

Step 3: Choose your graphics

Photographs and other graphics can visually communicate a message in ways that words can't. Have a balance between text and images that complement and relate to each other. With larger posters you will want to make sure you have the highest-resolution version of the photo possible. Don't upload low resolution files of photos, otherwise your printed poster won't look its best. Use photos which have been saved at a minimum of 300 pixels per inch at poster size for printing.

Step 4: Use colour in your poster

Posters are designed to grab attention. A good eye for colour can direct your audience to the core parts of your message. Choose colours that complement your photographs and your message. For example, if you are advertising a farmers' market, the colour green can evoke freshness and nature. A poster can make a big impact even with a limited colour palette—too many colours can distract from your message. Black and white posters provide good legibility for simple posters. There are several tools online to help you choose a colour scheme, including Adobe's Kuler.

Step 5: Include text into your poster

Keep your headers and titles simple. Use a larger font size for headers, which helps you determine the first thing your audience sees. Grab your audience's attention with contrasts in font sizes, style, and colour. If using multiple font faces, choose ones that are different enough to look deliberate. As a rule of thumb, don't use more than two font faces in a document. Use font weight (bold) to differentiate sections of text. The use of ALL CAPS and italics also draw attention to particular points of a message. Keep text limited to your core message so your audience knows What, Where, and When.

Check your progress - 1

NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

What are the steps involved in advertising?

Is identifying target audience important for advertising?

_____

_____

_____

10.6. LET US SUM UP

To sum this unit up, let us list the topics discussed: Hospitality materials and branding, business correspondence material, promotional material,

advertising design and poster design. While simple business correspondence and hospitality material do not need an expert designer for creation, advertising and promotion need the skilled creative professional for design. Branding is what your business needs to break through the clutter and grab your ideal customer's attention. It's what transforms first-time buyers into lifetime customers and turns an indifferent audience into brand evangelists. It's what you need to stand out, make an impact and take your business to the next level. In other words, if you want your business to succeed, branding is non-negotiable. Any communication in the form of the letter is correspondence. Any person related to a business expresses oneself through business correspondence. One can also ask any doubt or uncertainty through business correspondence. A businessman writes and receives letters in his day to day life. A correspondence between two organizations or within an organization comes under this category. A letter to a supplier, complaint letters, letter of inquiry, job application letters are some of its examples. There are a number of different types of promotional materials, ranging from print or online coupons to mugs and notebooks. Print collateral, such as flyers, posters, postcards and brochures, is one kind of promotional product that small businesses use to attract new customers. These low-cost items are a great way to provide information about your company to customers with whom you speak in person. This is also a great way to help your potential customers remember how they can contact you and what they can purchase from you. Many small businesses that attend trade shows or industry events bring print collateral with them to hand out to their prospects. Advertising is a marketing communication that employs an openly sponsored, non-personal message to promote or sell a product, service or idea. Sponsors of advertising are typically businesses wishing to promote their products or services. Advertising is differentiated from public relations in that an advertiser pays for and has control over the message.

10.7. UNIT-END EXERCISES

1. Elaborate on the steps of designing a poster.
2. Why is branding so important?

10.8. ANSWERS TO CHECK YOUR PROGRESS

1. What are the steps involved in advertising?
Answer:The SWOT analysis of the product and the company
Set up your main objectives
Research the market, the competition, your audience
Identify your target audience
Select your channels
Brainstorm for fresh ideas
The design process
Deliver your advertisements
Quantifying and analysing the results

2.Is identifying target audience important for advertising?
Answer:Who is more likely to buy your products or services?
Responding to this question is yet another important step in setting up your

advertising campaign. Should you want to be successful at designing an appealing advertisement, you need to know to whom you are addressing it. For example, if you are selling clothing for babies, it's quite obvious that your target audience is parents and maybe grandparents. You don't have to do anything with teenagers, kids or single people. The design and copy text will, therefore, be appealing to the selected demographic groups. If you also consider influencer advertising it will definitely help you choose your influencer.

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UNITXI

Chapters

11.1. INTRODUCTION

This unit will give a brief about the various devices that can be connected to a CPU for input and output of instruction and that will aid graphic design. Moving much beyond the usual keyboard and mouse, after the turn of the century, several devices such as the Wacom Cintiq graphic input tablet have gained popularity. This unit will present an overview of such available devices and elaborate on their usage.

11.2. OBJECTIVES

After you complete this unit, you will be able to

- ✓ Know the available input-output devices available to the graphic artist
- ✓ What their usage and advantages are

11.3. GRAPHIC INPUT-OUTPUT DEVICES

Graphics input-output devices

These are some of the important input devices which are used in a computer:

- Keyboard
- Mouse
- Joystick
- Light pen
- Track Ball
- Scanner
- Graphic Tablet
- Microphone
- Magnetic Ink Card Reader(MICR)
- Optical Character Reader(OCR)
- Barcode Reader
- Optical Mark Reader(OMR)
- Camera

Keyboard. Keyboard is the most common and very popular input device which helps to input data to the computer. The layout of the keyboard is like that of traditional typewriter, although there are some additional keys provided for performing additional functions. Keyboards are of two sizes 84 keys or 101/102 keys, but now keyboards with 104 keys or 108 keys are also available for Windows and Internet.

Fig. 11. 1. Keyboard and mouse for gaming.

The keys on the keyboard are as follows:

S.No.	Keys & Description
1	Typing keys: These keys include the letter keys (A-Z) and digit keys (09) which generally give the same layout as that of typewriters.
2	Numeric keypad: It is used to enter numeric data or cursor movement. Generally, it consists of a set of 17 keys that are laid out in the same configuration used by most adding machines and calculators.
3	Function keys: The twelve function keys are present on the keyboard which are arranged in a row at the top of the keyboard. Each function key has a unique meaning and is used for some specific purpose.
4	Control keys: These keys provide cursor and screen control. It includes four directional arrow keys. Control keys also include Home, End, Insert, Delete, Page Up, Page Down, Control(Ctrl), Alternate(Alt), Escape(Esc).
5	Special Purpose keys: Keyboard also contains some special purpose keys such as Enter, Shift, Caps Lock, Numb Lock, Space bar, Tab, and Print Screen.

Mouse. It is the most popular pointing device. It is a famous cursor-control device having a small palm size box with a ball at its base, which senses the movement of the mouse and sends corresponding signals to the CPU

when the mouse buttons are pressed. Generally, it has two buttons called the left and the right button and a wheel is present between the buttons. A mouse can be used to control the position of the cursor on the screen.

Joystick. It is a pointing deviceused to move the cursor position on screen. It is a stick with a ball at its both lower and upper ends. The lower spherical ball moves in a socket. The joystick can be moved in all four directions. The function of the joystick is similar to that of a mouse. It is mainly used in Computer Aided Designing (CAD) and for playing computer games.

Fig. 11. 2. A typical joystick.

Light Pen. It is a pointing device similar to a pen. It is used to select a displayed menu item or draw pictures on the monitor screen. It consists of a photocell and an optical system placed in a small tube.

Fig. 11. 3. Light pen to directly write on screen.

When the tip of a light pen is moved over the monitor screen and the pen button is pressed, its photocell sensing element detects the screen location and sends the corresponding signal to the CPU.

Track Ball. It is an input device that is mostly used in notebook or laptop computer, instead of a mouse. This is a ball which is half inserted and by moving fingers on the ball, the pointer can be moved.

Fig. 11. 4. Track ball.

Since the device is not moved, a trackball requires less space than a mouse. A track ball comes in various shapes like a ball, a button, or a square.

Scanner. It is an input device and works like a photocopy machine. It is used when some information is available on paper and it is to be transferred to the hard disk of the computer for further manipulation. Scanner captures images from the source which are then converted into a digital form that can be stored on the disk. These images can be edited before they are printed.

Fig. 11. 5. A computer scanner.

Digitiser. It is an input device which converts analogue information into digital form. Digitiser can convert a signal from the television or camera into a series of numbers that could be stored in a computer. They can be used by the computer to create a picture of whatever the camera had been pointed at.

Fig. 11. 6. Graphic tablet or digitiser.

Graphics tablet. It is a device on which sketches can be made using a pen. It is used for fine works of drawing and image manipulation applications. A graphics tablet (also known as a digitizer, drawing tablet, drawing pad, digital drawing tablet, pen tablet, or digital art board) is a computer input device that enables a user to hand-draw images, animations and graphics, with a special pen-like stylus, similar to the way a person draws images with a pencil and paper. These tablets may also be used to capture data or handwritten signatures. It can also be used to trace an image from a piece of paper which is taped or otherwise secured to the tablet surface.

Capturing data in this way, by tracing or entering the corners of linear poly-lines or shapes is called digitizing. The device consists of a flat

surface upon which the user may "draw" or trace an image using the attached stylus, a pen-like drawing apparatus. The image is displayed on the computer monitor, though some graphic tablets now also incorporate an LCD screen for a more realistic or natural experience and usability. Some tablets are intended as a replacement for the computer mouse as the primary pointing and navigation device for desktop computers.

Microphone. Microphone is an input device to input sound that is then stored in a digital form.The microphone is used for various applications such as adding sound to a multimedia presentation or for mixing music.

Magnetic Ink Card Reader (MICR). MICR input device is generally used in banks as there are a large number of cheques to be processed every day.

The bank's code number and cheque number are printed on the cheque with a special type of ink that contains particles of magnetic material that are machine readable.This reading process is called Magnetic Ink Character Recognition (MICR). It is fast and less error prone.

Fig. 11. 7. Magnetic Ink Card Reader (MICR).

*Optical Character Reader (OCR).*It is an input device used to read a printed text.OCR scans the text optically, character by character, converts them into a machine readable code, and stores the text on the system memory.

Fig. 11. 8. Optical Character Reader (OCR).

Bar Code Readers. Bar Code Reader is a device used for reading bar coded data (data in the form of light and dark lines). Bar coded data is generally used in labelling goods, numbering the books, etc. It may be a handheld scanner or may be embedded in a stationary scanner.Barcode Reader scans a barcode image, converts it into an alphanumeric value, which is then fed to the computer that the bar code reader is connected to.

Optical Mark Reader (OMR). OMR is a special type of optical scanner used to recognize the type of mark made by pen or pencil. It is used where one out of a few alternatives is to be selected and marked.

NOTES

Fig. 11. 9. Optical Mark Reader: It is specially used for checking the answer sheets of examinations having multiple choice questions.

Check your progress - 1
NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

Elaborate on the usage of pen tablets for graphic design and art.

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11.4. DIRECT INPUT DEVICES - CURSOR DEVICES

Of the devices that a graphic designer may use for input and output of computer instructions, several of them are cursor based such as the mouse.

The mouse was invented in the late 1960s but has only recently become fairly popular due to its convenient use with icons and pop-up and pull-down menus. There are two types of mice available: mechanical and optical. The mechanical mouse is a box with two metal wheels or rollers on the bottom whose axes are orthogonal in order to record the mouse motion in the Xand Y directions. Roll of the mouse on any flat surface causes the rotation of the wheel which is encoded into digital values via potentiometers. These values may be stored, when a mouse push-button is depressed, in the mouse registers accessible by the application program either immediately or during the computer interrupt every refresh cycle. Using these values, the program can determine the direction and magnitude of the mouse movement. The optical mouse is used in conduction with a special surface (the mouse pad). Movement over this surface are measured by a light beam modulation and optical encoding techniques. The light source is located at the bottom and the mouse must be in contact with the surface for the screen cursor to follow its movement. Push-buttons are mounted on the top of the mouse and programmed to various functions. A few other devices detailed earlier are cursor-based, including the light pen, graphic tablet, trackball and joystick.

11.5. DIRECT SCREEN INTERACTION - LOGICAL INPUT

An abstraction of one or more physical devices that delivers logical input values to an application. Graphics standards divide the primitive input devices into logical class locator, stroke, valuator, choice, pick, and string.

- Locator: which inputs a position - an (X, Y) value.

- Pick: which identifies a displayed object.
- Choice: which selects from a set of alternatives.
- Valuator: which inputs a value.
- String: which inputs a string of characters.
- Stroke: which inputs a sequence of (X, Y) positions.

Locator and pick supply input data directly related to some feature of the display. In contrast, the other input devices supply quite simple data not directly related to the display. However, they are frequently generated by physical devices associated with graphics displays and can be conveniently echoed on these graphics displays. In addition these data are commonly required by interactive programs. Physical devices will map into one or more of these logical devices. Typical physical devices that are often used to map onto these logical devices are:

- Locator: crosshairs and thumbwheels on a storage tube.
- Pick: light pen hitting an object displayed on the screen.
- Choice: button box or menu selection using a light pen.
- Valuator: potentiometers or inputting a value from a keyboard.
- String: keyboard input of a line of text.
- Stroke: tablet input.

11.6. LINE DRAWING DISPLAYS-RASTER SCAN DISPLAYS

A Raster Scan Display is based on intensity control of pixels in the form of a rectangular box called Raster on the screen. Information of on and off pixels is stored in refresh buffer or Frame buffer.

Televisions in our house are based on Raster Scan Method. The raster scan system can store information of each pixel position, so it is suitable for realistic display of objects. Raster Scan provides a refresh rate of 60 to 80 frames per second. Frame Buffer is also known as Raster or bitmap. In Frame Buffer the positions are called picture elements or pixels. Beam refreshing is of two types. First is horizontal retracing and second is vertical retracing. When the beam starts from the top left corner and reaches the bottom right scale, it will again return to the top left side called at vertical retrace. Then it will again more horizontally from top to bottom call as horizontal retracing shown in fig:

A raster scan, or raster scanning, is the rectangular pattern of image capture and reconstruction in television. By analogy, the term is used for raster graphics, the pattern of image storage and transmission used in most computer bitmap image systems. The word raster comes from the Latin word rastrum (a rake), which is derived from radere (to scrape); see also rastrum, an instrument for drawing musical staff lines.

The pattern left by the lines of a rake, when drawn straight, resembles the parallel lines of a raster: this line-by-line scanning is what creates a raster. It is a systematic process of covering the area progressively, one line at a time. Although often a great deal faster, it is similar in the most-general sense to how one's gaze travels when one reads lines of text.

Scan lines

In a raster scan, an image is subdivided into a sequence of (usually horizontal) strips known as "scan lines". Each scan line can be transmitted in the form of an analog signal as it is read from the video source, as in television systems, or can be further divided into discrete pixels for processing in a computer system. This ordering of pixels by rows is known as raster order, or raster scan order. Analog television has discrete scan lines (discrete vertical resolution), but does not have discrete pixels (horizontal resolution) – it instead varies the signal continuously over the scan line. Thus, while the number of scan lines (vertical resolution) is unambiguously defined, the horizontal resolution is more approximate, according to how quickly the signal can change over the course of the scan line.

Scanning pattern

The beam position (sweeps) follow roughly a sawtooth wave.

In raster scanning, the beam sweeps horizontally left-to-right at a steady rate, then blanks and rapidly moves back to the left, where it turns back on and sweeps out the next line. During this time, the vertical position is also steadily increasing (downward), but much more slowly – there is one vertical sweep per image frame, but one horizontal sweep per line of resolution. Thus each scan line is sloped slightly "downhill" (towards the lower right), with a slope of approximately –1/horizontal resolution, while the sweep back to the left (retrace) is significantly faster than the forward scan, and essentially horizontal. The resulting tilt in the scan lines is small, and is dwarfed in effect by screen convexity and geometrical imperfections.

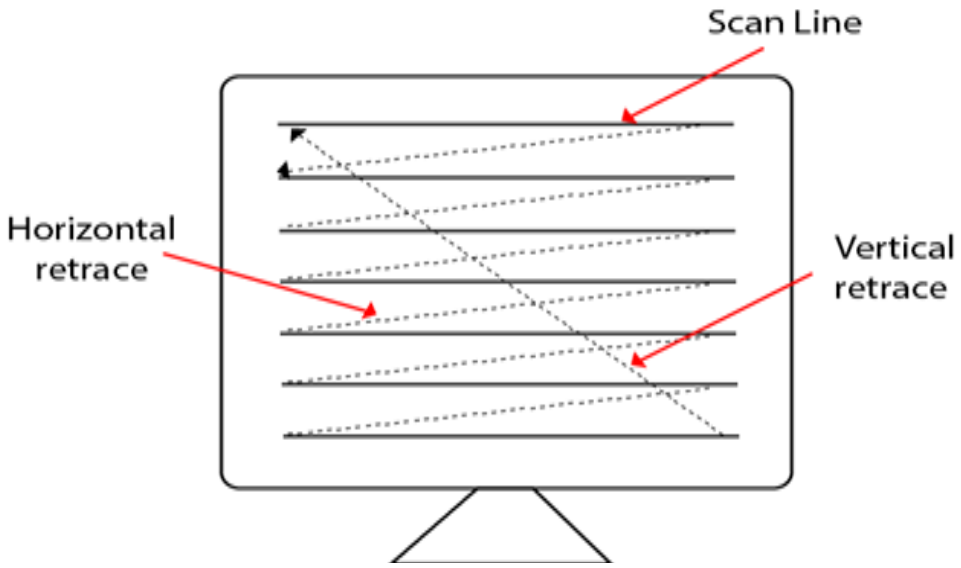

Fig. 11. 10. Screen retracing.

There is a misconception that once a scan line is complete, a CRT display in effect suddenly jumps internally, by analogy with a typewriter or printer's paper advance or line feed, before creating the next scan line. As discussed above, this does not exactly happen: the vertical sweep continues at a steady rate over a scan line, creating a small tilt. Steady-rate sweep is

done, instead of a stair step of advancing every row, because steps are hard to implement technically, while steady-rate is much easier.

The resulting tilt is compensated in most CRTs by the tilt and parallelogram adjustments, which impose a small vertical deflection as the beam sweeps across the screen. When properly adjusted, this deflection exactly cancels the downward slope of the scanlines. The horizontal retrace, in turn, slants smoothly downward as the tilt deflection is removed; there's no jump at either end of the retrace. In detail, scanning of CRTs is performed by magnetic deflection, by changing the current in the coils of the deflection yoke. Rapidly changing the deflection (a jump) requires a voltage spike to be applied to the yoke, and the deflection can only react as fast as the inductance and spike magnitude permit.

Electronically, the inductance of the deflection yoke's vertical windings is relatively high, and thus the current in the yoke, and therefore the vertical part of the magnetic deflection field, can change only slowly.

In fact, spikes do occur, both horizontally and vertically, and the corresponding horizontal blanking interval and vertical blanking interval give the deflection currents settle time to retrace and settle in their new value. This happens during the blanking interval.

In electronics, these (usually steady-rate) movements of the beam[s] are called "sweeps", and the circuits that create the currents for the deflection yoke (or voltages for the horizontal deflection plates in an oscilloscope) are called the sweep circuits. These create a sawtooth wave: steady movement across the screen, then a typically rapid move back to the other side, and likewise for the vertical sweep. Furthermore, wide-deflection-angle CRTs need horizontal sweeps with current that changes proportionally faster toward the centre, because the centre of the screen is closer to the deflection yoke than the edges. A linear change in current would swing the beams at a constant rate angularly; this would cause horizontal compression toward the centre.

Check your progress - 2

NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

Describe the two types of beam refreshing in raster scan displays.

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11.7. LET US SUM UP

Of the devices that a graphic designer may use for input and output of computer instructions, several of them are cursor based such as the mouse. The mouse was invented in the late 1960s but has only recently become fairly popular due to its convenient use with icons and pop-up and pull-down menus. There are two types of mice available: mechanical and optical. A few other devices detailed earlier are cursor-based, including the

light pen, graphic tablet, trackball and joystick. Graphics tablet is gaining popularity among digital artists. It is a device on which sketches can be made using a pen. It is used for fine works of drawing and image manipulation applications. A graphics tablet is a computer input device that enables a user to hand-draw images, animations and graphics, with a special pen-like stylus, similar to the way a person draws images with a pencil and paper. An abstraction of one or more physical devices that delivers logical input values to an application. Graphics standards divide the primitive input devices into logical class locator, stroke, valuator, choice, pick, and string. A Raster Scan Display is based on intensity control of pixels in the form of a rectangular box called Raster on the screen. Information of on and off pixels is stored in refresh buffer or Frame buffer. Televisions in our house are based on Raster Scan Method.

11.8. UNIT-END EXERCISES

Outline the different types of input and output devices used for graphic design

11.9. ANSWERS TO CHECK YOUR PROGRESS

1. Elaborate on the usage of pen tablets for graphic design and art

Answer: It is a device on which sketches can be made using a pen. It is used for fine works of drawing and image manipulation applications. A graphics tablet (also known as a digitizer, drawing tablet, drawing pad, digital drawing tablet, pen tablet, or digital art board) is a computer input device that enables a user to hand-draw images, animations and graphics, with a special pen-like stylus, similar to the way a person draws images with a pencil and paper. These tablets may also be used to capture data or handwritten signatures. It can also be used to trace an image from a piece of paper which is taped or otherwise secured to the tablet surface. Capturing data in this way, by tracing or entering the corners of linear poly-lines or shapes is called digitizing. The device consists of a flat surface upon which the user may "draw" or trace an image using the attached stylus, a pen-like drawing apparatus. The image is displayed on the computer monitor, though some graphic tablets now also incorporate an LCD screen for a more realistic or natural experience and usability. Some tablets are intended as a replacement for the computer mouse as the primary pointing and navigation device for desktop computers.

2.Describe the two types of beam refreshing in raster scan displays

Answer: Frame Buffer is also known as Raster or bitmap. In Frame Buffer the positions are called picture elements or pixels. Beam refreshing is of two types. First is horizontal retracing and second is vertical retracing. When the beam starts from the top left corner and reaches the bottom right scale, it will again return to the top left side called at vertical retrace. Then it will again more horizontally from top to bottom call as horizontal retracing.

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11.10. SUGGESTED READINGS

- D. P. Mukherjee. Fundamentals Of Computer Graphics And Multimedia. PHI Learning Pvt. Ltd., 2004.

- Sol Sherr. Input Devices: Computer Graphics Technology, Volume 1 of Computer Graphics - Technology and Applications. Elsevier, 2012.

NOTES

BLOCK IV: DIMENSIONS OF GRAPHICS

UNITXII

Chapters

12.1. INTRODUCTION

This unit will delve into different file formats of graphics, starting from two-dimensional to raster graphics. It will also elaborate on different file formats that a graphic designer may have to deal with. As much as creating of graphic material, knowledge about different file formats is necessary as there are several input systems that accept content in particular formats. For instance, digital devices accept the colour scheme of RGB, while the printers demand the CMYK material.

12.2. OBJECTIVES

After you complete this unit, you will be able to

- ✓ Understand the basics of two-dimensional graphics
- ✓ Familiarise with the different file formats of graphics

12.3. TWO DIMENSIONAL GRAPHICS

2D computer graphics is the computer-based generation of digital images—mostly from two-dimensional models (such as 2D geometric models, text, and digital images) and by techniques specific to them.

The word may stand for the branch of computer science that comprises such techniques or for the models themselves. 2D computer graphics are mainly used in applications that were originally developed upon traditional printing and drawing technologies, such as typography, cartography, technical drawing, advertising, etc.

In those applications, the two-dimensional image is not just a representation of a real-world object, but an independent artefact with

added semantic value; two-dimensional models are therefore preferred, because they give more direct control of the image than 3D computer graphics (whose approach is more akin to photography than to typography).

In many domains, such as desktop publishing, engineering, and business, a description of a document based on 2D computer graphics techniques can be much smaller than the corresponding digital image—often by a factor of 1/1000 or more. This representation is also more flexible since it can be rendered at different resolutions to suit different output devices.

For these reasons, documents and illustrations are often stored or transmitted as 2D graphic files.

12.4. RASTER GRAPHICS

In computer graphics, raster graphics or bitmap image is a dot matrix data structure that represents a generally rectangular grid of pixels (points of colour), viewable via a monitor, paper, or other display medium. Raster images are stored in image files with varying formats.

A bitmap is a rectangular grid of pixels, with each pixel's colour being specified by a number of bits. A bitmap might be created for storage in the display's video memory or as a device-independent bitmap file. A raster is technically characterised by the width and height of the image in pixels and by the number of bits per pixel (or colour depth, which determines the number of colours it can represent).

The printing and prepress industries know raster graphics as contones (from "continuous tones"). The opposite ofcontones is "line work", usually implemented as vector graphics in digital systems. Vector images can be rasterized (converted into pixels), and raster images vectorised (raster images converted into vector graphics), by software. In both cases, some information is lost, although vectorising can also restore some information back to machine readability, as happens in optical character recognition.

Graphics in Practice

- Basic primitives: Points, Lines, Triangles/Polygons.
- Each constructed fundamentally from points.
- Points can be specified in different coordinate systems.

The pipeline of operations on a point is:

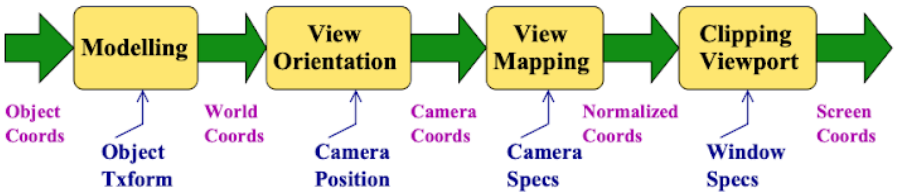

Fig. 12.1. Pipeline of operations.

Scan Conversion or Rasterization

- Primitives are defined using points, which have beenmapped to the screen coordinates.
- In vector graphics, connect the points using a pen directly.

- In Raster Graphics, we create a discretized image of thewhole screen onto the frame buffer first. The image isscanned automatically onto the display periodically.
- This step is called Scan Conversion or Rasterization.
- *Scan Converting a Point*
- The 3D point has been transformed to its screen Coordinates (u,v).
- Round the coordinates to frame buffer array indices (i,j).
- Current colour is defined/known. Frame buffer array is initialized to the background colour.
- Perform: frameBuf[i, j] ← currentColour
- The function WritePixel(x, y, colour) does the above.
- If PointSize> 1, assign the colour to a number of points in the neighbourhood!

Shared Points/Edges

• It is common to have points in common between two lines and edges between two polygons.
• They will be scan converted twice. Not efficient.
Sometimes harmful.
• Solution: Treat the intervals closed on the left and open on the right.
[xm,xM) & [ym,yM)
• Thus, edges of polygons on the top and right boundaries
are not drawn.

Clipping Polygons

• Restrict drawing/ filling of a polygon to the inside of the cliprectangle.
• A convex polygon remains convex after clipping.
• A concave polygon can be clipped to multiple polygons.
• Can perform by intersecting to the four clip edges in turn.

Sutherland-Hodgman Algorithm

• Input: A list of vertices v1,v2, · · · ,vn. Implied edges fromvi to vi+1 and from vn to v1.
• Output: Another list of vertices giving the clipped polygon.
• Method: Clip the entire polygon to the infinite line for eachclip edge in turn.
• Four passes, the output of each is a partially clippedpolygon used as input to the next.
• Post-processing to eliminate degenerate edges.

Complete Algorithm

• Invoke SuthHodg() 4 times for each clip edge as clipBoundary.
• The outVertexList after one run becomes the inVertexListfor the next.
• Uses list data structures to implement polygons.
• Function inside () determines if a point is in the inside ofthe clip-boundary. We can define it as “being on the leftwhen looking from the first vertex to the second”.
• Can be extended to clip to any convex polygonal region!

Filled Polygons

• For each scan line, identify spans of the polygon interior.

Strictly interior points only.
• For each scan line, the parity determines if we are insideor outside the polygon. Odd is inside, Even is outside.
• Trick: End-points count towards parity enumeration onlyif it is ayminpoint.
• Span extrema points and other information can becomputed during scan conversion. This information isstored in a suitable data structure for the polygon.

Scan Converting Filled Polygons
• Find intersections of each scan line with polygon edges.
• Sort them in increasing X-coordinates.
• Use parity to find interior spans and fill them.
• Most information can be computed during scan conversion.
A list of intersecting polygons stored for each scan line.
• Use edge coherence for the computation otherwise.

Filled Polygon Scan Conversion
• Perform all of it together. Each scan line should not beintersected with each polygon edge!
• Edges are known when polygon vertices are mapped toscreen coordinates.
• Build up an edge table while that is done.
• Scan conversion is performed in the order of scan lines.
Edge coherence can be used; an active edge table cankeep track of which edges matter for the current scan line.

Edge Table for a Polygon
Construct a bucket-sorted table of edges, sorted intobuckets of ym for the edge.
• Each bucket y contains a list of edges with y = ym, in theincreasing order of the x coordinate of the lower end point.
• Each edge is represented by its yM for the edge, x ofthe lower (that is ym) point, and the slope as a rationalnumber.
• This is the basis for constructing the Active Edge Table tocompute the spans.

Polygon and Edge Table

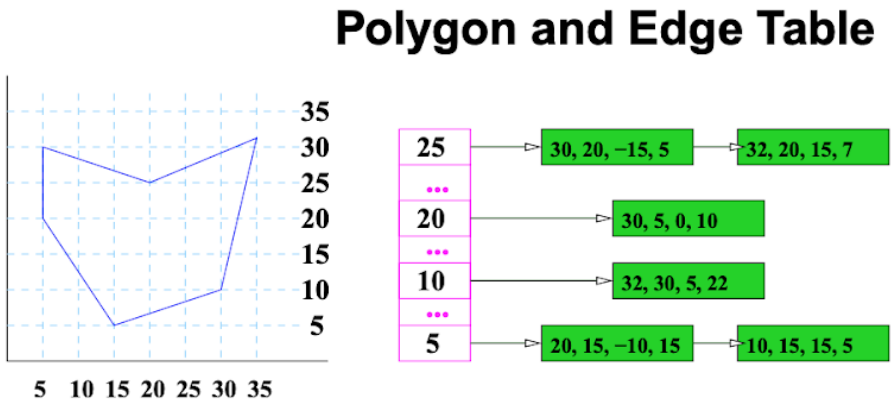

Fig. 12.2. Polygon and Edge table.

Scan Conversion: Summary

• Filling the frame buffer given 2D primitives.
• Convert an analytical description of the basic primitivesinto pixels on an integer grid in the frame buffer.
• Lines, Polygons, Circles, etc. Filled and unfilledprimitives.
• Efficient algorithms required since scan conversion is done repeatedly.
• 2D Scan Conversion is all, even for 3D graphics.
High level primitives (point, line, polygon)
map to windowcoordinates using transformations.
• Creating the display image on the Frame Buffer isimportant.
Needs to be done efficiently.
• Clipping before filling FB to eliminate futile effort.
• After clipping, line remains line, polygons can becomepolygons of greater number of sides, etc.
• General polygon algorithm for clipping and scanconversion are necessary.

12.5. FILE FORMATS- GIF, JPEG, TIFF

1. TIFF (also known as TIF), file types ending in .tif
TIFF stands for Tagged Image File Format. TIFF images create large files. TIFF images are uncompressed and thus contain a lot of detailed image data (which is why the files are so big) TIFFs are also extremely flexible in terms of colour (they can be grayscale, or CMYK for print, or RGB for web) and content (layers, image tags). TIFF is the most common file type used in photo software (such as Photoshop), as well as page layout software (such as Quark and InDesign), again because a TIFF contains a lot of image data.

2. JPEG (also known as JPG), file types ending in .jpg
JPEG stands for Joint Photographic Experts Group, which created this standard for this type of image formatting. JPEG files are images that have been compressed to store a lot of information in a small-size file. Most digital cameras store photos in JPEG format, because then you can take more photos on one camera card than you can with other formats.A JPEG is compressed in a way that loses some of the image detail during the

compression in order to make the file small. JPEG files are usually used for photographs on the web, because they create a small file that is easily loaded on a web page and also looks good. JPEG files are bad for line drawings or logos or graphics, as the compression makes them look "bitmappy" (jagged lines instead of straight ones).

3. GIF, file types ending in .gif
GIF stands for Graphic Interchange Format. This format compresses images but, as different from JPEG, the compression is lossless (no detail is lost in the compression, but the file can't be made as small as a JPEG). GIFs also have an extremely limited colour range suitable for the web but not for printing. This format is never used for photography, because of the limited number of colours. GIFs can also be used for animations.

Check your progress - 1
NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

Differentiate between TIFF and JPEG file formats.
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_____
_____

12.6. Graphics Animation Files

Graphic animation is a variation of stop motion (and possibly more conceptually associated with traditional flat cel animation and paper drawing animation, but still technically qualifying as stop motion) consisting of the animation of photographs (in whole or in parts) and other non-drawn flat visual graphic material, such as newspaper and magazine clippings. In its simplest form, Graphic "animation" can take the form of the animation camera merely panning up and down and/or across individual photographs, one at a time, (filmed frame-by-frame, and hence, "animated") without changing the photographs from frame to frame. But once the photos (or "graphics") are also moved from frame to frame, more exciting montages of movement can be produced, such as on Los Angeles animator Mike Jittlov's 1977 short film, Animato. Graphic animation can be (and often is) combined with other forms of animation including direct manipulation animation and traditional cel animation.Examples are Frank Mouris' 1973 Oscar-winning short film Frank Film, and Charles Braverman's Condensed Cream of the Beatles (1974), originally produced for Geraldo Rivera's late night TV show of the time, Goodbye America.

Long Name	**Typical File Extensions**	**Content**	
ANI	Microsoft Windows Animated Cursor	.ani	Color/Animated Cursor
APNG	Animated Portable Network Graphics	.png	Bitmaps/Animation

EVA	Extended Vector Animation	.eva	Vector Animation
FLA	Adobe (Macromedia) Flash FLA Project File Format	.fla	Animation/Multimedia/Video
FLC	FLC	.flc	Animation
FLI	FLI	.fli	Animation
GIF	Graphics Interchange Format	.gif	Bitmaps/Animation
MNG	Multi-image Network Graphics	.mng	Bitmaps/Animation
SWF	Small Web Format (Flash) - originally "ShockWave Flash"	.swf	Animation/Multimedia/Video
SWI	SWiSH Project File	.swi	Animation/Multimedia/Video
WebP	WebP	.webp	Bitmap/Animation

12.7. POSTSCRIPT/ENCAPSULATED POSTSCRIPT FILES

EPS is a file extension for a graphics file format used in vector-based images in Adobe Illustrator. EPS stands for Encapsulated PostScript. An EPS file can contain text as well as graphics. It also usually contains a bitmap version of the image for simpler viewing rather than the vector instructions to draw the image. Encapsulated PostScript (EPS) is a Document Structuring Conventions-conforming (DSC) PostScript document format usable as a graphics file format. EPS files are more-or-less self-contained, reasonably predictable PostScript documents that describe an image or drawing and can be placed within another PostScript document. An EPS file is essentially a PostScript program, saved as a single file that includes a low-resolution preview "encapsulated" within it, allowing some programs to display a preview on the screen.An EPS file contains a Bounding Box DSC comment, describing the rectangle containing the image described by the EPS file. Applications can use this information to lay out the page, even if they are unable to directly render the PostScript inside.EPS, together with DSC's Open Structuring Conventions, form the basis of early versions of the Adobe Illustrator Artwork file format.

12.8. LET US SUM UP

2D computer graphics is the computer-based generation of digital images—mostly from two-dimensional models (such as 2D geometric models, text, and digital images) and by techniques specific to them. The word may stand for the branch of computer science that comprises such techniques or for the models themselves. Raster graphics or bitmap image is a dot matrix data structure that represents a generally rectangular grid of pixels (points of colour), viewable via a monitor, paper, or other display medium. Raster images are stored in image files with varying formats. JPEG is a popular file format used for image files. It stands for Joint Photographic Experts Group, which created this standard for this type of image formatting. JPEG files are images that have been compressed to store a lot of information in a small-size file. Most digital cameras store photos in JPEG format, because then you can take more photos on one camera card than you can with other formats.

12.9. UNIT-END EXERCISES

Try to open an image file in a software such as Photoshop and save it in different file formats to understand the differences in file sizes and characteristics.

12.10. ANSWERS TO CHECK YOUR PROGRESS

1. Differentiate between TIFF and JPEG file formats.

Answer:TIFF stands for Tagged Image File Format. TIFF images create very large file sizes. TIFF images are uncompressed and thus contain a lot of detailed image data (which is why the files are so big) TIFFs are also extremely flexible in terms of color (they can be grayscale, or CMYK for print, or RGB for web) and content (layers, image tags). TIFF is the most common file type used in photo software (such as Photoshop), as well as page layout software (such as Quark and InDesign), again because a TIFF contains a lot of image data. JPEG stands for Joint Photographic Experts Group, which created this standard for this type of image formatting. JPEG files are images that have been compressed to store a lot of information in a small-size file. Most digital cameras store photos in JPEG format, because then you can take more photos on one camera card than you can with other formats. A JPEG is compressed in a way that loses some of the image detail during the compression in order to make the file small (and thus called “lossy” compression). JPEG files are usually used for photographs on the web, because they create a small file that is easily loaded on a web page and also looks good. JPEG files are bad for line drawings or logos or graphics, as the compression makes them look “bitmappy” (jagged lines instead of straight ones).

NOTES

12.11. SUGGESTED READINGS

- Wikipedia. Graphics File Formats: Raster Graphics, Jpeg, Adobe Flash, Graphics Interchange Format, Vector Graphics, Portable Document Format, Portable Network Gr. General Books, 2013.

UNITXIII

Chapters

13.1. INTRODUCTION

This unit will discuss parametric representations of curves and surfaces. Parametric representations are Mathematical expressions that can represent a particular geometric shape. A graphic designer, as a user of multi-dimensional graphic applications and creator, needs to be aware of mathematical expressions for shapes. This knowledge will help a designer to understand and create shapes with relative ease using graphic tools. Lines and curves are the building blocks of most shapes: especially the ones needed to create the likes of logos, illustrations and 3D graphics.

13.2. OBJECTIVES

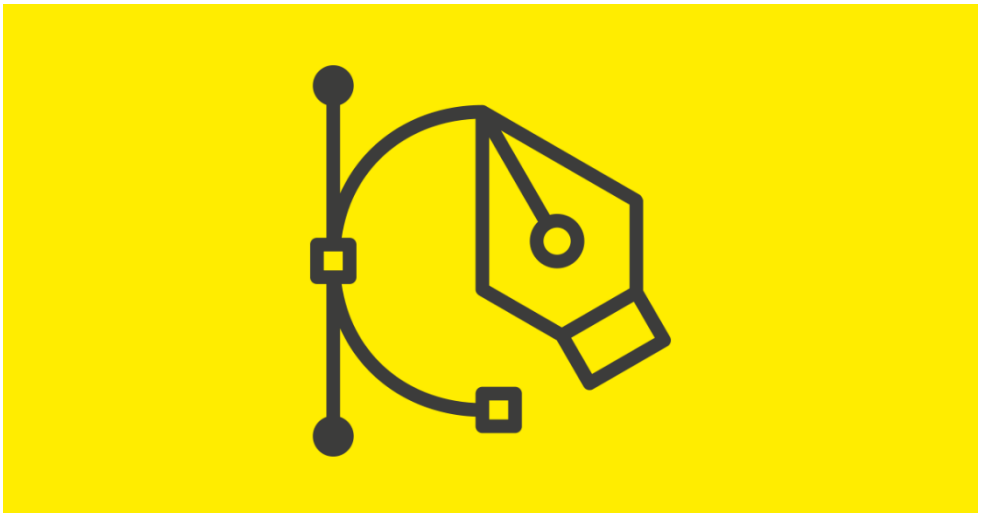
After you complete this unit, you will be able to

- ✓ Understand the basics of curves and surfaces
- ✓ Familiarise with the parametric representations of curves
- ✓ Familiarise with the parametric representations of surfaces
- ✓ Understand the basics of planes
- ✓ Understand the basics of ruled surfaces
- ✓ Understand the basics of curved surfaces

13.3. CURVES AND SURFACES

Curves. Simple curves are circles, arcs, and ellipses. More complex curves commonly used in engineering design and CAD are called freeform curves. The spline curve is one of the most important curves used in the aircraft and shipbuilding industries. The cross section of an airplane wing or a ship's hull is a spline curve. Also, spline curves are commonly used to define the path of motion for a computer animation. For CAD systems, three types of freeform curves were developed: splines, Bezier curves, and B-spline curves. These curves can be described by parametric equations, in which the X and Y coordinates of the control points are computed as a function of a third variable called a parameter. If the curves are created by smoothly connecting the control points, the process is called interpolation.

If the curves are created by drawing a smooth curve that goes through most, but not all, of the control points, the process is approximation.



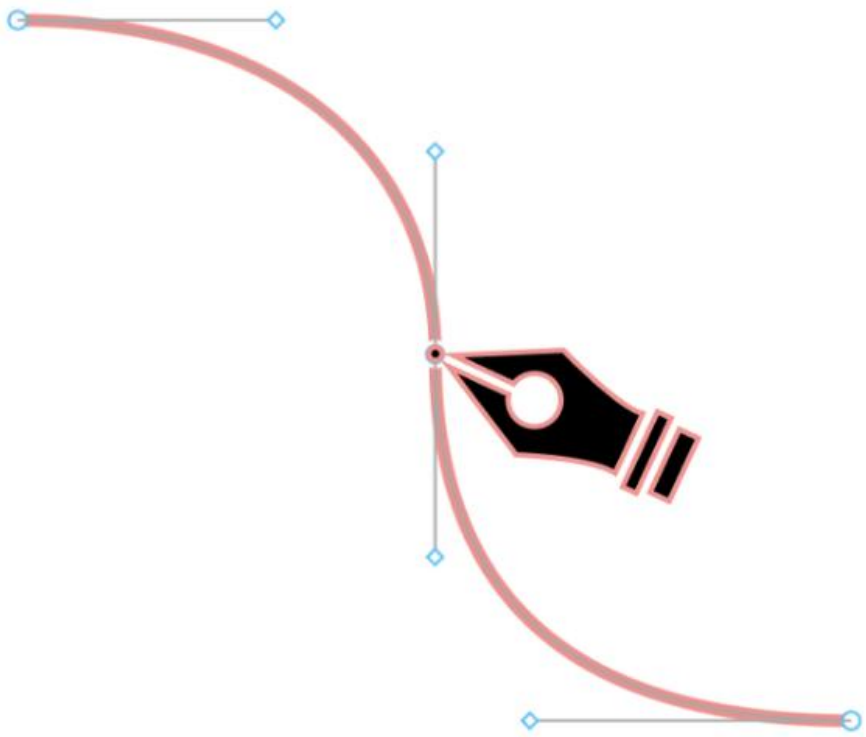
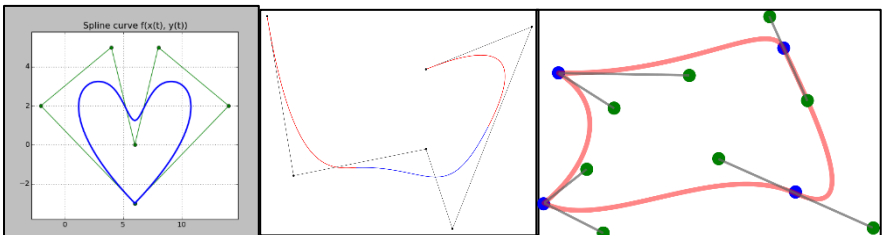


Fig. 13.1. Curves. (Below) Spline, B-spline and Bezier curves.



Check your progress - 1
NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

Name the three types of freeform curves.

_____
_____
_____

Surfaces.A surface is a finite portion of a plane or the outer face of an object bounded by an identifiable perimeter. The fender of an automobile and the airplane wing are examples of complex 3-D surfaces. Just as a line represents the path of a moving point, a surface represents the path of a moving line, called a generatrix. A generatrix can be a straight or curved line. The path that the generatrix travels in called the directrix. A directrix can be a point, a straight line, or a curved line. The shape of a surface is determined by the constraints placed on the moving line used to generate the surface. Surfaces are generally classed as planar, single-curved, double-curved, warped, and freeform.

13.4. PARAMETRIC REPRESENTATION OF CURVES

Curves can be described mathematically by nonparametric or parametric equations. Nonparametric equations can be explicit or implicit. For a nonparametric curve, the coordinates y and z of a point on the curve are expressed as two separate functions of the third coordinate x as the independent variable.

$$\mathbf{P} = \begin{bmatrix} x & y & z \end{bmatrix}^{\mathrm{T}} = \begin{bmatrix} x & f(x) & g(x) \end{bmatrix}^{\mathrm{T}}$$

Fig. 13.2. Non-parametric explicit form.

$$F(x, y, z) = 0$$
$$G(x, y, z) = 0$$

Fig. 13.3. Non-parametric implicit form.

Three problems with describing curves using nonparametric equations are:

- If the slope of a curve at a point is vertical or near vertical, its value becomes infinity or very large.
- Shapes of most engineering objects are intrinsically independent of any coordinate system.
- If the curve is to be displayed as a series of point or straight-line segments, the computations involved could be extensive.

In parametric form, each point on a curve is expressed as a function of a parameter u.The parametric equation for a three-dimensional curve in space takes the following vector form:

$$\mathbf{P}(u) = \begin{bmatrix} x & y & z \end{bmatrix}^T = \begin{bmatrix} x(u) & y(u) & z(u) \end{bmatrix}^T, \quad u_{min} \le u \le u_{max}$$

Fig. 13.4. Parametric form.

13.5. PARAMETRIC REPRESENTATION OF SURFACES

Similarly, surfaces can be represented in the form of mathematical equations and there are the following three forms of equations:

$$x^2 + y^2 + z^2 = R^2$$

Fig. 13.5. Non-parametric implicit.

$$y(x,z) = \pm\sqrt{R^2 - x^2 - z^2}$$

Fig. 13.6. Non-parametric explicit.

$$\mathbf{P}(u,v) = \begin{bmatrix} x(u,v) \\ y(u,v) \\ z(u,v) \end{bmatrix} = \begin{bmatrix} R\cos(u)\cos(v) \\ R\sin(u)\cos(v) \\ R\sin(v) \end{bmatrix}$$

Fig. 13.7. Parametric form.

13.6. PLANES

A plane is a two-dimensional surface that wholly contains every straight line joining any two points lying on that surface. Although many drawings

are created from simple geometric primitives, such as lines and curves, many real-world designs are made of planar surfaces. Theoretically, a plane has width and length but no unbounded two-dimensional surface that extends without a perimeter in all directions. A finite plane is a bounded two-dimensional surface that extends to a perimeter in all directions. A plane can be defined by three points not in a straight line; two parallel lines; a line plus a point that is not on the line or its extensions; or two intersecting lines.

13.7. RULED SURFACES

In geometry, a surface S is ruled (also called a scroll) if through every point of S there is a straight line that lies on S. Examples include the plane, the curved surface of a cylinder or cone, a conical surface with elliptical directrix, the right conoid, the helicoid, and the tangent developable of a smooth curve in space.A ruled surface can be described as the set of points swept by a moving straight line. For example, a cone is formed by keeping one point of a line fixed whilst moving another point along a circle. A surface is doubly ruled if through every one of its points there are two distinct lines that lie on the surface.

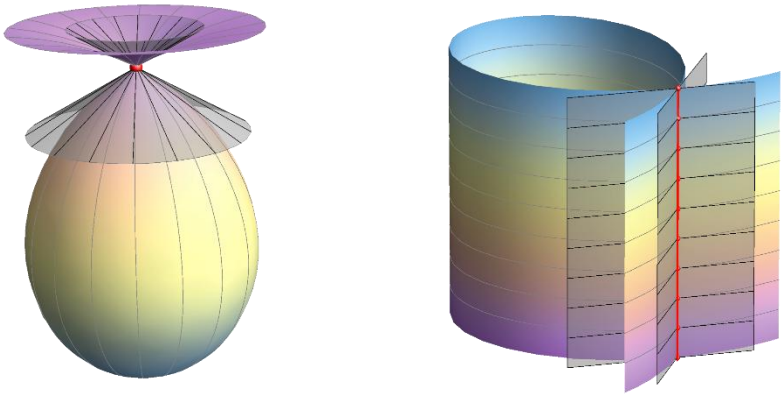


Fig. 13.8. Curved and Ruled surfaces.

The hyperbolic paraboloid and the hyperboloid of one sheet are doubly ruled surfaces. The plane is the only surface which contains at least three distinct lines through each of its points. The properties of being ruled or doubly ruled are preserved by projective maps, and therefore are concepts of projective geometry. In algebraic geometry ruled surfaces are sometimes considered to be surfaces in affine or projective space over a field, but they are also sometimes considered as abstract algebraic surfaces without an embedding into affine or projective space, in which case "straight line" is understood to mean an affine or projective line.

Check your progress - 2
NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

Cones and spheres are examples of which type of surfaces?
_____
_____
_____

13.8. CURVED SURFACES

A **single-curved surface** is the simple-curved bounded face of an object produced by a straight-line generatrix revolved around an axis directrix (yielding a cylinder) or a vertex directrix (yielding a cone). A **double-curved surface** contains no straight lines and is the compound- curved bounded face of an object produced by an open or closed curved-line generatrix revolved around an axis directrix (yielding a sphere of ellipsoid), a centredirectrix (yielding a torus), or a vertex directrix (yielding a paraboloid or hyperboloid).

13.9. LET US SUM UP

Simple curves are circles, arcs, and ellipses. More complex curves commonly used in engineering design and CAD are called freeform curves. For CAD systems, three types of freeform curves were developed: splines, Bezier curves, and B-spline curves. Curves and surfaces can be described mathematically by nonparametric or parametric equations. Nonparametric equations can be explicit or implicit.A plane is a two-dimensional surface that wholly contains every straight line joining any two points lying on that surface. In geometry, a surface S is ruled (also called a scroll) if through every point of S there is a straight line that lies on S.

13.10. UNIT-END EXERCISES

Choose random three-dimensional objects and check if they can be identified as ruled and curved surfaces.

13.11. ANSWERS TO CHECK YOUR PROGRESS

1. Name the three types of freeform curves.
Answer:Splines, Bezier curves, and B-spline curves

2. Cones and spheres are examples of which type of surfaces?
Answer. Cones are an example of ruled surfaces and spheres are an example of curved surfaces.

13.12. SUGGESTED READINGS

- Pierre-Jean Laurent, Alain Le Méhauté, Larry L. Schumaker. Curves and Surfaces. Academic Press, 2014
- Abel Gomes, Irina Voiculescu, Joaquim Jorge, Brian Wyvill, Callum Galbraith. Implicit Curves and Surfaces: Mathematics, Data Structures and Algorithms. Springer Science & Business Media, 2009

NOTES

UNIT XIV

Chapters

14.1. INTRODUCTION

3D graphics were first created in the 1960s, when vector images were introduced. This approach allowed for 3D graphics to be created, using the same techniques - mathematical formulas calculating the position of each pixel in the 3D image. Once the 3D graphics became popular, they quickly gained popularity in the art world for their various uses. Quickly, 3D images were animated and CGI images (Computer Generated Imagery) became extensively used in cinema and computer games.3D graphics offered a different approach, compared to the one utilized in 2D images, creating images closer to reality. Even though the first 3D images were clearly computer created, today a 3D image can be almost as real and vibrant as real life.This unit will discuss three-dimensional graphics and transformations, algorithms, lighting and depth of field in the production of 3D creatives.

14.2. OBJECTIVES

After you complete this unit, you will be able to

- ✓ Understand the three dimensional graphics
- ✓ Familiarise with the 3D transformations- normal, oblique central projections
- ✓ Familiarise with the 3D algorithms-hidden lines and hidden surface removal
- ✓ Understand the lighting
- ✓ Understand the perception and depth of field

14.3. THREE-DIMENSIONAL GRAPHICS

3D computer graphics, or three-dimensional computer graphics (in contrast to 2D computer graphics), are graphics that use a three-dimensional representation of geometric data (often Cartesian) that is stored in the computer for the purposes of performing calculations and rendering 2D

images. The resulting images may be stored for viewing later (possibly as an animation) or displayed in real time.

Fig. 14. 1. 3D graphics created on Cinema 4D.

3D computer graphics rely on many of the same algorithms as 2D computer vector graphics in the wire-frame model and 2D computer raster graphics in the final rendered display. In computer graphics software, 2D applications may use 3D techniques to achieve effects such as lighting, and, similarly, 3D may use some 2D rendering techniques. The objects in 3D computer graphics are often referred to as 3D models. Unlike the rendered image, a model's data is contained within the graphical data file. A 3D model is a mathematical representation of any three-dimensional object; a model is not technically a graphic until it is displayed.

A model can be displayed as a two-dimensional image through a process called 3D rendering, or it can be used in non-graphical computer simulations and calculations. With 3D printing, models are rendered into an actual 3D physical representation of themselves, with some limitations as to how accurately the physical model can match the virtual model.

14.4. 3D TRANSFORMATIONS - NORMAL

When transformations take place on a 3D plane, it is termed 3D transformation. A normal projection is one in which a three-dimensional object is projected onto two mutually perpendicular planes. Once a 3D model has been completed, its coordinates need to be converted to two dimensions to display the scene on a flat computer monitor or to print it on paper. This process of converting from 3D to 2D is called projection. The visual appearance of a 3D model depends on the position of the viewer (among other things). Take this into account when projecting a model.

NOTES

Check your progress - 1
NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

Define projection.
_____
_____
_____

14.5. 3D TRANSFORMATIONS- OBLIQUE CENTRAL PROJECTIONS

In oblique projections, the parallel projection rays are not perpendicular to the viewing plane as with orthographic projection, but strike the projection plane at an angle other than ninety degrees. In both orthographic and oblique projection, parallel lines in space appear parallel on the projected image. Because of its simplicity, oblique projection is used exclusively for pictorial purposes rather than for formal, working drawings. In an oblique pictorial drawing, the displayed angles among the axes as well as the foreshortening factors (scale) are arbitrary. The distortion created thereby is usually attenuated by aligning one plane of the imaged object to be parallel with the plane of projection thereby creating a true shape, full-size image of the chosen plane. Special types of oblique projections are:

Cavalier projection
In cavalier projection (sometimes cavalier perspective or high view point) a point of the object is represented by three coordinates, x, y and z. In the drawing, it is represented by only two coordinates, x″ and y″. On the flat drawing, two axes, x and z on the figure, are perpendicular and the length on these axes are drawn with a 1:1 scale; it is thus similar to the dimetric projections, although it is not an axonometric projection, as the third axis, here y, is drawn in diagonal, making an arbitrary angle with the x″ axis, usually 30 or 45°. The length of the third axis is not scaled.

Cabinet projection
The term cabinet projection (sometimes cabinet perspective) stems from its use in illustrations by the furniture industry. Like cavalier perspective, one face of the projected object is parallel to the viewing plane, and the third axis is projected as going off in an angle (typically 30° or 45° or arctan (2) = 63.4°). Unlike cavalier projection, where the third axis keeps its length, with cabinet projection the length of the receding lines is cut in half.

Military projection
A variant of oblique projection is called military projection. In this case the horizontal sections are isometrically drawn so that the floor plans are not distorted and the verticals are drawn at an angle. The military projection is given by rotation in the xy-plane and a vertical translation an amount z.

14.6. 3D ALGORITHMS- HIDDEN LINES AND HIDDEN SURFACE REMOVAL

In 3D computer graphics, hidden surface determination (also known as hidden surface removal (HSR), occlusion culling (OC) or visible surface determination (VSD)) is the process used to determine which surfaces and parts of surfaces are not visible from a certain viewpoint.

A hidden surface determination algorithm is a solution to the visibility problem, which was one of the first major problems in the field of 3D computer graphics. The process of hidden surface determination is sometimes called hiding, and such an algorithm is sometimes called a hider. The analogue for line rendering is hidden line removal. Hidden surface determination is necessary to render an image correctly, so that one cannot look through walls in virtual reality.

Hidden surface determination is a process by which surfaces which should not be visible to the user (for example, because they lie behind opaque objects such as walls) are prevented from being rendered. Despite advances in hardware capability there is still a need for advanced rendering algorithms. The responsibility of a rendering engine is to allow for large world spaces and as the world's size approaches infinity the engine should not slow down but remain at constant speed. Optimising this process relies on being able to ensure the deployment of as few resources as possible towards the rendering of surfaces that will not end up being rendered to the user. There are many techniques for hidden surface determination. They are fundamentally an exercise in sorting, and usually vary in the order in which the sort is performed and how the problem is subdivided. Sorting large quantities of graphics primitives is usually done by divide and conquer.

Hidden surface removal algorithms

Considering the rendering pipeline, the projection, clipping, and the rasterization steps are handled differently by the following algorithms:

Z-buffering:

During rasterization the depth/Z value of each pixel (or sample in the case of anti-aliasing, but without loss of generality the term pixel is used) is checked against an existing depth value. If the current pixel is behind the pixel in the Z-buffer, the pixel is rejected, otherwise it is shaded and its depth value replaces the one in the Z-buffer. Z-buffering supports dynamic scenes easily, and is currently implemented efficiently in graphics hardware. This is the current standard. The cost of using Z-buffering is that it uses up to 4 bytes per pixel, and that the rasterization algorithm needs to check each rasterized sample against the z-buffer. The z-buffer can also suffer from artefacts due to precision errors (also known as z-fighting), although this is far less common now that commodity hardware supports 24-bit and higher precision buffers.

Coverage buffers (C-Buffer) and Surface buffer (S-Buffer):

Faster than z-buffers and commonly used in games in the Quake I era. Instead of storing the Z value per pixel, they store list of already displayed segments per line of the screen. New polygons are then cut against already

displayed segments that would hide them. An S-Buffer can display unsorted polygons, while a C-Buffer requires polygons to be displayed from the nearest to the furthest. Because the C-buffer technique does not require a pixel to be drawn more than once, the process is slightly faster. This was commonly used with BSP trees, which would provide sorting for the polygons.

Sorted Active Edge List:
It is used in Quake 1, this was storing a list of the edges of already displayed polygons. Polygons are displayed from the nearest to the furthest. New polygons are clipped against already displayed polygons' edges, creating new polygons to display then storing the additional edges. It's much harder to implement than S/C/Z buffers, but it will scale much better with the increase in resolution.

Painter's algorithm:
It sorts polygons by their bary centre and draws them back to front. This produces few artefacts when applied to scenes with polygons of similar size forming smooth meshes and back face culling turned on. The cost here is the sorting step and the fact that visual artefacts can occur.

Binary space partitioning (BSP):
It divides a scene along planes corresponding to polygon boundaries. The subdivision is constructed in such a way as to provide an unambiguous depth ordering from any point in the scene when the BSP tree is traversed. The disadvantage here is that the BSP tree is created with an expensive pre-process. This means that it is less suitable for scenes consisting of dynamic geometry. The advantage is that the data is pre-sorted and error free, ready for the previously mentioned algorithms. Note that the BSP is not a solution to HSR, only an aid.

Ray tracing:
Attempt to model the path of light rays to a viewpoint by tracing rays from the viewpoint into the scene. Although not a hidden surface removal algorithm as such, it implicitly solves the hidden surface removal problem by finding the nearest surface along each view-ray. Effectively this is equivalent to sorting all the geometry on a per pixel basis.

The Warnock algorithm:
It divides the screen into smaller areas and sorts triangles within these. If there is ambiguity (i.e., polygons overlap in depth extent within these areas), then further subdivision occurs. At the limit, subdivision may occur down to the pixel level.

14.7. LIGHTING

Lighting or illumination is the deliberate use of light to achieve practical or aesthetic effects. Lighting includes the use of both artificial light sources like lamps and light fixtures, as well as natural illumination by capturing daylight. Daylighting (using windows, skylights, or light shelves) is sometimes used as the main source of light during daytime in buildings. This can save energy in place of using artificial lighting, which represents a

major component of energy consumption in buildings. Proper lighting can enhance task performance, improve the appearance of an area, or have positive psychological effects on occupants. Indoor lighting is usually accomplished using light fixtures, and is a key part of interior design. Lighting can also be an intrinsic component of landscape projects.

Types of Lights

In 3D graphics, there are 4 basic types of simulated lights. Rendering programs also have a host of other, more sophisticated light types, but YG and most other real-time 3D engines only have the 4 basic ones.

Ambient: as above, light that doesn't come from any direction. Illuminates all surfaces everywhere in the whole world evenly regardless of where they are and which way they're facing. In YG, there is not a specific ambient light node - you create ambient light by just setting the ambient colour of light.

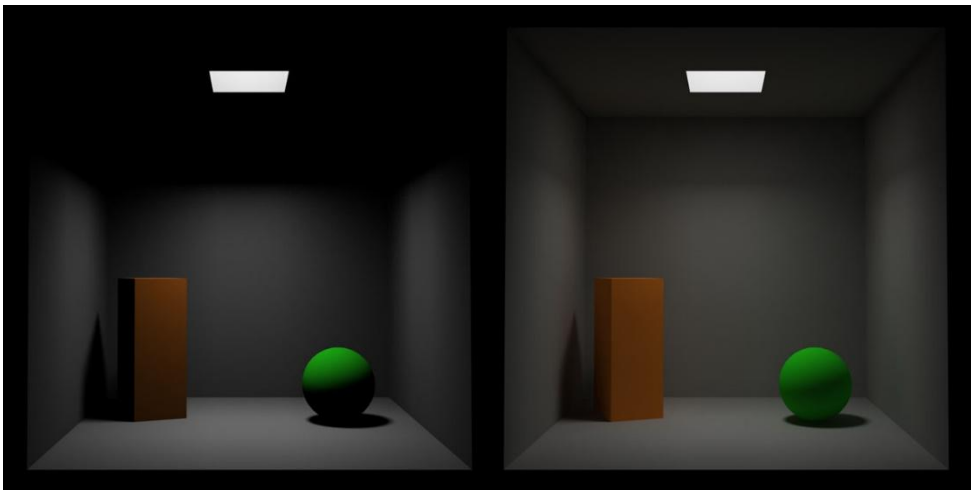


Fig. 14. 2. Ambient lighting.

Directional Light: a light that has a specific direction, but no location. It seems to come from infinitely far away source, like the sun. Surfaces facing the light are illuminated more than surfaces facing away, but their location doesn't matter. A Directional Light illuminates all objects in the scene, no matter where they are.

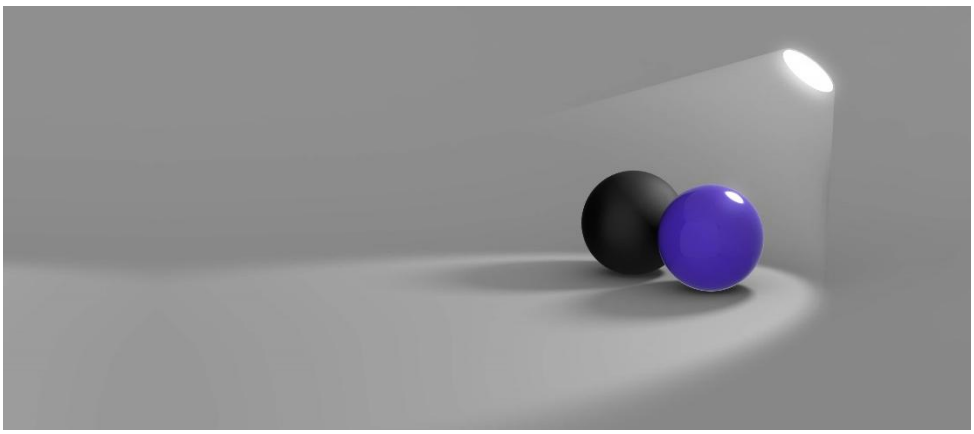


Fig. 14. 3. Directional lighting.

Point Light: a light that has a specific location and radiates equally out in all directions. Examples of point lights would be candles or bare lightbulbs. Surfaces close to the point light are brighter than those which are far away. Point lights have attenuation, which controls how quickly the light intensity drops off as you move away from it. Lights with high attenuation are much localised, while lights with low attenuation will spread farther.

Spotlight: a light with both location and direction. A spotlight sends out a cone of light defined by the spotlight angle, and illuminates only objects within that cone. Spotlights also have attenuation, as well as a parameter that controls whether the spot of light is sharply defined or has smooth edges. These 4 types of lights are listed in order of computational complexity; the more lights you have, the more work the computer has to do. Generally it's a good idea to use directional lights whenever possible, since they're the cheapest, and use point lights and spotlights sparingly.

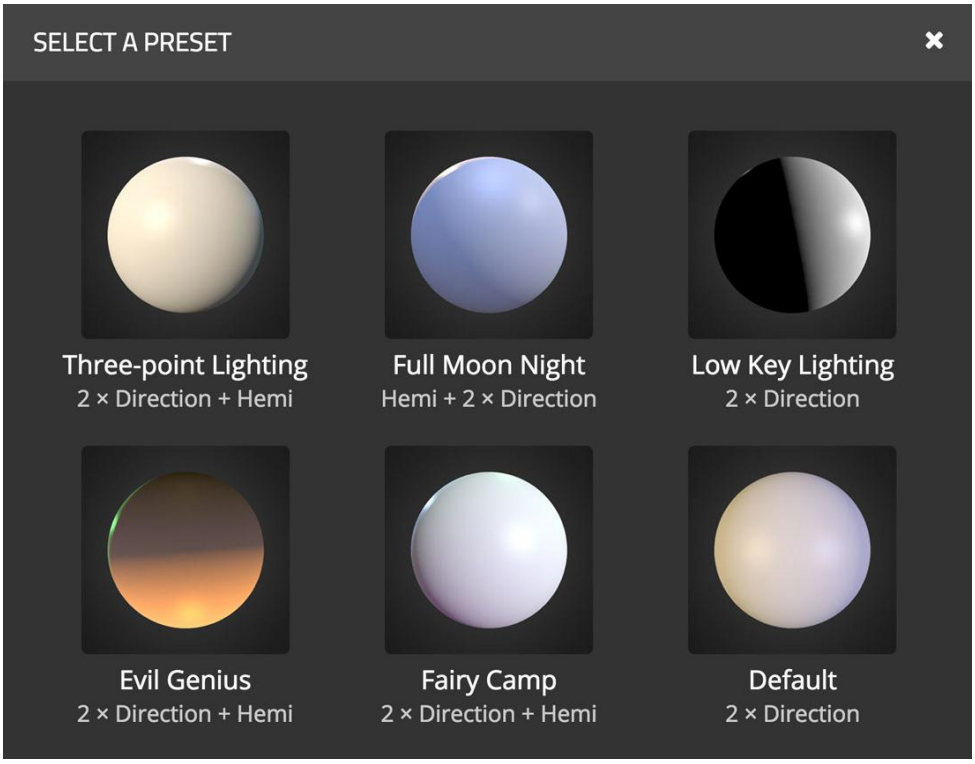


Fig. 14. 4. Presets of lighting.

Differences between 3D graphics lights and real lights

Shadows: simulated lights don't normally cast shadows. And, they also pass through solid objects - so a light inside a closed box would actually illuminate things outside the box as if the box were transparent. The shading on objects is only calculated based on the angle of the surface.

Bounce light: Simple lighting situations have a single light, called a key light, illuminating one side of an object. This creates strong shading and definition of the volume of the object. However, a 3D light will often make the contrast too great - the dark side of the object is completely black since no light is hitting it. In reality it would still be lit a little, just not as much as the brightly lit side, because of light bouncing around the room and hitting the dark side of the object. In real time 3D, bounce light is not calculated,

so you have to create it yourself. Either add a little ambient colour, or put a second, less bright directional light pointing the opposite direction to give a little light to the shadows.

Reflections: shiny objects will have specular highlights, but won't actually reflect the scene around them. Creating actual reflections is time consuming, requiring computationally intensive ray tracing. A shortcut for getting effects like chrome and water surfaces is to use Environment Maps.

Per-Vertex lighting: as a shortcut, light intensities on a surface are only actually calculated at each vertex, and the colour of each polygon is created by making a gradient between each of the vertices. This can make subtle lighting effects, particularly spotlights, not look right on objects with large polygons. One particularly weird side effect is that when a point light gets very close to a surface, the surface can still appear dark if it's in the middle of a polygon and therefore far away from the individual vertices!

Check your progress - 2
NOTE: Write your answers in the space given below and compare your answers with those given at the end of the unit.

Differentiate between point and spot lighting.
_____
_____
_____

14.8. PERCEPTION AND DEPTH OF FIELD

For many cameras, depth of field (DOF) is the distance between the nearest and farthest objects that are in acceptably sharp focus in an image. The depth of field can be calculated based on focal length, distance to subject, the acceptable circle of confusion size, and aperture. A particular depth of field may be chosen for technical or artistic purposes. Limitations of depth of field can sometimes be overcome with various techniques and equipment.

Change in focal length can affect the DOF. It is also controlled by the lens aperture diameter, which is usually specified as the f-number (the ratio of lens focal length to aperture diameter). Reducing the aperture diameter (increasing the f-number) increases the DOF. It is because only light travelling at shallower angles passes through the aperture.

Motion pictures make only limited use of this control, to produce a consistent image quality from shot to shot, cinematographers usually choose a single aperture setting for interiors and another for exteriors and adjust exposure through the use of camera filters or light levels. Aperture settings are adjusted more frequently in still photography, where variations in depth of field are used to produce a variety of special effects.

Fig. 14.5. Depth of field.

Aperture = f/1.4. DOF=0.8 cm

Aperture = f/4.0. DOF=2.2 cm

Aperture = f/22. DOF=12.4 cm

14.9 LET US SUM UP

A normal projection is one in which a three-dimensional object is projected onto two mutually perpendicular planes. Once a 3D model has been completed, its coordinates need to be converted to two dimensions to display the scene on a flat computer monitor or to print it on paper. This process of converting from 3D to 2D is called projection.In oblique projections, the parallel projection rays are not perpendicular to the viewing plane as with orthographic projection, but strike the projection plane at an angle other than ninety degrees. In 3D graphics, there are 4 basic types of simulated lights: ambient, directional, point and spot. For many cameras, depth of field (DOF) is the distance between the nearest and farthest objects that are in acceptably sharp focus in an image. Change in focal length can affect the DOF. It is also controlled by the lens aperture diameter, which is usually specified as the f-number.

14.10. UNIT-END EXERCISES

Identify the differences among the different key types of lighting in 3D graphics.

Outline the methods to manipulate depth of field in images.

14.11. ANSWERS TO CHECK YOUR PROGRESS

18. Define projection.
    Answer: Once a 3D model has been completed, its coordinates need to be converted to two dimensions to display the scene on a flat computer monitor or to print it on paper. This process of converting from 3D to 2D is called projection.
19. Differentiate between point and spot lighting.
    Answer: A point light has a specific location and radiates equally out in all directions. A spot light has both location and direction. A spotlight sends out a cone of light defined by the spotlight angle, and illuminates only objects within that cone.

14.12. SUGGESTED READINGS

- James D. Foley, Foley Dan Van, Andries Van Dam, Steven K. Feiner, John F. Hughes, J. Hughes, Edward Angel . Computer Graphics: Principles and Practice. Volume 12110 of Addison-Wesley systems programming series, Addison-Wesley Professional, 1996.
- Arnold Gallardo. 3D Lighting: History, Concepts, and Techniques. Charles River Media, 2000

DISTANCE EDUCATION

Model Question Paper

GRAPHIC COMMUNICATION

Time: 3 hours **Maximum: 75 marks**

Part- A (10 x 2 = 20 marks)

Answer all questions

1. Define graphic design.
2. Outline the purposes of a good design.
3. Write a brief on the layout stages.
4. Comment on modern media architecture.
5. Outline image-editing tools.
6. Name the popular page design software and tools.
7. Summarise the roles of a book cover.
8. Name the different types of logos.
9. Name and explain how the cursor input devices function.
10. Explain how there file formats differ: GIF, JPEG and TIFF

Part- B (5 x 5 = 25 marks)

Answer all questions choosing either (a) or (b)

11. a. Describe the components of design. (or)
    b. Write on the processes involved in graphic design.

12. a. Discuss the opportunities and challenges related to modern design. (or)
    b. Discuss the roles of master pages, templates and stylesheet in easing the work of a page layout artist.

13. a. Give a brief summary of the architectural components of newspapers. (or)
    b. Differentiate between the designs of hard and feature news pages.

14. a. What all should be considered before designing branding and promotional material? (or)
    b. Write on the increasing popularity of graphic pen tablets.

15. a. Explain the different types of surfaces in 3D graphic design. (or)
    b. Discuss depth of field and explain how it can be manipulated in images.

Part- C **(3 x 10 = 30 marks)**

Answer any 3 out of 5 questions

NOTES

16. Deliberate on the principles of design.
17. Define typography, describe its types and explain how choices are made for graphic design.
18. Explain the psychology and theories of colour.
19. Deliberate on the different types of lighting in 3D design space.
20. Comment on the roles and effects of computers and other smart devices on graphic design.