Dr. Babasaheb Ambedkar Open University

BCADES-102
Computer Graphics & Digital Illustration Tool

Block

1

CONCEPT OF GRAPHICS FORMATS AND COLOUR MODEL

Acknowledgment

Every attempt has been made to trace the copyright holders of material reproduced in this book. Should an infringement have occurred, we apologize for the same and will be pleased to make necessary correction/ amendment in future edition of this book.

The content is developed by taking reference of online and print publications that are mentioned in Bibliography. The content developed represents the breadth of research excellence in this multidisciplinary academic field. Some of the information, illustrations and examples are taken "as is" and as available in the references mentioned in Bibliography for academic purpose and better understanding by learner.'

ROLE OF SELF INSTRUCTIONAL MATERIAL IN DISTANCE LEARNING

The need to plan effective instruction is imperative for a successful distance teaching repertoire. This is due to the fact that the instructional designer, the tutor, the author (s) and the student are often separated by distance and may never meet in person. This is an increasingly common scenario in distance education instruction. As much as possible, teaching by distance should stimulate the student's intellectual involvement and contain all the necessary learning instructional activities that are capable of guiding the student through the course objectives. Therefore, the course / self-instructional material are completely equipped with everything that the syllabus prescribes.

To ensure effective instruction, a number of instructional design ideas are used and these help students to acquire knowledge, intellectual skills, motor skills and necessary attitudinal changes. In this respect, students' assessment and course evaluation are incorporated in the text.

The nature of instructional activities used in distance education self- instructional materials depends on the domain of learning that they reinforce in the text, that is, the cognitive, psychomotor and affective. These are further interpreted in the acquisition of knowledge, intellectual skills and motor skills. Students may be encouraged to gain, apply and communicate (orally or in writing) the knowledge acquired. Intellectual- skills objectives may be met by designing instructions that make use of students' prior knowledge and experiences in the discourse as the foundation on which newly acquired knowledge is built.

The provision of exercises in the form of assignments, projects and tutorial feedback is necessary. Instructional activities that teach motor skills need to be graphically demonstrated and the correct practices provided during tutorials. Instructional activities for inculcating change in attitude and behavior should create interest and demonstrate need and benefits gained by adopting the required change. Information on the adoption and procedures for practice of new attitudes may then be introduced.

Teaching and learning at a distance eliminates interactive communication cues, such as pauses, intonation and gestures, associated with the face-to-face method of teaching. This is particularly so with the exclusive use of print media. Instructional activities built into the instructional repertoire provide this missing interaction between the student and the teacher. Therefore, the use of instructional activities to affect better distance teaching is not optional, but mandatory.

Our team of successful writers and authors has tried to reduce this.

Divide and to bring this Self Instructional Material as the best teaching and communication tool. Instructional activities are varied in order to assess the different facets of the domains of learning.

Distance education teaching repertoire involves extensive use of self- instructional materials, be they print or otherwise. These materials are designed to achieve certain pre-determined learning outcomes, namely goals and objectives that are contained in an instructional plan. Since the teaching process is affected over a distance, there is need to ensure that students actively participate in their learning by performing specific tasks that help them to understand the relevant concepts. Therefore, a set of exercises is built into the teaching repertoire in order to link what students and tutors do in the framework of the course outline. These could be in the form of students' assignments, a research project or a science practical exercise. Examples of instructional activities in distance education are too numerous to list. Instructional activities, when used in this context, help to motivate students, guide and measure students' performance (continuous assessment)

PREFACE

We have put in lots of hard work to make this book as user-friendly as possible, but we have not sacrificed quality. Experts were involved in preparing the materials. However, concepts are explained in easy language for you. We have included many tables and examples for easy understanding.

We sincerely hope this book will help you in every way you expect.

All the best for your studies from our team!

COMPUTER GRAPHICS & ILLUSTRATOR

Block 1: CONCEPT OF GRAPHICS FORMATS AND COLOUR MODEL

Unit 1 TYPES OF COMPUTER GRAPHICS & GRAPHICS ATTRIBUTE

Learning Objectives:

- · Understanding Graphics concepts
- · Difference of Raster and vector graphics
- · Understanding Graphics attributes
- · Knowing the File Formats

UNIT 2 COLOR MODELS FOR COMPUTER GRAPHICS & COMPUTER GRAPHICS PROCESSING

Learning Objectives:

- · Learning various color modes
- · Understanding computer graphics processing

UNIT 3 GRAPHICS FILE FORMATS & GRAPHICS FILE COMPRESSION

Learning Objectives:

- · Here you will understand and know various file formats
- · Also understand graphics file compression

Block 2: WORKING WITH TOOLS AND MENU –

UNIT 1 CONCEPT OF GRAPHIC DESIGNING AND STARING OFF & PRINT MEDIA

Learning Objectives:

- · Here you will start off with illustrator
- · Understand the working environment of illustrator
- · Also learn the Tools
- · Concepts related to Print Media

UNIT 2 WORKING WITH MENUS

Learning Objectives:

Knowing the menus and their uses

- · How to use tools and make applications

Block 3: WORKING WITH DRAWING TOOLS AND TYPOGRA-PHY –

UNIT 1 WORKING WITH DRAWING TOOLS, COLORS, GRADIENTS

Learning Objective

- Grasping drawing skills using drawing tools
- Importance of colors.
- Achieving realistic output by using gradients

UNIT 2 WORKING WITH DRAWING TOOLS, SYMBOLS AND STUDYING TYPOGRAPHY

Learning Objective

- Drawing and shaping Tools
- Understand the usage of symbols
- How to bring symbols into application
- Typography

Block 4: PATHFINDER, FILTER, EFFECT AND PRINTING CONCPT

UNIT 1 WORKING WITH PATHFINDER, FILTERS AND EFFECT MENU

Learning Objective

- Understand pathfinder
- How to enhance artwork using filters
- How to effectively use effects menu

UNIT 2 EXPORT AND PDF TECHNOLOGY & PRINTING CONCPETS

Learning Objective

- How to Export
- Understanding the PDF technology
- Knowing the printing concepts

UNIT 1	TYPES OF COMPUTER GRAPHICS & GRAPHICS ATTRIBUTES

❖ **Learning Objectives:**

- Understanding Graphics concepts

- Difference of Raster and vector graphics

- Understanding Graphics attributes

- Knowing the File Formats

: Structure :

- Introduction

- Raster / Bitmapped Graphics

- Vector Graphics

- Comparison of Vector Graphics & Raster Graphics

- Meta File

- Resolution

- Pixel Dimensions

- Bit Depth

- Dynamic Range

- File Size

- Compression

- File Formats

Introduction

Purposeful

- It explains 'how'

- How order of the flow

- How you satisfy client interest

- How to convey

It explains ideas, concepts and function to specific audience such as age group, income levels, genders, etc.

Informational

Design should pass the true information to the clients.

Visual language

- Few point are very important like

- Negative / positive

- Front / back

- Thick / thin

- Opaque / transparent

- Depth / embossed

This thing adds the some visual effects to your design to give the realistic touch.

Process

It starts with the general information to the specific requirement.

Raster/Bitmapped Graphics

The alternative approach to storing an image is to define it is an array of dots or pixels. This is the equivalent of placing a fine rectangular grid over an image and then recording the contents of each cell in the grid. What is measured depends on the type of image and the degree of sophistication employed in the recording process.

In the case of a two-tone monochrome image (for example a black and white line-drawing, like a newspaper cartoon) all that is recorded is

whether the cell is predominantly black or white. The phrase predominantly black or white has to be used because in many causes the cell will cover a region where there is both black and white, and the cell has to be counted as one or the other.

Vector Graphics

Very small amount of memory available for that purpose. Images were treated as a series of lines, some straight, some curved. Because most of the lines that were needed could be represented by relatively simple mathematical equations it was possible to store this information very economically. For example, to specify a straight line all that is needed is knowledge of the positions of the two end-points of the line. For display purpose the line can then be reconstructed, knowing its geometrical properties. Similarly, for a circle all that is needed is knowledge of its center and its radius.

The display and printing devices used at the time were suitable only for this type of diagrammatic line image (for example, maps, engineering and architects, drawings and graphs).

Modern computer graphics systems, which are capable of displaying and printing realistic photographic quality images, needed the development of new technologies a process, which is now coming into its actual being.

Comparison of Vector Graphics & Raster Graphics

Raster graphics are made up of pixels. Vector graphics made up of lines and curves.

Raster graphics when scaled lose out the resolution Vector graphics when scaled do not lose out the resolution Raster graphics is used for screen and web applications Vector graphics are used for print media.

Meta File

Meta files contain information or specification of other file. The extension of meta file is WMF. You call it Window Meta File. This file contains sequence of graphics command and vector graphics commands. These files save space.

Resolution

Resolution is the number of pixels per inch, this decides the quality of the image you are working with. Best resolution for web is 72 PPI and for print media it starts with 300 PPI. Monitors have screen resolution of 72 pixels / inch. Which, closely matches the point sizes.

Pixel Dimensions

Though print packages also have a zoom facility, it works in a different way and produces very different results. Because the images are created and stored as the pixels, which make up the final displayed image, any magnified image shows little, if any, extra detail. All that can happen is that the pixels are shown larger than normal.

Bit Depth

In true graphics mode, life is more complicated and memory consuming, for here there is a requirement that every pixel shall be controlled independently of every other. The minimum condition is that each pixel should have one bit of memory associated with it, which would mean that every pixel would be one of two possible color states. These two states are usually black or white but could be any two colors. This is and One-bit-per-pixel' system. It means, for example that a character sized block of pixels needs 126 bits but it would mean that the programmer would have total control on the state of those bits. It would be possible; for example, to create any character, which was desired and not be re-

stricted to the 256 preprogrammed members of the normal 'system font'.

Dynamic Range

Dynamic range means starting from the minimum to the maximum of a value in a range. In graphics dynamic range refers to the lightest and the darkest area in an image.

File Size

Size of a file depends on the following factors:

- · Resolution
- · Colors
- · Format
- · Raster or Vector
- · Application of filters to it.
- · Compression codec used at the time of exporting

Compression

Compression is a technique of reducing the file size by compressing the data. In graphics you can compress your files depending on the compression codec being used. So you need to decide to have lossy compression or lossless compression.

File Formats

1 TIF

2 PNG

3 JPG

4 GIF

Summary

- • Raster / Bitmapped Graphics

- Vector Graphics

- Comparison of Vector Graphics & Raster Graphics

- Meta File

- Resolution

- Pixel Dimensions

- Bit Depth

- Dynamic Range

- File Size

- Compression

- File Formats

Self Assessment Test

Broad Questions –

1. What is Raster graphics?

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2. What is Vector graphics?

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3. Give difference between the two?

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4. Explain what a Meta file is.

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5. Give definition of various file formats in graphics

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Further Reading

http://www.sketchpad.net/basics1.htm

http://graphicssoft.about.com/od/aboutgraphics/a/bitmapvector.htm

http://www.morovia.com/education/vector-raster.asp

http://graphicdesign.about.com/

Assignment

Not applicable

Case Study

Not Applicable

<table>
<tr><td>UNIT
2</td><td>COLOR MODELS FOR COMPUTER
GRAPHICS & COMPUTER GRAPHICS
PROCESSING</td></tr>
</table>

❖ **Learning Objectives:**

- Learning various color modes

- Understanding computer graphics processing

: Structure :

- Introduction

- Gray Scale Color Mode

- Duotone Color Mode

- RGB Color Mode

- CMYK Color Mode

- LAB Color Mode

- Multichannel Color Mode

- Computer Graphics Processing

- Object Rendering

  Shading

  Color

  Ray Tracing

  Radiosity

Introduction

Here you shall be introduced to various color models and computer graphics processing. Color models will give you can understanding as to what colors have to be used when working with graphics, also it would give you can idea as which color model is best suited for various kinds of

applications. So whether you work with screen or paper color models are very important when you come across various file formats. Computer graphics processing is the fundamental knowledge that you should know when you work with various applications and various software. So let's see these features in detail.

2.2 Gray Scale Color Model

A grayscale image has a single black color channel and all the tones in the image are represented by 256 different intensities of black. 0 goes for black and 255 goes for white. In percentage 0% is white and 100% is black.

Duotone Color Model

Duotone mode creates monotone, duotone (two-color), tritone (three-color), and quad tone (four-color) grayscale images using two to four custom inks. This color model brings middle tones and highlights.

Indexed Color Model

You can get 8-bit image files with maximum 256 colors. When you convert to index color you get a color lookup table (CLUT) where each color has a number and this number is called index and this is how the colors in an image are stored.

RGB Color Model

Combination of Red, Green and Blue colors these are the Primary colors

CMYK Color Model

Combination of cyan, Magenta, Yellow and Black color. Secondary colors.

CMYK is used for print media for process colors.

Lab Color Model

Lab color model works how the human eye sees colors. This describes all colors as per the human eyes, means it shows all the colors that a human eye can perceive. Lab color model is device independent.

L – Lightness (0 to 100)

a – Component (green red Axis)

b – Component (blue yellow Axis)

Multichannel Color Model

This color model has 256 colors in each channel but gray shades. These images are used for specialized printing.

Computer Graphics Processing

This is measured in MHz or GHz. Higher the power better the graphics processing. Some people also call this as visual processing unit. These days GPU have high parallel structure, so the processing goes higher. GPU can be on the video card and it can even be on the motherboard. These days you get integrated GPUs.

Object Rendering

When you work with graphics especially in the 3d world the geometric objects are displayed on the screen in the form of locations, coordinates. You have planes which are known as polygons and these polygons join together and forms edges. Then the computer based upon the software display the object in a perspective view such that human eye can perceive it. So the wireframe is rendered into 3 dimensional objects by removing the hidden lines and only the edges visible to the viewer are drawn and rendered.

Shading

Shading is a technique that makes your 2d objects appear 3d and it enhances the visual ability to have a higher degree of how the shapes and positions are interpreted.

Color

Qualities of color
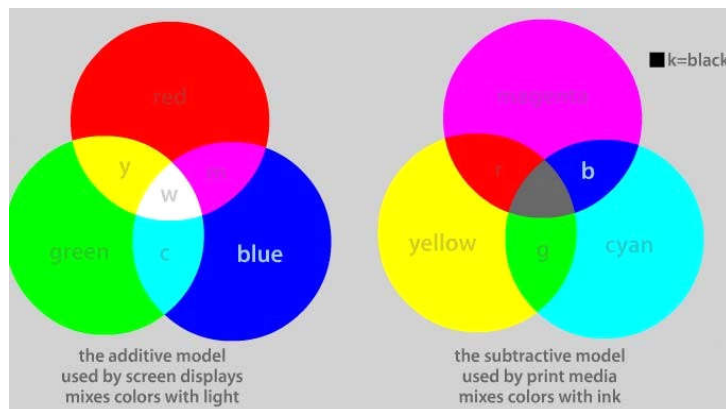
Additive and subtractive colors models

Fig 2.1: Additive & Subtractive Color Models

Basic color harmonies

· Warm colors

· Cool colors

· Contrast

· Compliment

· Tertiary colors

· Achromatic (gray shades)

· Monochromatic (working with specific colors with saturation and tints)

Color contrast

Depends upon hue, saturation and value of colors

Ray Tracing

Ray Tracing is a rendering process or an algorithm based on global. As the name says the light rays from the eye are traced back through an image plane on a surface. The ray is traced from eye or the camera backwards. It sets the pixel to a color value returned by the ray. If these rays interest the objects if any then they are tested. If the rays miss objects then that particular pixel are shaded as a background color. Ray tracing controls shadows, multiple specular reflections, and texture mapping

Radiosity

Radiosity is a technique that measures the energy that the light source emits when it reflects and gets diffused in a room. Then based upon this energy distribution Radiosity calculates the shading and renders soft shadows of the objects. Radiosity can work with realistic light sources so you really do not need artificial lights. Actual light sources work well. In combination with ray tracing it can even render image to snap of the scene. Radiosity data is 3 dimensional. So it's used a lot in 3d applications.

Summary

- Gray Scale Color Mode

- Duotone Color Mode

- RGB Color Mode

- CMYK Color Mode

- LAB Color Mode

- Multichannel Color Mode

- Computer Graphics Processing

- Object Rendering

- Shading

- Color

- Ray Tracing

- Radiosity

Self Assessment Test

Broad Questions –

1. What is Radiosity?

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2. What is Ray Tracing?

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3.   Name and explain the various color models?

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4.   What do you mean by object rendering?

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Further Reading

http://www.siggraph.org/education/materials/HyperGraph/color/
color0.htm

http://www.colorcube.com/articles/models/model.htm

http://www.sketchpad.net/basics4.htm

http://fuzzyphoton.tripod.com/whatisrt.htm

http://www.tech-faq.com/ray-tracing.shtml

http://wiki.answers.com/Q/What_is_radiosity

http://www.siggraph.org/education/materials/HyperGraph/radiosity/over-
view_ 1.htm

http://www.win.tue.nl/~wstahw/2IV40/7-radiosity.pdf

Assignment

Not Applicable

Case Study

Not Applicable

UNIT 3	GRAPHIC FILE FORMATS & GRAPHIC FILE COMPRESSION

❖ **Learning Objectives:**

- Here you will understand and know various file formats

- Also understand graphics file compression

: Structure :

- Introduction

- BMP

- EPS

- EPS DCS

- GIF

- JPG

- PICT

- PNG

- TIFF

- TIFF/IT

- Graphics File Compression

- JPEG

- JPEG2000

- HUFFMAN

- LZW

- RLE

3.1 Introduction

When you work with graphic software you need to have knowledge of

various file formats and also how various encoding formats work of graphics data compression. So here you will be taught with knowing various file formats and graphic compression format that are widely used for various kinds of files and applications.

BMP

BMP goes as bitmap format or bitmap image. This is a raster graphics format. Windows had introduced this and works on both PC and MAC.

EPS

EPS is encapsulated postscript. This describes how information will be appearing when taken print or when shown on the screen. You can include this in any postscript file.

EPS DCS

DCS means Desktop Color Separation. This is a collection of PES files. This format is used to exchange BMP images across the prepress applications. Also works for vector format and even works for text. Color separation can be generated quite fast as it contains EPS files. They follow Adobe specification. You have two versions 1.0 and the most latest 2.0. 1.0 version works well with QuarkXPress. Works with QuarkXPress earlier to 3.32 and PageMaker 6.5

GIF

This goes for Graphics Interchange File Format. This is very common and well known across WWW. It's a standard for graphics images. It uses 2d raster data and has binary encoding. You also have animated gifs. Animated gifs are multiple images in one single gif file.

JPG

JPG goes for Joint Photographic Experts Group. This is used for com-

pression. It has 16 million colors. This is used a lot for realistic images, does not work well with line art or clipart or cartoons or black and white. It is based on lossy compression. This is also one of the common file formats across WWW.

PICT

PICT supports 8 colors. This was developed by Apple 1984. These are having QucikDraw commands. They hold bitmap images and also object oriented images. Work on Mac.

3.8 PNG

PNG Stands for Portable Network Graphics. Used for image compression. This is widely used across WWW. This uses lossless compression. A PNG file gets 10-30% compressed as compared to GIF. So this format has almost replaced GIF file across internet.

TIFF

Goes for Tag Image File Format. Used widely for scanned images. Widely used in DTP applications, fax, image processing related to medical images and 3d applications.

TIFF/IT

Known as Tagged Image File Format/Image Technology contains only bitmap data. it does not go for vector and spot colors. They contain 256 colors of gray shades for each channel. It is used in applications like newspapers, magazines. This format is based on TIFF format. This is very flexible and used for printing applications.

Graphics File Compression

Graphics file compression is based upon 2 types of compressions. Lossy and Lossless

When you work with lossy compression the file size is much reduced as it removes less information and removes details and color changes and they are so minor that the human eye cannot make out

When you work with lossless compression the file size remain more as compared to lossy as it does not remove any information.

JPEG

JPEG goes for Joint Photographic Experts Group. This is used for compression. It has 16 million colors. This is used a lot for realistic images, does not work well with line art or clipart or cartoons or black and white. It is based on lossy compression. This is also one of the common file formats across WWW.

JPEG 2000

This is a new format also known as JP2, this is a new image encoding format. Supports 32 bit images, supports alpha channels. It can be lossy and lossless either of the two. Colors are saved as lossy and alpha channels are saved as lossless. Maintains opacity channels, metadata files, can read and write GML data, supports animation. This format depends on quality axis, resolution axis, color axis and position axis. Also stores multiple resolutions. Even if there is an error in decoding the image would be displayed irrespective so this makes this format robust. JPEG 2000 Provides high compression and better image quality as compared to existing standards. This work on wavelet transforms, these are the mathematical formulas to represent complex structures in the images. That's why the compressed file size is much less as compared to other standards.

HUFFMAN

This is also a coding format here the coding is based on the frequency of occurrence of a data or you can say pixel in image. This uses lower number of bits for frequently occurring data. Code book stores the codes. This code book and the encoded data should be supplied at the time of decoding.

LZW

This is known as Lempel Ziv. This was developed by A. Lempel and J. Ziv and later was modified by Welch. So the name goes as LZW. This is very simple and versatile so it's used a lot in the general data compression. It compresses text, tables, numbers, exes almost to half the size. LZW compression is used in GIF, TIFF, and Postscript.

RLE

RLE goes for Run-length encoding. This is a very simple encoding method. It replace the repeating sequence of data what you call as same byte pattern with number and a single value. It is based on simple principle of encoding data. This encoding format is used a lot in text, tables, charts, monochrome images also and images with continuous tone.

Summary

- BMP
- EPS
- EPS DCS
- GIF
- JPG
- PICT
- PNG

- TIFF

- TIFF/IT

- Graphics File Compression

- JPEG

- JPEG2000

- HUFFMAN

- LZW

- RLE

Self Assessment Test

Broad Questions –

1. What JPG?

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2. What is the use of GIF?

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3.   Explain RLE with example?

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4.   What is full form of LZW?

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5.   Explain JPEG 2000?

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Further Reading

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http://www.geocities.com/ee00224/btp2.html

http://marknelson.us/1989/10/01/lzw-data-compression/

http://staticweb.rasip.fer.hr/research/compress/algorithms_run-length_coding.htm

Assignment

Not Applicable

Case Study

Not Applicable

Block

2

WORKING WITH TOOLS AND MENU

UNIT 1 CONCEPT OF GRAPHIC DESIGNING AND STARING OFF & PRINT MEDIA

UNIT 2 WORKING WITH MENUS

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Our team of successful writers and authors has tried to reduce this.

Divide and to bring this Self Instructional Material as the best teaching and communication tool. Instructional activities are varied in order to assess the different facets of the domains of learning.

Distance education teaching repertoire involves extensive use of self- instructional materials, be they print or otherwise. These materials are designed to achieve certain pre-determined learning outcomes, namely goals and objectives that are contained in an instructional plan. Since the teaching process is affected over a distance, there is need to ensure that students actively participate in their learning by performing specific tasks that help them to understand the relevant concepts. Therefore, a set of exercises is built into the teaching repertoire in order to link what students and tutors do in the framework of the course outline. These could be in the form of students' assignments, a research project or a science practical exercise. Examples of instructional activities in distance education are too numerous to list. Instructional activities, when used in this context, help to motivate students, guide and measure students' performance (continuous assessment)

PREFACE

We have put in lots of hard work to make this book as user-friendly as possible, but we have not sacrificed quality. Experts were involved in preparing the materials. However, concepts are explained in easy language for you. We have included many tables and examples for easy understanding.

We sincerely hope this book will help you in every way you expect.

All the best for your studies from our team!

COMPUTER GRAPHICS & ILLUSTRATOR

Block 1: CONCEPT OF GRAPHICS FORMATS AND COLOUR MODEL

Unit 1 TYPES OF COMPUTER GRAPHICS & GRAPHICS ATTRIBUTE

Learning Objectives:

- · Understanding Graphics concepts
- · Difference of Raster and vector graphics
- · Understanding Graphics attributes
- · Knowing the File Formats

UNIT 2 COLOR MODELS FOR COMPUTER GRAPHICS & COMPUTER GRAPHICS PROCESSING

Learning Objectives:

- · Learning various color modes
- · Understanding computer graphics processing

UNIT 3 GRAPHICS FILE FORMATS & GRAPHICS FILE COMPRESSION

Learning Objectives:

- · Here you will understand and know various file formats
- · Also understand graphics file compression

Block 2: WORKING WITH TOOLS AND MENU –

UNIT 1 CONCEPT OF GRAPHIC DESIGNING AND STARING OFF & PRINT MEDIA

Learning Objectives:

- · Here you will start off with illustrator
- · Understand the working environment of illustrator
- · Also learn the Tools
- · Concepts related to Print Media

UNIT 2 WORKING WITH MENUS

Learning Objectives:

Knowing the menus and their uses

- · How to use tools and make applications

Block 3: WORKING WITH DRAWING TOOLS AND TYPOGRA-PHY –

UNIT 1 WORKING WITH DRAWING TOOLS, COLORS, GRADIENTS

Learning Objective

· Grasping drawing skills using drawing tools

· Importance of colors.

· Achieving realistic output by using gradients

UNIT 2 WORKING WITH DRAWING TOOLS, SYMBOLS AND STUDYING TYPOGRAPHY

Learning Objective

· Drawing and shaping Tools

· Understand the usage of symbols

· How to bring symbols into application

· Typography

Block 4: PATHFINDER, FILTER, EFFECT AND PRINTING CONCPT

UNIT 1 WORKING WITH PATHFINDER, FILTERS AND EFFECT MENU

Learning Objective

· Understand pathfinder

· How to enhance artwork using filters

· How to effectively use effects menu

UNIT 2 EXPORT AND PDF TECHNOLOGY & PRINTING CONCPETS

Learning Objective

· How to Export

· Understanding the PDF technology

· Knowing the printing concepts

❖ **Learning Objectives:**

- Here you will start off with illustrator

- Understand the working environment of illustrator

- Also learn the Tools

- Concepts related to Print Media

: Structure :

- Introduction

- Startup window

- Interface

- File Menu

- Tools

- Print Media

- What is print media?

- Various types of print media.

1.1 Introduction

This software is product from the company called ADOBE, which is an U.S. based company. This company has given outstanding software to the users for each and every field like graphics, animation and web.

Adobe illustrator is software for making good quality of illustration for your print and web media. It is very user-friendly software and with lots of creative option you can create a state – of – an – art graphics in illustrator. You can work with Illustrator in different ways. Whether you're creating graphics for the Web or high-resolution images for print, Illus-

trator delivers easy-to-use tools and editable effects to let you experiment at will—or revise as needed—and still meet your deadlines.

At the industry level this software is also used for the print industry. In an international market, illustrator is widely used. Using Illustrator with other Adobe software, you can take advantage of superior Adobe technologies such as cross- product color-management tools, file information, Smart Object technology, transparency tools, and a unified interface that makes it easy to put your expertise in one application to work in another.

Startup Screen

When you open ILLUSTRATOR CS, it gives welcome screen from which you can take the option of new file or the opening of the file.

Interface

When you click for the new file it ask for the option of customizing the page in different size and the color mode. As you open the new file, the interface of Illustrator looks like as below:
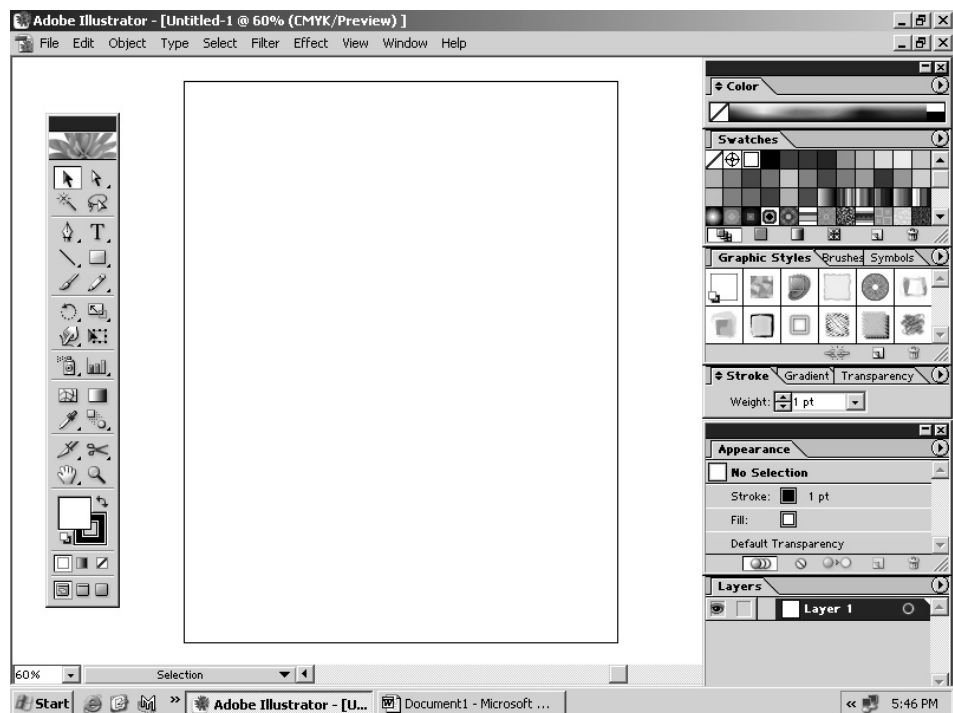
Fig 1.1: Illustrator Interface

1. Tool Box

2. Drawing Window

3. Panels by which you work with illustrator

4. Title Bar

5. Menu Bar

File Menu

- New File: This option gives you new file to work upon

- Open: Open the file of illustrator. (Format of illustrator is *.ai), apart from this there are many formats which can be opened like JPG, PDF, AutoCAD, TIFF, Targa, PNG, PSD, SVG, etc.

- Save and Save as: To save the file

- Revert: Takes the file, back to the last saved option.

Tools

Selection Tool: Main tool used to select & move the objects. To select multiple objects press shift.

Basic elements of the design are rectangle, polygons and ellipse, line. For this you have the fly-out menu for the basic tools.

Rectangle Tool: To draw the customize rectangle, we take the tool and click on the drawing board to get the property of the rectangle, where you can define the perfect size.
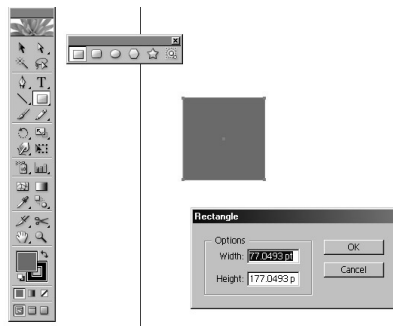
Fig 1.2: Rectangle Tool

Rounded Rectangle Tool: To draw rounded corner for rectangle, we take the tool and click on the drawing board to get the property of the rectangle, here you can define the perfect size and corner radius.
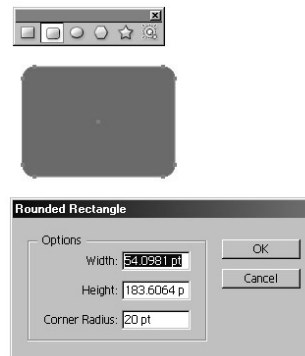
Fig 1.3: Rectangle Tool Options

Ellipse tool: To draw the ellipse or and perfect circle.
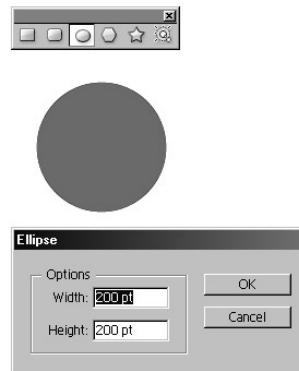
Fig 1.4: Ellipse Tool

Polygon Tool: To draw the polygon of desire sides
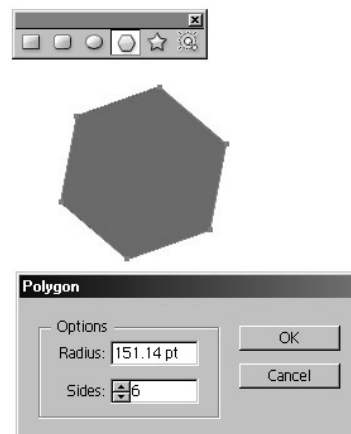
Fig 1.5: Polygon Tool

Star Tool: To draw the star with desire corners
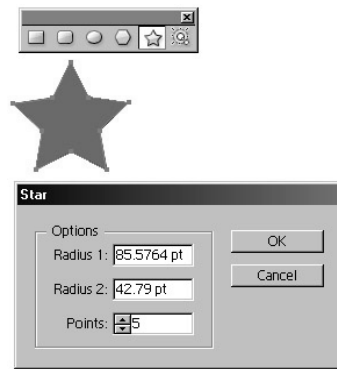
Fig 1.6: Star Tool

Lens Flare Tool: This is the tool, which gives you the effect of flare when you point your camera towards the sun. This effect is made with the vector graphics so it may give and illusion of the flare.
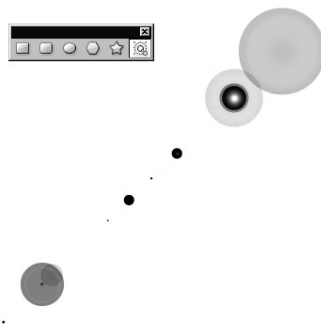
Fig 1.7: Lens Flare Tool

Note : With Shift button pressed, you get the object in fixed orientation like perfect square, circle, polygon, star, etc.

Line Tool: To draw the straight line press shift or else move the mouse freely. Any line that you draw will be defined with the stroke thickness given by the stroke panel.
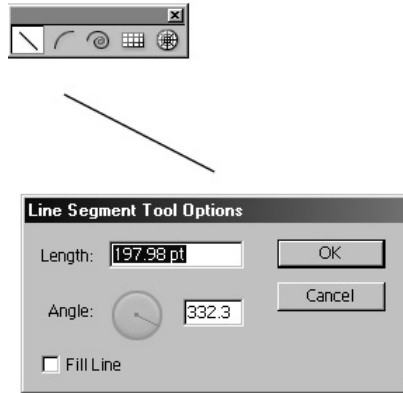
Fig 1.8: Line Tool

Arc Tool: To draw an open path display an arc we use this tool.
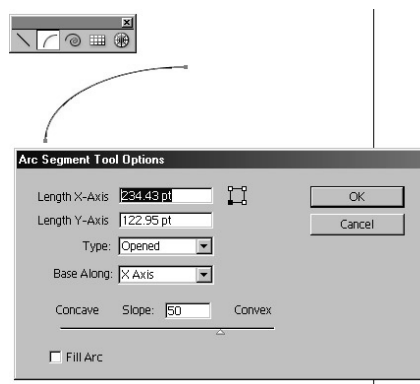
Fig 1.9: Arc Tool

Spiral Tool: This tool is used mainly for the designing where you want the circular grid. By altering the thickness and converting into object we can use for good design.
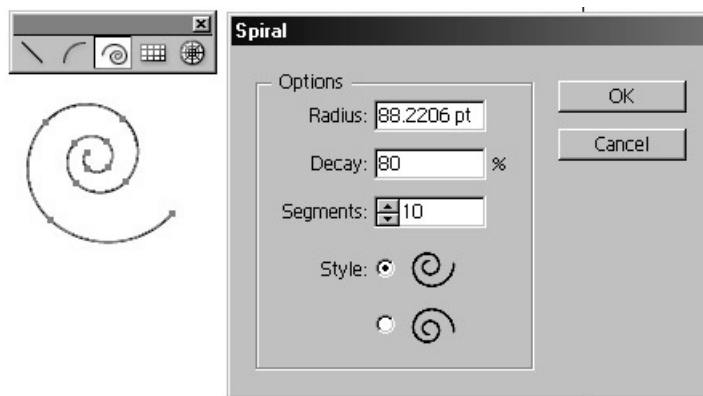
Fig 1.10: Spiral Tool

Rectangular Grid: To develop a tabular data for any technical values we can use this tool, as it develops column and rows while you draw.
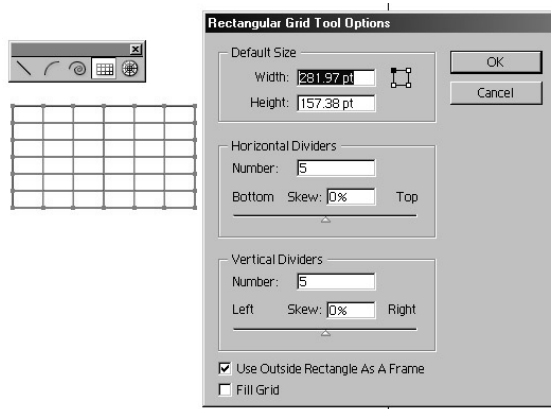
Fig 1.11: Rectangular Grid

Polar Grid: This gives a grid effect in the circular form.
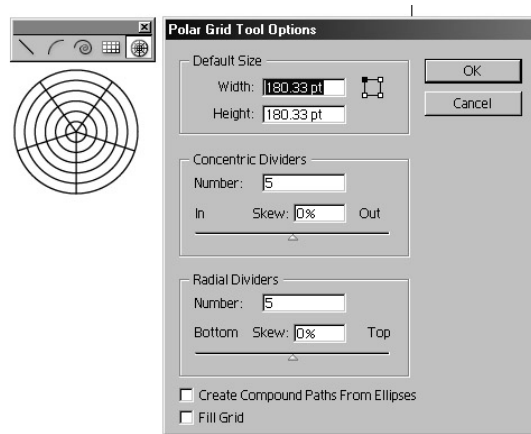
Fig 1.12: Polar Grid

Scale: Scale tool can increase or decrease the width or height or both with constraint proportion or without. Press shift and drag this does in equal proportion from the center.

Fig 1.13: Scale Tool

Rotate: Rotate tool is used to rotate object or elements by an angle, from 0 degrees to 360 degrees.
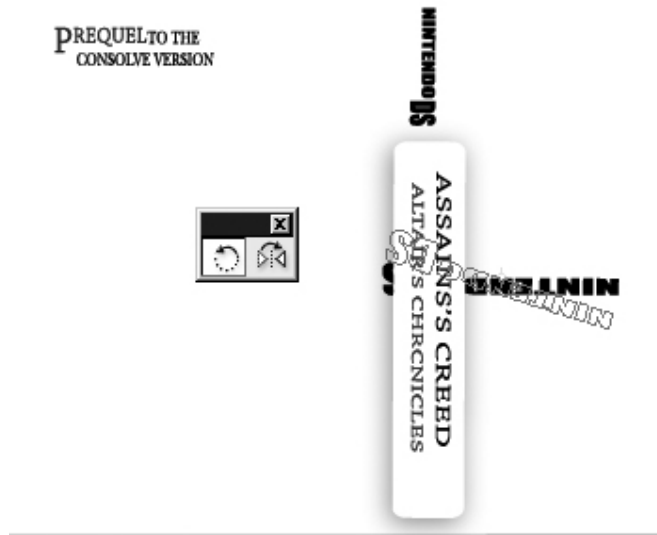

Fig 1.14: Rotate Tool

Shear: You can shear or skew the objects on horizontal or vertical axis. Shearing is based upon reference point. You can also lock the dimension of the object and you can also skew one or multiple objects.

Fig 1.15: Shear Tool

Reflect: This tool is also one of the transformation tools and you can reflect your objects. Select this tool and click to set the point of origin, then click and drag to reflect the object across an imaginary path. And then leave the click at the point you want your object to reflect.

Fig 1.16: Reflect Tool

Free Transform: This tool freely rotates the objects in any direction
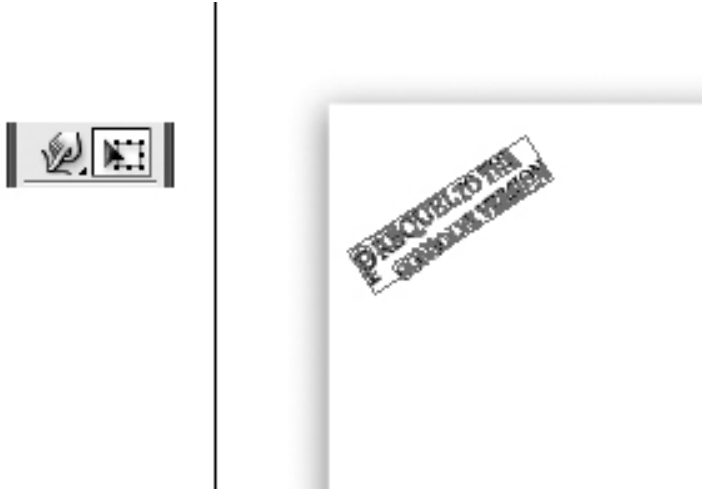and any angel you prefer.

Fig 1.17: Free Transform Tool

Eyedropper: Eye dropper tool copies various properties and attributes
from one object onto another.

Fig 1.18: Eyedropper

Live Paint Bucket: You can paint the planes and edges of the live group
objects with fill and stroke.

Fig 1.19: Live Paint Bucket

Reshape Tools: With this tool you can drag an anchor point on a path and still maintain the overall shape of the path.

Fig 1.20: Reshape Tool

1.6 Print Media

With the advent of TV channels, radio stations and the internet buzz there is a strong feeling that print media is dying, but is this true? For a minute give a thought, how much of the population today is hooked to the WWW, we can say only 10% of India's population and 8% population across the world uses internet. So what about the remaining 90%? There is a constant tug of war when it comes to which media to be used. The question depends on the adaptability of the audience for the various media. So as all the various media are going through this struggle and survival fight as to who stays each of the media is getting richer in content, context and appeal. But in the midst of this fight and we can always say that the power of written words have their own essence and impact. So let's study this ever green media *the print media*.

1.6.1 What is print media?

Print media has various kinds of forms like newspaper, magazine, comic books, ref keys, text books, story books, stationary, newsletters, periodicals, memos, forms, letters, brochures, handouts, bills, posters, hoardings, greeting cards and the list can go on.

1.6.3 Various types of print media?

You can convey your message through various ways in the print media depending upon the context, audience, content, length and depth of information. Let's have a look and know various print media more clear and precise.

Newspaper: This is the most popular media in today's world. Here the information goes in a tabular manner. News papers have their dimension and Column x cm. The cost of an ad or information depends upon the page it has to come and the section of the page the length of information. So you have to be very precise as the cost of space is too high if you are eager to give some information in the most prominent news papers of your city.

Magazines: Magazines are more specific to the topic and the target audience depends upon the group. So you can give your information based upon the topic of information and see which magazine would be suitable to carry that contextual information. Magazines go as per the product.

Newsletters: This is based upon the company. News letter is more like and A3 size news paper of a much higher quality of paper and color. Here the information goes to the reader like news and in the form of a letter. News letters can be made more interesting by having information pertaining to events, what's new, future and upcoming events, quiz's, puzzles, fun corner, appreciation, proverbs etc.

Posters: Posters are used for outdoor advertising. Posters have to be informative, eye catching, conceptual and carry all details pertaining to that product, company or event or the purpose of the poster. These posters are for masses that travel so posters can be put up road side, cross roads, public places, so you need to decide based upon the seriousness of your campaign as to where your company's poster has to be put up in the city. Posters carry various composition styles, also known as layouting.

Brochures: Brochures are mainly used by companies. So these are very information. Brochures are product specific, company specific, event

specific and information specific. These are used as in house applications as well as for clients.

Summary

- Startup window

- Interface

- File Menu

- Tools

- Print Media

Self Assessment Test

Broad Questions –

1. Name the tools you studied in this unit and give the application of each of them?

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2. Explain the print media?

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Further Reading

http://www.hemmy.net/2006/10/15/creative-advertisements-around-the-world/

http://adsoftheworld.com/

http://my.opera.com/bskushwah/albums/show.dml?id=595897

http://www.ogilvyindia.com/home/index.asp

http://www.ogilvy.com/

http://www.indiantelevision.com/industryresources/adagencies/top50_ada gencies.htm

http://advertising-agencies.suite101.com/article.cfm/worlds_best_advertising_agencies

http://jobfunctions.bnet.com/abstract.aspx?docid=50646

http://www.goodadmaking.com

Assignment

❖ **Redraw**

❖ How to Go About:

- You have to visualize a character of observe a character living around him and sketch that on paper.

- Then he has to draw that character using pen tool.

- You have to take care that the point define has to be proper and to the mark to get perfect smoothness in the path.

- Any path created, must be the closed object so that we can put the color as required.

- Object created has to be different like face, hands, legs, etc.

- Colors that we put in the object have to be logical that mean, it should look natural.

- When the drawing is complete than group the entire object.

❖ **Criteria:**

- Check the smoothness of the curves

- Precision of the shape of the object

- Good color combination

Case Study

Go out of your home and look around, do you see any human being that catches yours attention. Yes! This is the character that you have to study. Study the characteristics of this character in terms of attitude, behavior, expressions, body language, dressing sense, hair style, clothes, accessories etc. Write down these characteristics and then draw this character on sheet of paper and again go out and see the environment in which this character appears and then come back home and sketch this environment. If you wish you can even do live drawing of this character and the environment. Once you are done with paper work open illustrator and start producing the sketch and as well as the environment.

UNIT 2 — WORKING WITH MENUS

❖ **Learning Objectives:**

· Knowing the menus and their uses

· How to use tools and make applications

: Structure :

● Introduction

● Edit menu

● View menu

● Select Menu

● Magic wand tool

● Object Menu

2.1 Introduction

When you start off working with Illustrator apart from tools menus too play a major role in compositions and making of art work. Here you study edit menu that will give you features of cut, copy, paste, various paste options, and of course redo and undo. View menu in illustrator will facilitate you with how the software would view the objects; you get features of guide and grid that would help you for alignment, proportions and compositions. Select menu will give you features to select objects that will make your working with objects easy. Magic want tool in then another tool that you will study and finally you will study the object menu that will help you in locking and unlock objects, group and un grouping and showing and hiding the objects.

Edit Menu

- **Undo :** To reverse the commands those are used or to go backward for the steps that are done. There are unlimited undo in illustrator CS but according to the memory available from your system.

- **Redo :** Opposite of undo that is Redo which take the commands forward.

- **Cut, Copy and Paste :** Cutting and copying the object will keep in the memory of the system, which will be received by the paste command.

- **Paste in Front :** Will place the object right above, the entire object.

- **Paste in Back :** Will place the object right below, the entire object.

- **Clear :** Will delete the selected object.

View Menu

Outline: This option gives the wire frame of the object. It also toggles when you press for the next time is give back the original preview.
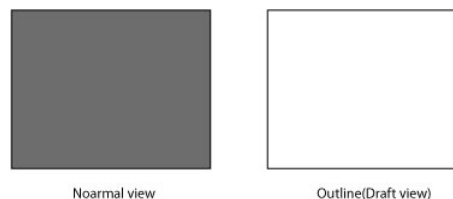
Noarmal view   Outline(Draft view)

Fig 2.1: Normal View & Outline View

Zoom in & out: This option is to view the graphic in bigger or smaller form according to the screen area. This helps in making the graphics more perfect while editing, aligning, etc. Zooming can be done with the help of zoom tool. When you work with a zoom level you require to move the area to go other part of the graphics, so for that you can move the screen with the help of hand tool, this procedure is called panning.

Fit in window will set the graphic according to the area of monitor, where as actual size display the complete size of the file whether it is fitting on the screen or not.

Show / Hide art board: This command hides or shows the boundary of the canvas in which are working.

Show / Hide Edges: When you select the object, than you fine the object

Notes selected with the blue boundary. By this command you can hide or show the boundary.

Show Bounding Box: The bounding box creates a temporary border around the selected object. You see an outline of the selection as you drag it. When you release the mouse button, the object snaps to the current border created by the bounding box, and you see the object's outline move.

Show transparency grid: You can display a checkered background grid to identify transparent areas of your artwork as you work on it.

Grids: Grids are line and dots which are used at the back of the artwork. This helps to edit the graphics for alignment and orientation. Using the snapping option you can work precisely.

Guides: These are temporary lines, which again helps in keeping the perfect alignment and orientation. Guides are vertical as well as horizontal which can be dragged from the ruler, which has to be on.

Snapping option: This option gives the sticky effect with the object. If snap for grid is on than the object will snap with grids or snap to guides is on than the object will snap to the guide as you take near them or start a object near them. Snap to object will give snapping between the objects.

New View / Edit view: Adobe illustrator helps you in customizing the different view of the file, according to the zoom level. This helps in direct working of the different zoom levels.

Group Selection Tool:

Fig 2.2: Group Selection Tool

This tool is used to select an individual object even though you have grouped the object with the group command.

Select Menu

- **All :** It selects all the objects

- De-select: To de-select the object

- Re-select: To repeat the last selection

- Inverse: To select all unselected objects, and deselect all selected objects

- Next object Above: To select the next object which is on above according to the object orientation in z-axis.

- Next object Below: To select the next object which is below according to the object orientation in z-axis.

- Same objects: It selects the objects of the same attributes, which are displayed in the sub menu. For this you can also use magic wand tool

- Object: To select the directional points and lines of an object or to select all the objects within a layer or the objects having the same effects on it.

- Save & load Selection: You can save, edit, and load selections for reuse in your artwork.

Magic Wand Tool

Fig 2.3: Magic Wand Tool

This tool is used to select multiple objects of the same category

Object Menu

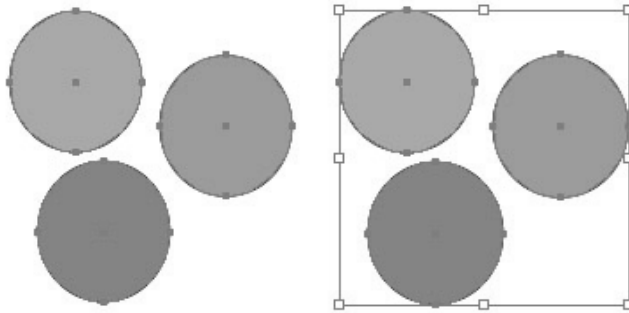**Group / Ungroup:** To treat the multiple objects as one object we use group. To break them apart again we use ungroup.

Fig 2.4: Ungrouped   & Grouped Objects

Lock & Unlock: Sometimes some objects gets disturbs while working with other, in this case you can lock the other object by lock option. You can unlock when required.

Hide / Show: To hide or show objects as per the requirement.

Summary

- Scale, Rotate, Shear, Reflect, Free Transform, Twist, Eyedropper, Bucket & Reshape tools

- Edit menu

- View menu

- Select Menu

- Magic wand tool

- Object Menu

Self Assessment Test

1. Explain Zoom tool?

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2. What is art board?

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3. Give uses of guides and grids.

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4. Give all features of select menu.

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5. Give uses of magic wand tool.

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Further Reading

http://www.tutorialhero.com/tag-80-Menus.php

http://my.safaribooksonline.com/0789724278/app05

http://www.vtc.com/products/AdobeIllustratorCS4/Interface/80686

Assignment

❖ **Enhance your Redraw**

- How to Go About:

- You have to visualize a character of observe a character living around him and sketch that on paper.

- Then he has to draw that character using pen tool.

- You have to take care that the point define has to be proper and to the mark to get perfect smoothness in the path.

- Any path created, must be the closed object so that we can put the color as required.

- Object created has to be different like face, hands, legs, etc.

- Colors that we put in the object have to be logical that mean, it should look natural.

- When the drawing is complete than group the entire object.

❖ Criteria:

- Check the smoothness of the curves

- Precision of the shape of the object

- Good color combination

Case Study

Go out of your home and look around, do you see any human being that catches yours attention. Yes! This is the character that you have to study. Study the characteristics of this character in terms of attitude, behavior, expressions, body language, dressing sense, hair style, clothes, accessories etc. Write down these characteristics and then draw this character on sheet of paper and again go out and see the environment in which this character appears and then come back home and sketch this environment. If you wish you can even do live drawing of this character and the environment. Once you are done with paper work open illustrator and start producing the sketch and as well as the environment.

Block

3

WORKING WITH DRAWING TOOLS AND TYPOGRAPHY

Acknowledgment

Every attempt has been made to trace the copyright holders of material reproduced in this book. Should an infringement have occurred, we apologize for the same and will be pleased to make necessary correction/amendment in future edition of this book.

The content is developed by taking reference of online and print publications that are mentioned in Bibliography. The content developed represents the breadth of research excellence in this multidisciplinary academic field. Some of the information, illustrations and examples are taken "as is" and as available in the references mentioned in Bibliography for academic purpose and better understanding by learner.'

ROLE OF SELF INSTRUCTIONAL MATERIAL IN DISTANCE LEARNING

The need to plan effective instruction is imperative for a successful distance teaching repertoire. This is due to the fact that the instructional designer, the tutor, the author (s) and the student are often separated by distance and may never meet in person. This is an increasingly common scenario in distance education instruction. As much as possible, teaching by distance should stimulate the student's intellectual involvement and contain all the necessary learning instructional activities that are capable of guiding the student through the course objectives. Therefore, the course / self-instructional material are completely equipped with everything that the syllabus prescribes.

To ensure effective instruction, a number of instructional design ideas are used and these help students to acquire knowledge, intellectual skills, motor skills and necessary attitudinal changes. In this respect, students' assessment and course evaluation are incorporated in the text.

The nature of instructional activities used in distance education self- instructional materials depends on the domain of learning that they reinforce in the text, that is, the cognitive, psychomotor and affective. These are further interpreted in the acquisition of knowledge, intellectual skills and motor skills. Students may be encouraged to gain, apply and communicate (orally or in writing) the knowledge acquired. Intellectual- skills objectives may be met by designing instructions that make use of students' prior knowledge and experiences in the discourse as the foundation on which newly acquired knowledge is built.

The provision of exercises in the form of assignments, projects and tutorial feedback is necessary. Instructional activities that teach motor skills need to be graphically demonstrated and the correct practices provided during tutorials. Instructional activities for inculcating change in attitude and behavior should create interest and demonstrate need and benefits gained by adopting the required change. Information on the adoption and procedures for practice of new attitudes may then be introduced.

Teaching and learning at a distance eliminates interactive communication cues, such as pauses, intonation and gestures, associated with the face-to-face method of teaching. This is particularly so with the exclusive use of print media. Instructional activities built into the instructional repertoire provide this missing interaction between the student and the teacher. Therefore, the use of instructional activities to affect better distance teaching is not optional, but mandatory.

Our team of successful writers and authors has tried to reduce this.

Divide and to bring this Self Instructional Material as the best teaching and communication tool. Instructional activities are varied in order to assess the different facets of the domains of learning.

Distance education teaching repertoire involves extensive use of self- instructional materials, be they print or otherwise. These materials are designed to achieve certain pre-determined learning outcomes, namely goals and objectives that are contained in an instructional plan. Since the teaching process is affected over a distance, there is need to ensure that students actively participate in their learning by performing specific tasks that help them to understand the relevant concepts. Therefore, a set of exercises is built into the teaching repertoire in order to link what students and tutors do in the framework of the course outline. These could be in the form of students' assignments, a research project or a science practical exercise. Examples of instructional activities in distance education are too numerous to list. Instructional activities, when used in this context, help to motivate students, guide and measure students' performance (continuous assessment)

PREFACE

We have put in lots of hard work to make this book as user-friendly as possible, but we have not sacrificed quality. Experts were involved in preparing the materials. However, concepts are explained in easy language for you. We have included many tables and examples for easy understanding.

We sincerely hope this book will help you in every way you expect.

All the best for your studies from our team!

COMPUTER GRAPHICS & ILLUSTRATOR

Block 1: CONCEPT OF GRAPHICS FORMATS AND COLOUR MODEL

Unit 1 TYPES OF COMPUTER GRAPHICS & GRAPHICS ATTRIBUTE

Learning Objectives:

- · Understanding Graphics concepts
- · Difference of Raster and vector graphics
- · Understanding Graphics attributes
- · Knowing the File Formats

UNIT 2 COLOR MODELS FOR COMPUTER GRAPHICS & COMPUTER GRAPHICS PROCESSING

Learning Objectives:

- · Learning various color modes
- · Understanding computer graphics processing

UNIT 3 GRAPHICS FILE FORMATS & GRAPHICS FILE COMPRESSION

Learning Objectives:

- · Here you will understand and know various file formats
- · Also understand graphics file compression

Block 2: WORKING WITH TOOLS AND MENU –

UNIT 1 CONCEPT OF GRAPHIC DESIGNING AND STARING OFF & PRINT MEDIA

Learning Objectives:

- · Here you will start off with illustrator
- · Understand the working environment of illustrator
- · Also learn the Tools
- · Concepts related to Print Media

UNIT 2 WORKING WITH MENUS

Learning Objectives:

Knowing the menus and their uses

- · How to use tools and make applications

Block 3: WORKING WITH DRAWING TOOLS AND TYPOGRA-PHY –

UNIT 1 WORKING WITH DRAWING TOOLS, COLORS, GRADI-ENTS

Learning Objective

- · Grasping drawing skills using drawing tools
- · Importance of colors.
- · Achieving realistic output by using gradients

UNIT 2 WORKING WITH DRAWING TOOLS, SYMBOLS AND STUDYING TYPOGRAPHY

Learning Objective

- · Drawing and shaping Tools
- · Understand the usage of symbols
- · How to bring symbols into application
- · Typography

Block 4: PATHFINDER, FILTER, EFFECT AND PRINTING CONCPT

UNIT 1 WORKING WITH PATHFINDER, FILTERS AND EFFECT MENU

Learning Objective

- · Understand pathfinder
- · How to enhance artwork using filters
- · How to effectively use effects menu

UNIT 2 EXPORT AND PDF TECHNOLOGY & PRINTING CONCPETS

Learning Objective

- · How to Export
- · Understanding the PDF technology
- · Knowing the printing concepts

UNIT 1 — WORKING WITH DRAWING TOOLS, COLORS, GRADIENTS

❖ **Learning Objectives:**

● Grasping drawing skills using drawing tools

● Importance of colors.

● Achieving realistic output by using gradients

: Structure :

● Introduction

● Fills & Outlines

● Drawing & Shaping Tools

● Graphs

Introduction

For any kind of art work or composition, colors play a major role. Colors add feel and expression and bring your work to life. Here you shall study fills and outlines, fills and outlines in illustrator will give you an idea about how to work with filling colors in the objects and enhance them through outlines or strokes. Through gradients you can make your 2d object look 3d and make them look realistic. Drawing is another key feature or application that is required by any artist, here in illustrator drawing is made easy for you using the pen tool. Pen tool is the most comfortable and precise tool for drawing and that to you custom drawing. So let's start off.

Fills & Outlines

You can fill the object with variety of option like normal colors, combination of colors, patterns and styles.

Use the Fill and Stroke boxes in the toolbox to select an object's fill and stroke, to swap the fill color with the stroke color, and to return the fill and stroke to their default colors. Below the Fill and Stroke boxes are the Color, Gradient, and none buttons. Use these buttons to change the selected fill or stroke to a color, to change a fill to a gradient, or to remove the fill or stroke from the selected object.
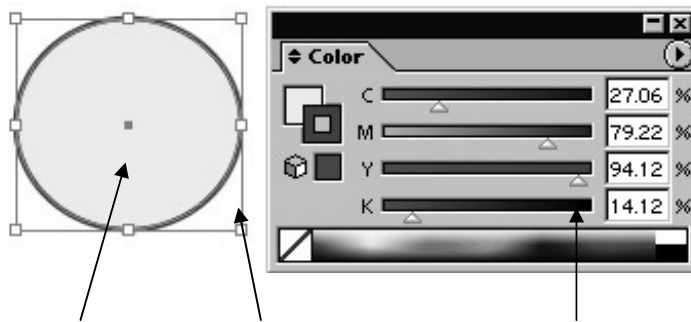
Fig 1.1: Fill Color   Outline Color   Color Slider Panel

Gradients: Gradients are combination of two or more colors that give the objects very realistic look.
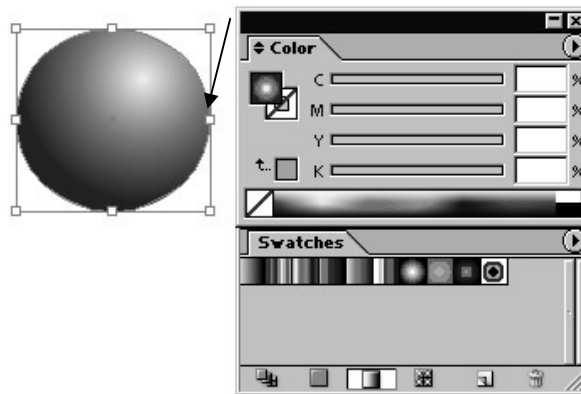
Fig 1.2: Gradient Colors

Swatch Panel: You use the Swatches palette to control all document colors, gradients, patterns, and tints. You can also use different swatch by open swatch library, where you find different types of colors with various uses.
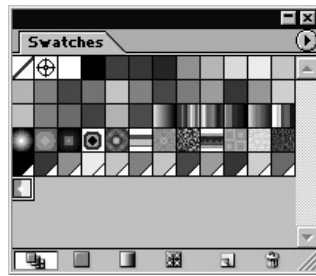
Fig 1.3: Swatch Panel

Symbol Panel: This panel stores all the objects, which can be used by the symbols sprayer tool. You can also create your own customize symbol. Symbols that you create and store in the Symbols palette are associated only with the current file.
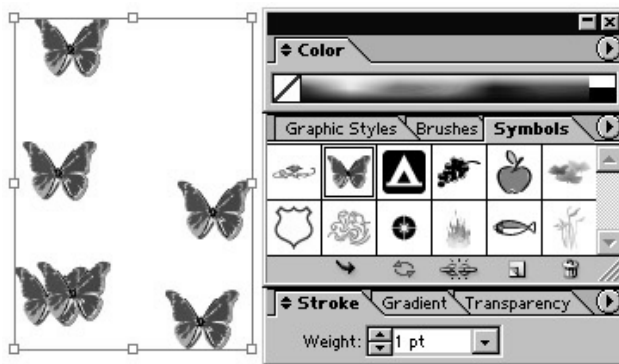

Fig 1.4: Symbol Created By Symbol Sprayer

Styles: You can apply graphic styles to objects, groups, and layers. (You can't apply graphic styles to type objects that use outline-protected fonts or bitmap fonts.) When you apply a graphic style, the new graphic style overrides any graphic style that was previously applied to the item.
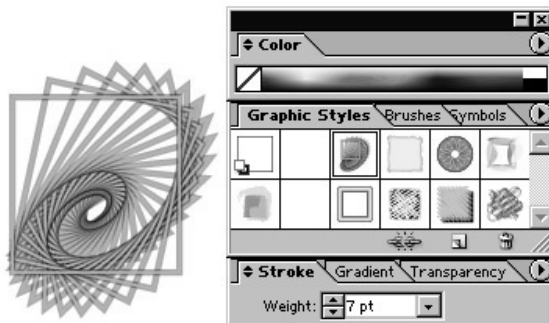
Fig 1.5: Different Style For Good Effects

Brush: Brushes are the preset objects, which can be used to draw the strokes with designs. Working with the paintbrush tool can use these brushes.

Paint Brush Tool:

This tool is used to draw the freeform paths and also apply brush both together. The number of anchor points set down is determined by the length and complexity of the path and by tolerance settings in the Paint-brush Tool Preferences dialog box.
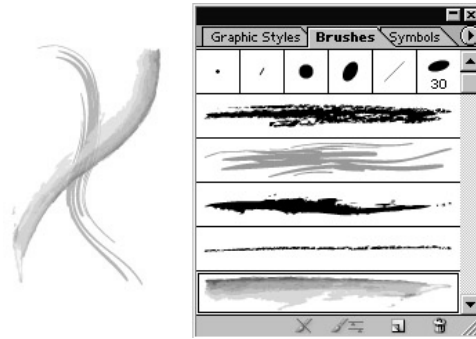

Fig 1.6: Paint Brush Tool Using Brush Libraries

Mesh Tool : This tool creates the mesh line vertically and horizontally on the object to provide the easy way to manipulate with the colors. At the intersection of the line you get the anchor point, which can be, edit easily. It helps to change the intensity of a color shift, or change the extent of a colored area on the object.

The same option with the desire way to work is given the object menu with the title called Create Gradient Mesh where you can specify the row and column of the mesh.
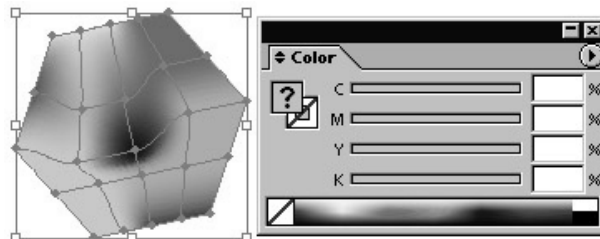

Fig 1.7: Object Treated With Mesh Tool

Define Pattern (Edit Menu): This option helps to create the pattern as per your requirement, which can be use for fill option. To create the pattern create the desire objects and select all the object from which

4

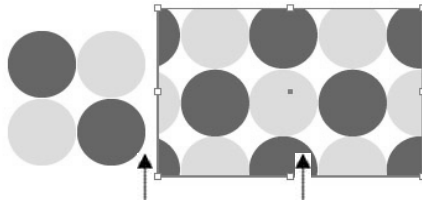you want to create the pattern & give the command to define the pattern.

Fig 1.8: Pattern   Object Applied With Pattern

To draw the customize shape we always use the different drawing tools.

But the main tool to draw the customize object is the pen tool. To create

the object with the pen tool you need to do the following steps:

· First imagine the shape to be created

· Click the point to start with

· Start defining the points according to shape desired

· And to complete the object closes the first and last point.

You can also click on the previous point to remove the tangent handle, by

pressing the ALT button so as to get the coming curve as per the require-

ment.

Drawing & Shaping Tools

Pen Tool: It is a main tool that helps to define the point for you curves
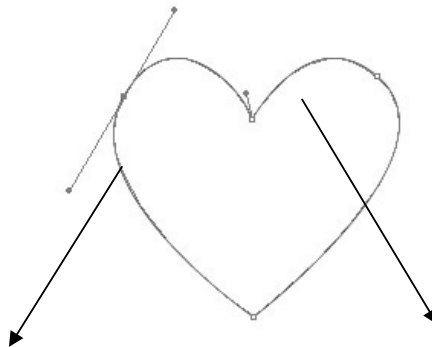
of the desire shape.

Fig 1.9: Tangents Handles One Side Tangent Handel Remove By

Pressing ALT

Add Anchor Point: After drawing the shape, if you need to add the point to define the proper shape you can used add anchor point, that will add the anchor point where it is clicked on the path.

Delete Anchor Point: This tool is used to remove unnecessary points from the path that has been drawn.

Convert Anchor Point: This tool is used to convert the line into curve and vice versa. Click on the point on which you want to convert. So it gives the tangent handle to the point to develop the curve for the corners.

Direct Selection Tool: This tool helps to give the final touches to the objects, which are created by the pen tool. It helps to adjust the tangent handle to define the proper curve. By pressing ALT button you can also move the single tangent handle.

Fig 1.10: Direct Selection Tool

Lasso Tool: Lasso tool helps you to select the point abruptly. It can be of the same object or different object.
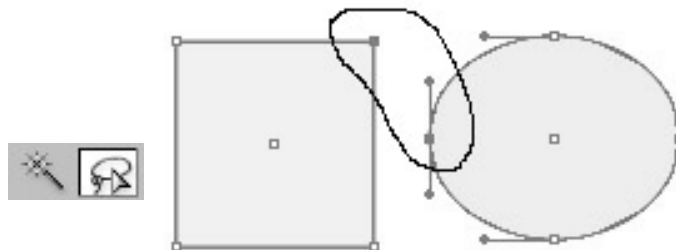

Fig 1.11: Lasso Tool

Measure Tool: This tool helps to get the dimension of any object and also you can fine the angle if the object is tilted. It opens the info panel automatically when you start working with measure tool.
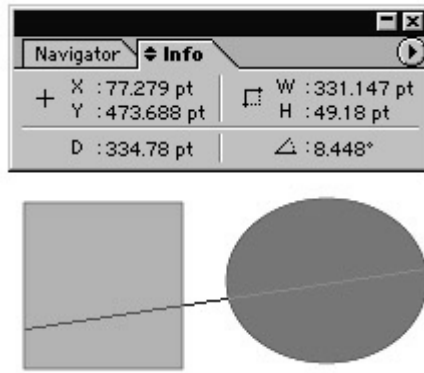
Fig 1.12: Measure Tool

Scissor Tool: This tool is used to cut the object from path to path. It cuts the object in a straight line.

Fig 1.13: Original Object Cut Object

Knife tool: This tool is also used to cut the object but in the free form. You can also extract the object from within also. While you cut the object it develops the node as per you path of the knife tool.
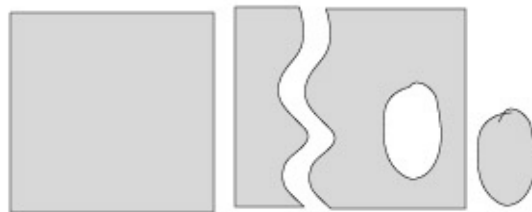

Fig 1.14: Original Object Cut With The Knife Tool

Graphs

Graph tool: This option is used to define the graph as the value inserted in the option box.
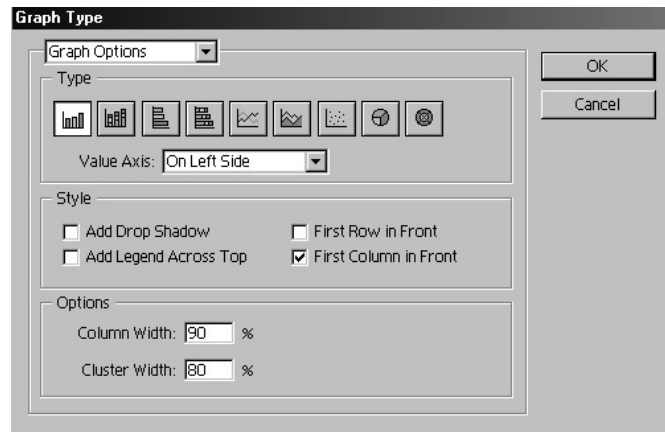
Fig 1.15: Graphs

Different types of graphs are as follows:

- Column Graph

- Stacked Column Graph

- Bar Graph

- Stacked Bar Graph

- Line Graph

- Area Graph

- Scatter Graph

- Pie Graph

- Radar Graph

When you draw an area for the graph you get a panel where you can insert the value of the graph, which has to be input.
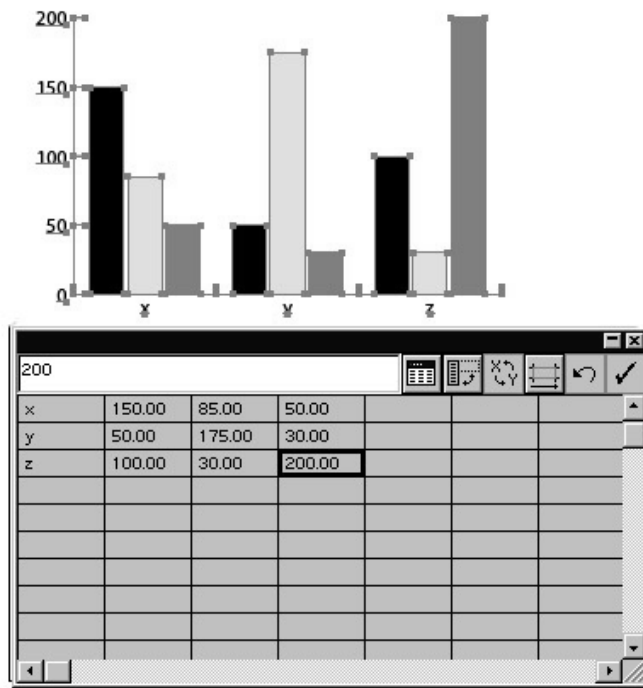
Fig 1.16: Graph & Its Data Sheet

- You can change the style of the graph to any one as describe above by the option called type in the object menu \ graph\ type:

- You can change the object of the graph (instead of bar you can place some own object of your own) by the option called column in the object menu \ graph \ column:

- To change the data of the graph it can be edited by the option Data in the object menu \ graph \ Data:

Blend Tool: One of the simplest uses for blending is to create and distribute shapes evenly between two objects.
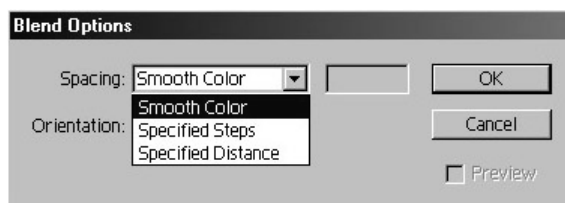

Fig 1.17: Blend Options

- Smooth Color to let Illustrator auto calculate the number of steps for the blends. If objects are filled or stroked with different colors, the steps are calculated to provide the optimum number of steps

for a smooth color transition. If the objects contain identical colors, or if they contain gradients or patterns, the number of steps is based on the longest distance between the bounding box edges of the two objects.

Fig 1.18: Smooth Color Option

- Specified Steps to control the number of steps between the start and end of the blend.

- Specified Distance to control the distance between the steps in the blend. The distance specified is measured from the edge of one object to the corresponding edge on the next object.

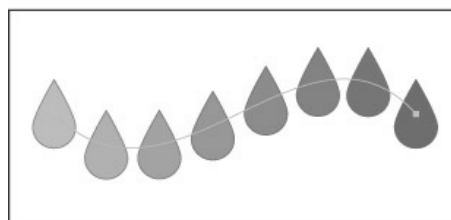- Align to Page to orient the blend perpendicular to the x - axis of the page.

Fig 1.19: Align To Page

- Align to Path to orient the blend perpendicular to the path.
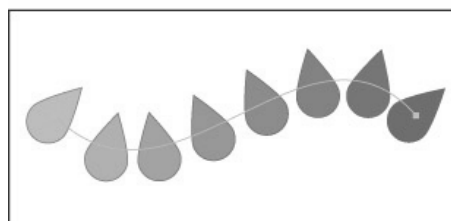
Fig 1.20: Align To Path

Replace spine: It helps to define the path of the blend. Create the path as

require, select the blend and the path that you have created and give the option replace spine to get the blend according to the path.

Reverse spine : It interchanges the node of the path to reverse the direction of the blend effect.

Reverse front to back : It changes the orientation of the object of the start and end objects from front to back.

Expand : If you want to break part the blend, you can use the command expand. Then you need to ungroup the object to get and individual objects.

Auto Trace tool : Guided by the boundary between differently colored/ shaded areas, the Auto Trace tool traces any bitmap image shape automatically, creating a vector object filled with the current fill and stroke.
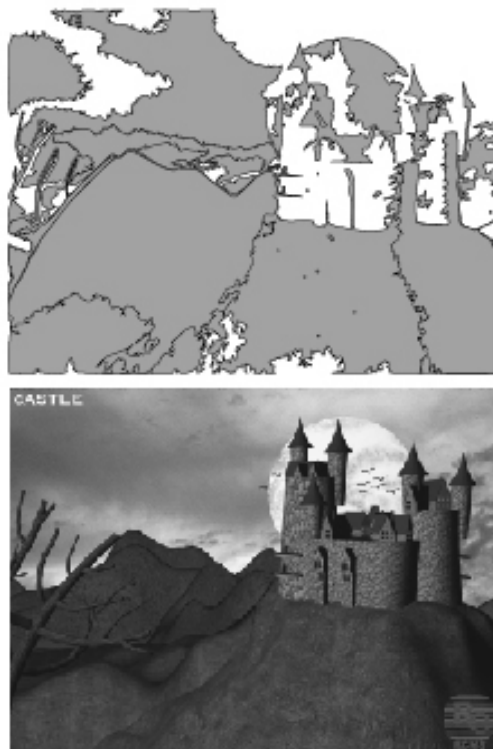
Fig 1.21: Auto Trace Result

Summary

- Fills & Outlines

- Drawing & Shaping Tools

- Graphs

Self Assessment Test

1. How do gradients give a realistic look?

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2. Give benefits of symbols?

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3. What is the use of swatches?

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4. How does mesh took work?

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5. Give all features and options of pen tool.

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6.   Name all the types of graphs

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Further Reading

http://school.tatoland.com/illustrator/aitools.html

http://www.noupe.com/illustrator/30-adobe-illustrator-tutorials-matering- your-tools-and-options.html

http://www.bittbox.com/illustrator/fun-with-illustrators-lesser-known-yet- powerful-tools/

http://www.coe.fau.edu/abinder/handouts/Itools.htm

http://www.adobe.com/education/webtech/CS/unit_graphics1/
icb_color.ht m

http://www.ps.missouri.edu/PS2/support/TutorialFolder/ColorTutorial/
Col orTutorial8.html

http://www.pixel2life.com/tutorials/adobe_illustrator/color_application/

http://creativebits.org/illustrator/transparent_gradient_in_illustrator

http://www.khulsey.com/adobe_illustrator_gradient_mesh.html

Assignment

❖ **Color your Redraw & create environment**

❖ How to Go About:

- You have to visualize a character of observe a character living around him and sketch that on paper.

- Then he has to draw that character using pen tool.

- You have to take care that the point define has to be proper and to the mark to get perfect smoothness in the path.

- Any path created, must be the closed object so that we can put the color as required.

- Object created has to be different like face, hands, legs, etc.

- Colors that we put in the object have to be logical that mean, it should look natural.

- When the drawing is complete than group the entire object.

❖ Criteria:

- Check the smoothness of the curves

- Precision of the shape of the object

- Good color combination

Case Study

Go out of your home and look around, do you see any human being that catches yours attention. Yes! This is the character that you have to study. Study the characteristics of this character in terms of attitude, behavior, expressions, body language, dressing sense, hair style, clothes, accessories etc. Write down these characteristics and then draw this character on sheet of paper and again go out and see the environment in which this character appears and then come back home and sketch this environment. If you wish you can even do live drawing of this character and the environment. Once you are done with paper work open illustrator and start producing the sketch and as well as the environment.

❖ **Learning Objectives:**

- Drawing and shaping Tools

- Understand the usage of symbols

- How to bring symbols into application

- Typography

: Structure :

- Introduction

- Drawing & Shaping Tools

- Working with symbols

- Type Tool & Type Menu

2.1 Introduction

In this unit you will be taught with drawing tools further, paint brush, pencil & eraser are the basic tools that help you in making drawing easy for you. In illustrator you have a very powerful feature where you work with symbols. Symbols are so interesting that they enhance and just make your art work look brilliant without doing much of an effort. Symbols have powerful properties and further tools that you can use them and symbols definitely save your time as you don't really have to draw over and over again you can save your drawn and created objects as symbols in library and reuse them.

The next important topic that you will study is typography. This talks about the art of text. Text plays a major role in any of your composi- tions. So when it comes to indoor, outdoor campaign, brand campaign, product campaign or event management or just making a greeting card

or a brochure or pick an media form print or internet , text as the a vital role in communication. Typography involves working with text, fonts, size, face, style, compositions, paragraphs, heading, sub headings, and lot many parts of writing. So let's study how illustrator provides you to use this most powerful subject to work with.

Drawing & Shaping Tools

Paint Brush Tool: This tool is used to draw the free form object. The main helps that you get is that you can choose the variety of the brush available in the brush panel. The path drawn by the brush tool has the anchor point, which can be edited later on when the path is completed.

Fig 2.1: Path Drawn With Paintbrush

Pencil Tool: The Pencil tool lets you draw open and closed paths as if you were drawing with a pencil on paper. It is most useful for fast sketching or creating a hand-drawn look. Once you draw a path, you can immediately change it if needed.
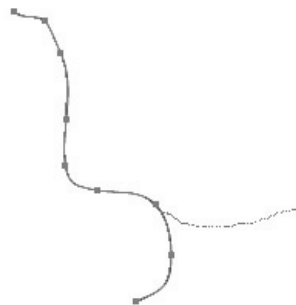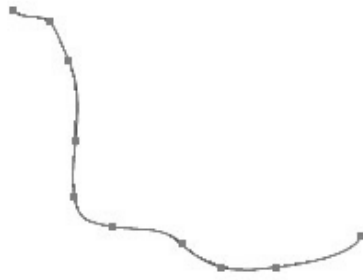

Fig 2.2: Original Stroke

Fig 2.3: Can Be Altered By Starting

From Anywhere Altered Lime

Smooth Tool: This tool helps to make the stroke created by the pencil tool, smoother. Basically it removes the anchor point to make the line smoother.

Fig 2.4: Normal   Stroke Made Smooth
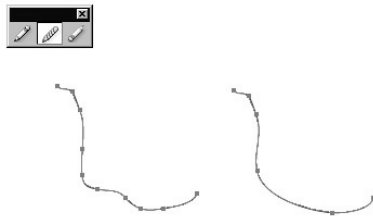
Erase tool: This tool is used to erase the section of any stroke. You can use this tool on any path (even made by the brush tool), but not on the text or meshes.

Wrap Tool: Stretches objects as if they were made of clay. When you drag or pull portions of an object using this tool, the pulled areas attenuate.

Fig 2.5: Original   Worked With Wrap Tool

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Twirl Tool: Creates swirling effects on the object, which can be used to distort the object for specific effects.

Fig 2.6: Normal   Twirled Object

Pucker Tool: Deflates an object by moving control points toward the cursor.

Fig 2.7: Normal   Object Affected From Tail

Bloat tool: Stretching an object by moving control points away from the cursor.

Fig 2.8: Normal   Affected With Bloat Tool

Scallop Tool: Adds random, smooth, arc-shaped details to the outline of an object.
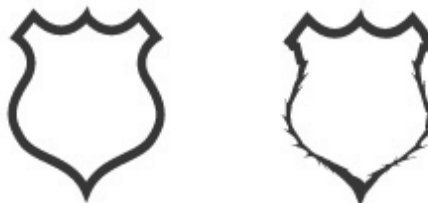
Fig 2.9: Normal   Affected With Scallop Tool

Crystallize Tool: Add random arc and spikes on the edges of the objects.

Fig 2.10: Normal   Affected By Crystallize Tool

Wrinkle Tool: Almost the same effect like and crystallize tool.

Fig 2.11: Normal   Affected By Wrinkle Tool

2.3 Working With Symbols

Symbol Tool:

Symbol sprayer tool: This tool is used to create set of symbol instances or add more instances to an existing set.
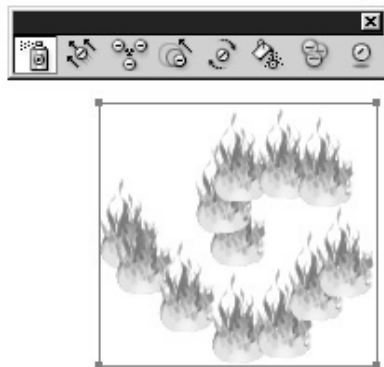
Fig 2.12: Symbol Tool

Symbol Shifter Tool: This tool is used to adjust the setting of the object after we have sprayed. It helps to place the object as desire, as it sprays randomly.
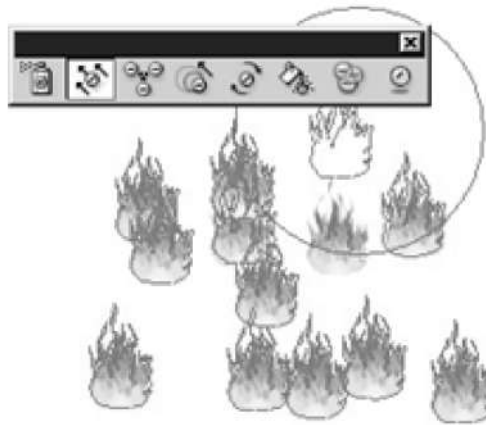
Fig 2.13: Symbol Shifter Tool

Symbol Scruncher Tool: The Symbol Scruncher tool pulls symbol instances together or apart. Use this tool to shape the density distribution of a symbol set.
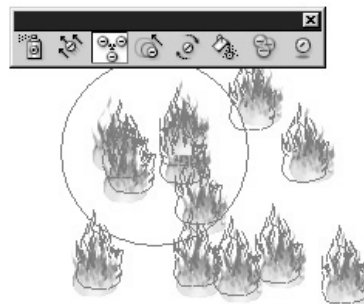
Fig 2.14: Symbol Scruncher Tool

Symbol Sizer tool: This tool is used to increase or decrease the size of the symbol which has been sprayed.
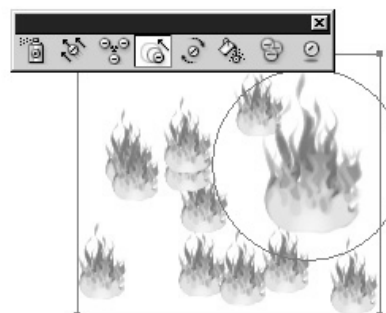
Fig 2.15: Symbol Sizer Tool

Symbol Spinner tool: It gives the spin to the object which helps to synchronize the object as required.
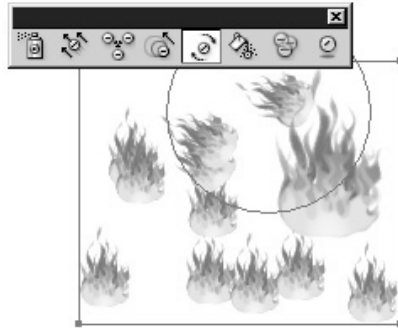
Fig 2.16: Symbol Spinner Tool

Symbol Stainer tool: It is use to colorize symbol instances. Colorizing a symbol instance changes the hue toward the tint color, while preserving the original luminosity.
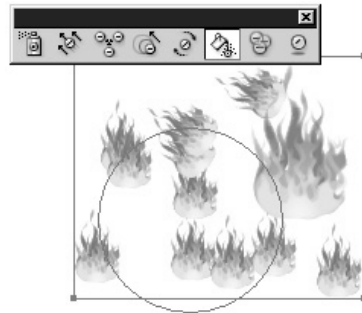
Fig 2.17: Symbol Stainer Tool

Symbol Screener tool: It is used to increase or decrease the transparency of the symbol instances in a set.
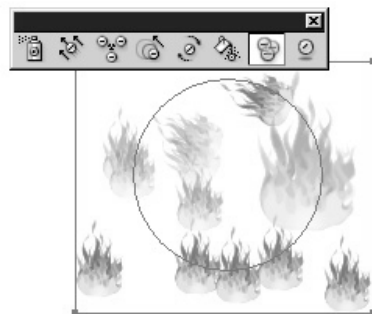
Fig 2.18: Symbol Screener Tool

Symbol Styler Tool: It lets you apply or remove a graphic style from a symbol instance. You can control the amount and location of the application.
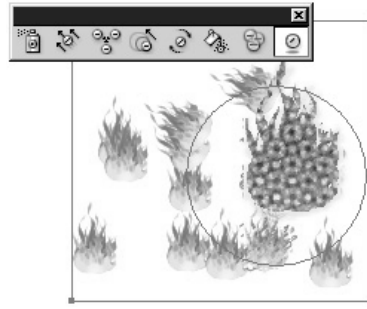
Fig 2.19: Symbol Styler Tool

Type Tool & Type Menu

To write the text in illustrator there are various option, which helps you align you text as per the requirement. There are two types to define the text like Artistic and Para graphic text. To write one or two liner we always use the artistic text but when write the data in columns or text is large enough we use Para graphic text.

❖ **Artistic Text:** (Type Tool) To write artistic text you need to take the type tool to click and type the text as required. After that you can easily change the fonts and size as per the requirement from the type menu in the menu bar.

❖ **Type of Path tool:** To write the text on any type of the path we use this tool. For this what we have to do is to draw the path with the pen tool and take the tool to click on the path to write the text.

❖ **Vertical Type tool:** This tool is use to write the text in the vertical format. Orientation is vertical and when you press enter the text flow towards the left side.

❖ **Vertical Type on Path tool:** To write the text vertically on the path we use this tool. Create the path and click on the path with this tool.

❖ **Para Graphic Text (Area Type Tool):** To write large data we use this tool, which can be used to properly synchronize the data as per the layout. For this you can use direct type tool also but for that you

need to click and drag the area for the text. But with this tool you need to draw the desire shape and than take this tool to click inside the path.
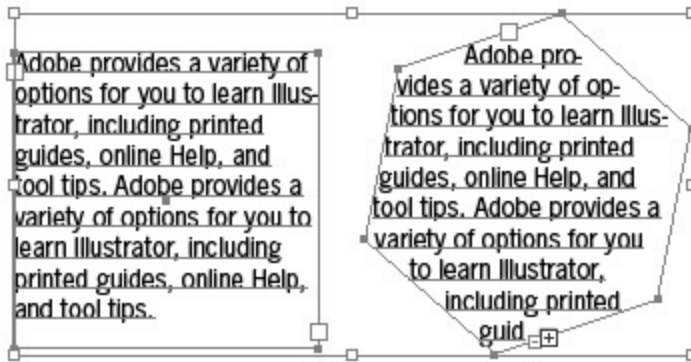
Fig 2.20: Text Written In Required Area

❖ **Vertical Area Type tool:** Text will be written in vertical orientation but in the area defined by the user.

Text Menu: In the text menu we have the different option of adjusting the text parameters.

● **Fonts :** Allows you to select the fonts of the text

● **Recent Fonts:** Displays the recently used fonts in the file.

● **Size :** Allows you to alter the size of the font.

● **Glyphs :** You can use this option to insert some odd characters, which cannot be found on the keyboard. It works as an character map.
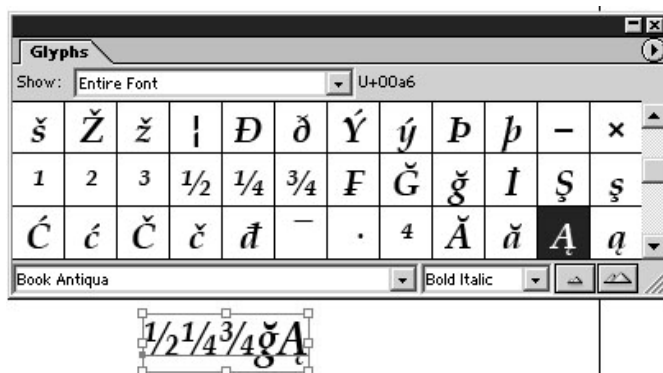
Fig 2.21: Glyphs Panel

- **Area type option:** This helps you in adjusting the Rows and Columns for the text, which has been written in area. It is used to adjust the text alignment for the newspapers or magazine as required.

- **Type on path:** These are different types of orientation given to the text, which are placed on the any path.

- **Threaded text:** If the text content is more than the area of the text than you can define another area and thread the text between two areas, so the hidden text in the initial area will be displayed in the second area drawn.

Fig 2.22: Two Text Areas Are Liked By Threaded Text

- **Fit Headline:** This Option helps you in adjusting the headline of the paragraph according to the area of the text. For this you need to select the title or head and give this option.

- **Create Outline:** This option is to convert the fonts or the text object into normal shape objects. When you take the file to any system, you will not find the missing font errors.

- **Find Fonts**: This option is find the specific fonts to be replaced. So you find the fonts, which have been used and change with the desired fonts.

- **Change Case:** This option helps change the case of the fonts from upper to lower, sentence case, toggle case.

- **Smart Punctuation:** The Smart Punctuation dialog box searches for keyboard text symbols and replaces them with publishing text symbols. It can also report the number of symbols replaced.

- **Optical Margin Alignment:** controls the alignment of punctuation marks for all paragraphs within a type object. When Optical Margin Alignment is turned on, roman punctuation marks as well as the edges of letters (such as W and A) hang outside the text margins so that the type looks aligned.

- **Show hidden characters:** These options displays the hidden characters like space and enter press while working on text. These characters are non- printing character for display purpose only.

- **Text Orientation:** It helps to change the orientation of the text from horizontal to vertical or vice-versa.

- **Legacy text:** When you open the file from the older version than text used in that may get disturb. So overcome this problem you need to give legacy text option to maintain its originality. This option is also asked when the file is still opening. You can give this option at that moment or later from the menu.

Summary

- Drawing & Shaping Tools

- Working with symbols

- Type Tool & Type Menu

Self Assessment Test

1. What is the difference between paint brush tool and pencil tool?

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2. What is the use of erase tool?

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3. What is the application of wrinkle tool?

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4. What does the symbol seizer tool do?

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5. Write a note on Typography.

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Further Reading

h t t p : / / w w w . a d o b e . c o m / c f u s i o n / e x c h a n g e /
index.cfm?s=5&o=desc&exc=17 &cat=213&event=productHome&l=-
1&from=1

http://www.vectorportal.com/extras/detail.asp?iFile=498&iType=86

h t t p : / / v e e r l e . d u o h . c o m / b l o g / c o m m e n t s /
spraying_symbols_in_adobe_illustrator/

http://www.rdesignonline.com/design/simply-symbols-part-one-a-quick-
introduction-to-illustrator-symbols/

http://createsk8.com/2007/illustrator-tutorial-free-glass-symbol-li-
brary/

http://ilovetypography.com/

http://www.wpdfd.com/issues/23/typography/

http://new.typographica.org/

Assignment

❖ **Create a Greeting Card**

❖ How to Go About:

- You have to think and decide on which subject they are going to create the greeting card.

- Once the theme is decided you have to decide the size of the card

- Good conceptual photos or graphics has to be selected.

- Proper words for the expression of the feelings should be written.

- Decent color combination has to be maintained.

- When you start working, you have to create front and back design and internal design with the write up properly synchronies.

- Sometimes the feelings can be express through the graphics with any write up so you can also work upon that too.

- Flow of the design has to be maintained.

- At the end, it has to be like a perfect card that you purchase from the market.

- ❖ Criteria:

  - Theme

  - Idea

  - Expression

  - Color Combination

  - Flow

  - Market acceptability

Case Study

Go to a cards shop and brose through each section. Pick up and buy cards of each category at least 5 categories. Study the concept, color theme, designing elements, flow of information, and message in the card. Judge and monitor the feelings that arise in you. Then see are these feelings as per the concept of the greeting card. Rate the cards.

Block

4

PATHFINDER, FILTER, EFFECT AND PRINTING CONCPT

ROLE OF SELF INSTRUCTIONAL MATERIAL
IN DISTANCE LEARNING

The need to plan effective instruction is imperative for a successful distance teaching repertoire. This is due to the fact that the instructional designer, the tutor, the author (s) and the student are often separated by distance and may never meet in person. This is an increasingly common scenario in distance education instruction. As much as possible, teaching by distance should stimulate the student's intellectual involvement and contain all the necessary learning instructional activities that are capable of guiding the student through the course objectives. Therefore, the course / self-instructional material are completely equipped with everything that the syllabus prescribes.

To ensure effective instruction, a number of instructional design ideas are used and these help students to acquire knowledge, intellectual skills, motor skills and necessary attitudinal changes. In this respect, students' assessment and course evaluation are incorporated in the text.

The nature of instructional activities used in distance education self- instructional materials depends on the domain of learning that they reinforce in the text, that is, the cognitive, psychomotor and affective. These are further interpreted in the acquisition of knowledge, intellectual skills and motor skills. Students may be encouraged to gain, apply and communicate (orally or in writing) the knowledge acquired. Intellectual- skills objectives may be met by designing instructions that make use of students' prior knowledge and experiences in the discourse as the foundation on which newly acquired knowledge is built.

The provision of exercises in the form of assignments, projects and tutorial feedback is necessary. Instructional activities that teach motor skills need to be graphically demonstrated and the correct practices provided during tutorials. Instructional activities for inculcating change in attitude and behavior should create interest and demonstrate need and benefits gained by adopting the required change. Information on the adoption and procedures for practice of new attitudes may then be introduced.

Teaching and learning at a distance eliminates interactive communication cues, such as pauses, intonation and gestures, associated with the face-to-face method of teaching. This is particularly so with the exclusive use of print media. Instructional activities built into the instructional repertoire provide this missing interaction between the student and the teacher. Therefore, the use of instructional activities to affect better distance teaching is not optional, but mandatory.

Our team of successful writers and authors has tried to reduce this.

Divide and to bring this Self Instructional Material as the best teaching and communication tool. Instructional activities are varied in order to assess the different facets of the domains of learning.

Distance education teaching repertoire involves extensive use of self- instructional materials, be they print or otherwise. These materials are designed to achieve certain pre-determined learning outcomes, namely goals and objectives that are contained in an instructional plan. Since the teaching process is affected over a distance, there is need to ensure that students actively participate in their learning by performing specific tasks that help them to understand the relevant concepts. Therefore, a set of exercises is built into the teaching repertoire in order to link what students and tutors do in the framework of the course outline. These could be in the form of students' assignments, a research project or a science practical exercise. Examples of instructional activities in distance education are too numerous to list. Instructional activities, when used in this context, help to motivate students, guide and measure students' performance (continuous assessment)

PREFACE

We have put in lots of hard work to make this book as user-friendly as possible, but we have not sacrificed quality. Experts were involved in preparing the materials. However, concepts are explained in easy language for you. We have included many tables and examples for easy understanding.

We sincerely hope this book will help you in every way you expect.

All the best for your studies from our team!

COMPUTER GRAPHICS & ILLUSTRATOR

Block 1: CONCEPT OF GRAPHICS FORMATS AND COLOUR MODEL

Unit 1   TYPES OF COMPUTER GRAPHICS & GRAPHICS ATTRIBUTE

Learning Objectives:

- ·   Understanding Graphics concepts
- ·   Difference of Raster and vector graphics
- ·   Understanding Graphics attributes
- ·   Knowing the File Formats

UNIT 2 COLOR MODELS FOR COMPUTER GRAPHICS & COMPUTER GRAPHICS PROCESSING

Learning Objectives:

- ·   Learning various color modes
- ·   Understanding computer graphics processing

UNIT 3 GRAPHICS FILE FORMATS & GRAPHICS FILE COMPRESSION

Learning Objectives:

- ·   Here you will understand and know various file formats
- ·   Also understand graphics file compression

Block 2: WORKING WITH TOOLS AND MENU –

UNIT 1 CONCEPT OF GRAPHIC DESIGNING AND STARING OFF & PRINT MEDIA

Learning Objectives:

- ·   Here you will start off with illustrator
- ·   Understand the working environment of illustrator
- ·   Also learn the Tools
- ·   Concepts related to Print Media

UNIT 2 WORKING WITH MENUS

Learning Objectives:

Knowing the menus and their uses

- ·   How to use tools and make applications

Block 3: WORKING WITH DRAWING TOOLS AND TYPOGRA-PHY –

UNIT 1 WORKING WITH DRAWING TOOLS, COLORS, GRADI-ENTS

Learning Objective

- Grasping drawing skills using drawing tools
- Importance of colors.
- Achieving realistic output by using gradients

UNIT 2 WORKING WITH DRAWING TOOLS, SYMBOLS AND STUDYING TYPOGRAPHY

Learning Objective

- Drawing and shaping Tools
- Understand the usage of symbols
- How to bring symbols into application
- Typography

Block 4: PATHFINDER, FILTER, EFFECT AND PRINTING CONCPT

UNIT 1 WORKING WITH PATHFINDER, FILTERS AND EFFECT MENU

Learning Objective

- Understand pathfinder
- How to enhance artwork using filters
- How to effectively use effects menu

UNIT 2 EXPORT AND PDF TECHNOLOGY & PRINTING CONCPETS

Learning Objective

- How to Export
- Understanding the PDF technology
- Knowing the printing concepts

❖ **Learning Objectives:**

- Understand pathfinder

- How to enhance artwork using filters

- How to effectively use effects menu

: Structure :

- Introduction

- Object Menu

- Effect

- Filters & Effect Menu

1.1 Introduction

In this unit you will study Object menu further where you will come across features of working with Path, so you will know how to manipulate paths in order to generate complex objects and customized shapes as per your concept and requirement. You will study the most useful feature of clipping ask, this is widely used when you work with images in your artwork and you want to do masking. This feature is very useful in ads and applications of graphical representation via images. And then the most loved topic is the filters and effects. When working with print media you sometimes want to get artistic effect and for this you have a wide range of filters that you can use in illustrator. So let's go studying this.

Object Menu

Path:

Join: This command helps you to close the object if the path is open.

Fig 1.1: Path Joined

Average : This command helps you to align the anchor points either in vertical or horizontal direction.

Outline Stroke: This command is to convert the outline to the object.
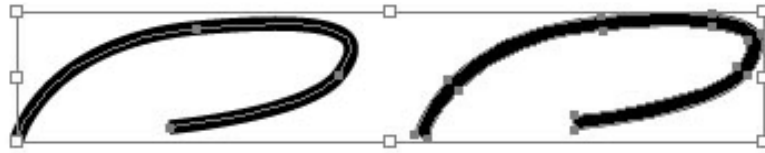
Fig 1.2: Outlined Sroke

Offset path: It generates the object around the path according to the values define along with different miter limit given.
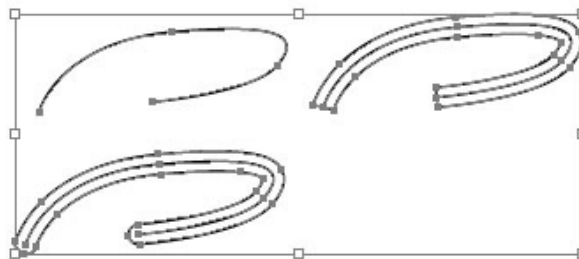
Fig 1.3 Offset Path

Simplify: It reduces the anchor points to make the path smoother.
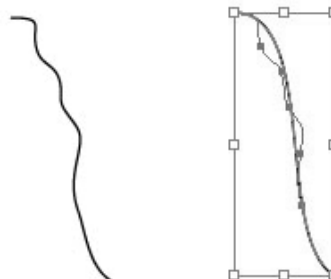
Fig 1.4: Simplified Patj

Add Anchor points: It adds the anchor points on the path without disturbing the original shape of the path.

Divide the object below: This command will help to cut the object in whatever shapes you want. Draw the object, which has to be cut and placed behind the path. Then give this command to cut the object below.

Split to grid: Select more than one close object for eg. Rectangle and then use this option to get the objects placed in more synchronize way.
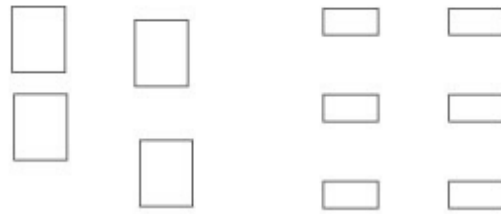
Fig 1.5: Before   After

Clean up: It remove unwanted stray points, unpainted objects and text path which are of no use and for that you need not find and delete.

Envelop Distort: Envelop distort can used on any type of the object to deform the shape. Practical use is, it is mainly used on the text to give the shape of the text as required.

- **Make with Wrap:** This option is a ready-made option with the customize setting which can be applied on the text or else on the object. It wraps the object in different styles given.

- **Make with Mesh:** This option generates the mesh on the object, which is defined with the anchor points. This anchor points has to be edited as per the requirement, which will give the desire shape to the object or the text.

- **Make with Top Object:** It requires minimum of two objects to work with this option. Below object will get wrapped according to the object place above.

- **Release:** This command will separate the enveloped object from original shape to the mesh shape.

- **Envelope Options:**
  - Select Anti-Alias to smoothen raster images when distorted with an envelope. Deselecting Anti-Alias can decrease the time it takes to distort raster.
  - To specify how raster preserve their shape when distorted by non-rectangular envelopes, select one of the following Preserve Shape Using options:
  - Clipping Mask to use a clipping mask on the raster.

- o Transparency to apply an alpha channel to the raster.

- o Specify a Fidelity percentage to indicate how precisely you want the object to fit the envelope mold. Increasing the Fidelity percentage can add more points to the distorted paths and increase the time it takes to distort the objects.

- o Select Distort Appearance if you want to distort the appearance of an object (such as applied effects or graphic styles) and not just the object's underlying geometry. When this option is not selected, the appearance is applied after the envelope distorts the underlying geometry.

- **Expand:** This command will helps to break apart the envelope distortion given to the object.

- **Edit content:** After define the envelope; if you fill to change the content of envelope we use this option.

The Clipping Mask: It is a masking feature for hiding or showing the objects as desired. You need at least two objects. The object to be masked has to be place below. The mask object should be path oriented.
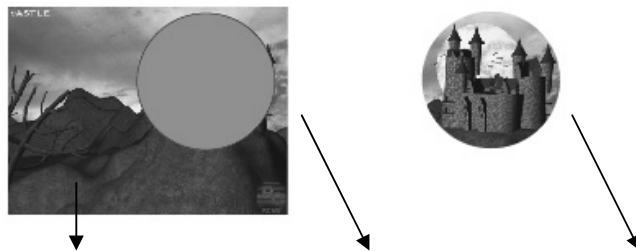
Fig 1.6: Object To Be Masked   Object With Path   Clipping Mask

Compound Path: This command is use on the path. When there are two paths and if we want to consider two different paths as an one object we use this command. It will convert two identities as one. Releasing it will break apart once again.

Crop Mask: The Crop Marks filter creates crop marks around the bounding box of the selected object. *Crop marks* define a trim able area.

Effects

Path Finder: Pathfinder is the option, which can be used to work with different shape, and from that shape you can form a new shape. This is found in Effect menu or else panels define in windows menu.

- Add to shape area: It merges two or more objects to form a shape.

Fig 1.7: Add To Shape Area

- Subtract from the shape area: It remove or trim the area with reference to other objects.
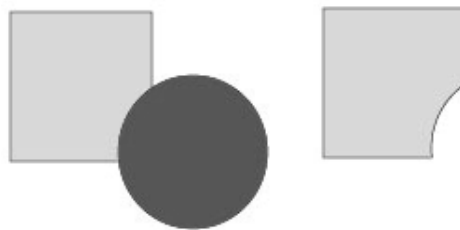
Fig 1.8: Subtract From Shape Area

- Intersect the area: It keeps the common area from the objects.

Fig 1.9: Intersect The Area

- Exclude overlapping shape areas: It combines the objects and intersected areas in the objects will become transparent. And the color of the object will be according to the object, which is above.

Fig 1.10: Exclude Overlapping Shape Areas

Rest of the option for the pathfinder is exactly the same like weld, trim, intersect, but for this option you need to group the objects and apply the command. After applying the command you need to ungroup the object to check the effect.

Path: Path option in the effect menu is exactly the same as the path option of the object menu.

Distort & Transformation: Illustrator provides a variety of effects and filters for changing an object's shape and path direction, including the Free Distort command, Round Corners command, Convert to Shape command, Pucker & Bloat command, Roughen command, Tweak command, Twist command, Zig Zag command, Offset Path command, and Warp command.

- **Free Distort:** The Free Distort command lets you change the shape of a vector object by dragging any of four corner points. You can also apply this command to a fill or stroke added to a bitmap object with the Appearance palette.

Fig 1.11: Free Distort

- **Pucker & Bloat:** The Pucker & Bloat command can either pull a vector object's anchor points outward while curving the segments inward (Pucker) or pull the anchor points inward while curving the segments outward (Bloat). Both options pull the anchor points relative to the object's center point.
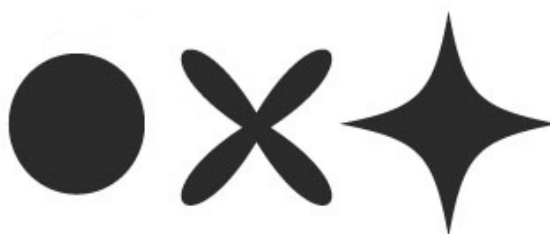
Fig 1.12: Normal   Pucker   Bloat

- **Roughen:** The Roughen command transforms a vector object's path segments into a jagged array of peaks and valleys of various sizes.

Fig 1.13: Roughen

- **Tweak:** The Tweak command randomly curves and distorts path segments inward and outward.

Fig 1.14: Tweak

- **Twist:** The Twist command rotates an object more sharply in the center than at the edges.

Fig 1.15: Twist

- **Zigzag:** The zigzag command transforms an object's path segments into a jagged or wavy array of uniformly sized peaks and valleys. You can specify the number of anchor points to create and the distance to move them. You can also choose whether to create smooth anchor points for a wavy line effect, or corner anchor points for a jagged line effect.

Fig 1.16: Zig-Zag

Convert to Shape: The Convert to Shape effects (Rectangle, Rounded Rectangle, and Ellipse) converts a vector object's or raster image's shape.

You can add more complexity by applying the effect to a specific attribute of an object that has multiple fills or strokes.

Expand & Expand Appearance: The Expand and Expand Appearance commands divide an object into multiple objects that make up the original object's appearance. Expanding an object can be useful when you want to modify specific elements in an object, such as the individual shapes that make up a 3D object or a blend. In addition, expanding objects may be helpful when you want to use an object that is native to Illustrator (such as a mesh object) in a different application that doesn't recognize the object. In short it works as a break apart command for the object.

Fig 1.17: Expand & Expand Appearance

Flatten Transparency:

Name: Specifies the name of the preset. Depending on the dialog box, you can type a name in the Name text box or accept the default. You can enter the name of an existing preset to edit that preset. However, you can't edit the default presets.

Raster/Vector balance: Specifies the amount of rasterization. The higher the setting, the less rasterization is performed on artwork. Select the highest setting to keep as much artwork as possible vector data; select the lowest setting to rasterize all the artwork.

Line Art and Text Resolution: Specifies the resolution for vector objects rasterized as a result of flattening.

Gradient and Mesh Resolution: Specifies the resolution for gradients and mesh objects rasterized as a result of flattening.

Rasterize: The process of changing a vector graphic to a bitmap image is called rasterization. During rasterization, Illustrator converts the graphic's paths into pixels. The rasterization options you set determine the size and other characteristics of the resulting pixels.

Transparency Panel: This panel in the window menu helps you give the opacity (transparency) to the object. Blending modes let you vary the ways that the colors of objects blend with the colors of underlying objects. When you apply a blending mode to an object, the effect of the blending mode is seen on any objects that lie beneath the object's layer or group. You can also isolate the blending mode to a targeted layer or group in order to leave objects beneath unaffected, or isolate all blending modes at the page level.

Use the Opacity & Mask Define Knockout Shape option to make a knockout effect proportional to the object's opacity—in areas of the mask that are close to 100% opacity, the knockout effect will be strong; in areas with less opacity, the knockout effect will be weaker.

Place: This option in the file menu helps you to import the object in you file.

- Linked artwork remains independent of the Illustrator document, resulting in a smaller Illustrator file. You can modify linked artwork using transformation tools and effects; however, you cannot select and edit individual components in the artwork. A preference you set for updating links determines whether the artwork in the Illustrator document changes when the linked file changes outside of Illustrator.

- Embedded artwork is copied into the Illustrator document, resulting in a larger Illustrator file. If the artwork contains multiple components, you can edit them discretely. For example, if the artwork contains vector data, Illustrator converts it to paths, which you can then modify using Illustrator tools and commands. Illustrator also

preserves the object hierarchy (such as groups and layers) in artwork embedded from certain file formats.

Link Panel: When you import artwork using the Place command, Illustrator creates a link to an external source file or embeds a copy of the file in the Illustrator document. The Links palette lets you identify, select, monitor, and replace linked and embedded artwork. You can use the Links palette to determine if the link to a source file is broken or missing, get information about linked or embedded objects, and open a linked file in its original application.
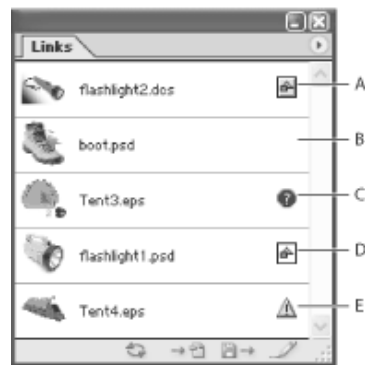
Fig 1.18: Links Palette

Managing link and embedded artwork:

When you import artwork using the Place command, Illustrator creates a link to an external source file or embeds a copy of the file in the Illustrator document. The Links palette lets you identify, select, monitor, and replace linked and embedded artwork. You can use the Links palette to determine if the link to a source file is broken or missing, get information about linked or embedded objects, and open a linked file in its original application.

Editing the link artwork:

When you make changes to a source file, the changes are applied to the linked artwork when the link is updated in Illustrator.

Layers: Layers are imaginary canvas in the file and you can create each object in different layers.

The stacking order of artwork in the document window corresponds to the hierarchy of items in the Layers palette. Artwork in the top layer in the Layers palette is at the front of the stacking order, while artwork in the bottom layer in the Layers palette is at the back of the stacking order. Within a layer, objects are also stacked hierarchically.
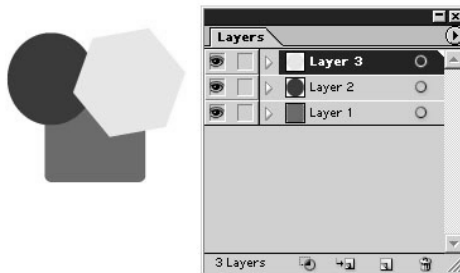
Fig 8.19: Layers

1.4 Filters & Effect Menu

There are two options given in illustrator, which are almost the same. But the option displayed in Filter menu only works on the raster objects and Effects menu works on vector shapes.

Sometimes you don't get the options highlighted in the filter and effect menus. This is only because some of the filters given here are not working in the CMYK mode. So for this you need to convert the file into RGB mode and than you get all the options in the menus highlighted.

Filters and effect are the ready to use application, which can be tried But the new features are 3D effect and Scribble effects

3D Effect:

3D effects enable you to create three-dimensional (3D) objects from two- dimensional (2D) artwork. You can control the appearance of 3D objects with lighting, shading, rotation, and other properties. You can also map artwork onto each surface of a 3D object.

There are three ways to create a 3D object. You can give a 2D object depth along its *z* axis by *extruding* the object. For example, if you extrude a 2D ellipse, it becomes a cylinder.
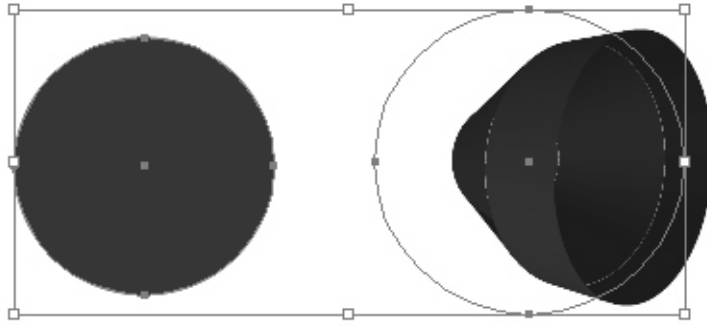
Fig 1.20: 3D Effect

3D EXTRUDE

Closed path (left) compared to same path with Extrude & Bevel effect applied (right).

You can *revolve* a 2D object around the global *y* axis up to 360°.
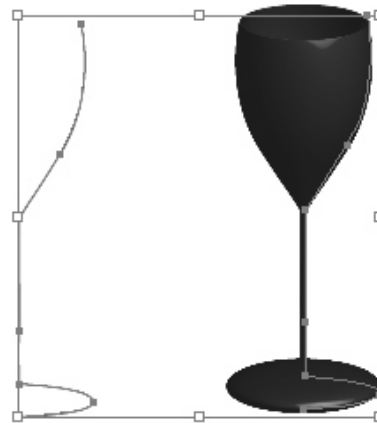
Fig 1.21: 3D Extrude

Closed path (left) compared to same path with Revolve effect (right).

Fig 1.22: Closed Path (left) Revolve Effect (right)

Closed path with offset axis (left) compared to same path with Revolve effect (right).

You can also use 3D effects to *rotate* 2D artwork in 3D space to change the artwork's perspective.

Note: 3D objects may display anti-aliasing artifacts on screen, but these artifacts won't print or appear in artwork optimized for the Web.

Scribble Effect:

Have fun making vector artwork look loose and hand-drawn with the new live Scribble effect. Great for adding a child-like charm to artwork, the Scribble effect is also handy for quickly making formal design elements look casual and friendly, masking images, creating scratchboard-like illustrations, adding cross- hatching to a design, or creating animated wiggly lines.

The Scribble effect lets you create a broad range of looks, from objects that look roughly sketched to objects that look mechanically produced. The effect converts an object's fill and stroke colors to lines of color. The effect options let you control the angle, path overlap, stroke width, curviness, spacing, and variation of the lines.
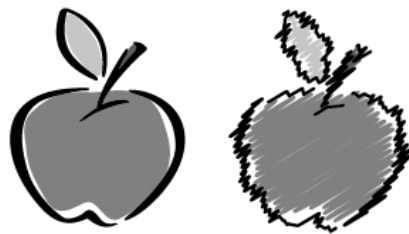
Fig 1.23: Comparison Of Scribble Effect Settings

Summary

- Object Menu

- Effect

- Filters & Effect Menu

Self Assessment Test

1. Write a note on Envelope Distort?

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2. What is clipping mask?

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3. Write all features of Path Finder.

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4.   What does tweak do?

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5.   Give difference between Expand & Expand Appearance.

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Further Reading

- h t t p : / / v e e r l e . d u o h . c o m / b l o g / c o m m e n t s / using_the_pathfinder_and_align_to ol_in_illustrator/

- http://www.bittbox.com/illustrator/pathfinder-explained/

- http://www.steeldolphin.com/htmltuts/swoosh_design.html

- http://abduzeedo.com/illustrator-quick-tips-1-complex-symbols-pathfinder

- http://graphic-design- tutorials.suite101.com/article.cfm/ filters_and_effects_in_adobe_illustrator

- http://www.allgraphicdesign.com/graphicsblog/2007/11/19/huge-list-of- adobe-illustrator-plugins-filters-tools/

- http://www.layersmagazine.com/swirly-border-design-in-illustra-tor- cs4.html

Assignment

- **Creating a Poster**

- How to Go About:

  - Pick a topic

  - Decide Color theme

  - Poster size i.e. dimensions in feet

  - These posters can be road side posters

  - Special effects to be used

  - Titles to be placed properly

  - Text to be appropriate and complete

  - Other information if required

- Criteria:

  - Proper placement of the main focused product or the concepts

  - Good and eye-catching layout

- Complete information has to be passed on to the reader.

- Design of poster should speak your words.

- Avoid movies, film stars, mobiles, automobiles

Case Study

Go out in your city and have a look at least 5 posters that appeal and attract you the most. Come back home and sit with the information and figure out what attracting you in those posters. Will you go buying or following that product highlighted in the poster. What the poster informative? Was the information appropriate to you and enough for the poster? Study the color theme & most important study the typography, size, fonts, style and layouts. Figure out the composition of the poster.

UNIT 2	**EXPORT AND PDF TECHNOLOGY & PRINTING CONCPETS**

❖ **Learning Objectives:**

- How to Export

- Understanding the PDF technology

- Knowing the printing concepts

: Structure :

- Introduction

- Page Setup

- Printing Concepts

- PDF Technology

Introduction

You will study the export features in illustrator, export allows you to save files into different compatible formats such that your artwork can be used for other applications and in various software.

Next feature you will study are the print concepts. How to go about sending your artwork for printing keeping in mind various print options in Illustrator.

Stands for Portable Document Format and is used mainly for documents. You can preserve fonts, page layout and document information, this is the most common format across WWW as these files are quite compressed in size and used a lot for information exchange over internet, also because these files are platform independent they can be opened across any operating systems and software. You will study how to generate PDF files from illustrator.

Page Setup

This option in the file menu allows you to redefine you art board as per the changes required.

- To change the area of the file

- To set the orientation of the page (landscape & portrait)

- To change the look of the file from art board to transparent background or type.

Document Color Mode: This option is used to change the color mode of the file from CMYK to RGB or else vice versa.

Printing Concepts

The General options in the Print dialog box let you specify how many pages and copies to make, set the page size and orientation of the artwork, scale a document, and choose which layers to print or separate.

- Specifying the number of pages and copies

- Specifying the media size and orientation

- Specifying which layers to print

- Scaling a document

Setting Marks and Bleed options:

When you prepare artwork for printing, a number of marks are needed for the printer device to register the artwork elements precisely and verify correct color. These marks include trim marks, registration marks, color bars, and page information. The Marks & Bleed options in the Print dialog box enable you to add these marks to your separations

Bleed, meanwhile, is the amount of artwork that falls outside of the printing-bounding box, or outside the crop marks and trims marks. You can include bleed in your artwork as a margin of error—to ensure that the ink is still printed to the edge of the page after the page is trimmed or to ensure that an image can be stripped into a key line in a document. Once you create the artwork that extends into the bleed, you can use Illustrator to specify the extent of the bleed. Increasing the bleed makes Illustrator print more of the artwork that is located beyond the trim marks. The trim marks still define the same size printing- bounding box, however.

By default, Illustrator applies a bleed of 0 points to roman printer marks and 8.5 points (3 millimeters) to Japanese printer marks (which have a double line to show any difference between the original origin point and any offset). This is only available if your primary operating system is Japanese.

The maximum bleed you can set is 72 points; the minimum bleed is 0 points. The size of the bleed you use depends on its purpose. A press bleed (that is, an image that bleeds off the edge of the printed sheet) should be at least 18 points. If the bleed is to ensure that an image fits a Keyline, it needs to be no more than 2 or 3 points.

Your print shop can advise you on the size of the bleed necessary for your particular job.

PDF Technology

You can open and edit the PDF format in illustrator.

Adobe Portable Document Format (PDF) is versatile file formats that can represent both vector and bitmap data. You can bring artwork from PDF files into Illustrator using the Open command, the Place command, the Paste command, and the drag-and-drop feature.

Adding Security:

When saving artwork in PDF, you can add password protection and security restrictions, limiting not only who can open the file, but also who can copy or extract contents, print the document, and more.

When we import the PDF format for working, each and every object are editable object so that you can manipulate the setting as per the requirement.

Export

This option in the file menu helps you take the file in different formats according to the different application required. The most regularly use format are JPEG, DWG (AutoCAD), TIFF, Targa, SWF, PNG, WMF, etc.

Also you can export the text as a text file also which can be opened in note pad later on.

JPEG: This is format, which can be used for digital prints and any type of application because it accepted by almost all the software.

DWG: It is an Auto-CAD format. You can export the path, which can be used to in the Auto-CAD, as it is difficult to create irregular object in auto cad. This path can be converted to 3D object later on.

SWF: To take the object in Flash we need to export the object in SWF (shockwave Flash). Due to lack of drawing tools in flash we use this option.

PNG: Portable Networks Graphic is the format now a days regularly used in the website. This format supports transparency.

TIFF: This format is mainly used in the print media, which supports alpha channel.

Summary

- Page Setup
- Printing Concepts
- PDF Technology

Self Assessment Test

1. Give the printing concepts?

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2.   What is full form of PDF?

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3.   Give uses of PDF technology?

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4.   What is PDF technology?

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5.   Explain export feature of illustrator?

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Further Reading

- http://www.adobe.com/products/acrobat/adobepdf.html

- http://www.printingconceptsonline.com/

- http://www.khulsey.com/student.html

- http://www.khulsey.com/demo_howto_photoshop.html

- http://www.allgraphicdesign.com/graphics/graphics- software/
  graphicssoftware-adobeillustrator/listresourcesillus.html

- http://ooglewindowblinds.com/illustrator-tutorials/flower-vase-il-
  lustrator- tutorials

- http://digg.com/design/Adobe_Illustrator_Tutorials_2

- http://www.dezinezone2002.com/welcome/tutorials/38-illustrator/
  51- creating-a-logo.html

- http://www.computer-training-software.com/illustrator-10-tec.htm

Assignment

- **Create an Ad**

- How to Go About:

  - You have to first decide on which they are working.

  - Once they decide than they have to work upon the concept of the
    magazine ad

  - If they choose the magazine ad, which is more enjoyable to work
    as, we need to think the concept. Concept becomes the main part
    of the advertisement.

  - Once the concept has been decided than the data and required
    material has to be collected.

  - Once the designing start you need to think about the target audi-
    ence for the ad that you are making of.

  - According to that you create the design.

- Criteria:

  - Proper placement of the main focused product or the concepts

  - Good and eye-catching layout

  - Complete information has to be passed on to the reader.

  - Designs should speak your words.

Case Study

Study various kinds of ads existing around you and find out the trend that running in the market and do a TA study as to what kinds of ads are like and not liked by audience.

Glossary / Key Terms

Courtesy:

http://corporateportal.ppg.com/NA/CORP/GlobalID/guidelines/glossary.htm

Background

It is the area behind a design element, also known as *field*.

Baseline

It the imaginary line upon which the bottoms of letters, numbers, and other typographic characters are aligned (not including letters that descend below the line, such as g, p or j.)

Bleed

To reproduce an image that continues beyond the edge of the sheet, page or sign.

Brands

A brand is a promise of a positive experience that begins before a relationship is built. It is an expectation which buyers are pre-conditioned to act on. A company owns its trademark, but the marketplace grants it a brand.

Cap Height

The height of an uppercase letter as measured from its top to its base perpendicular to the baseline.

Chromatic Logo

It is the multicolored, rainbow-like version of the PPG *logo*.

CMYK

It is an abbreviation for the colors cyan, magenta, yellow and black. They are the core colors used in four-color process printing.

Communicative Name

The informal name of the company or one of its organizational groups used in conversation, copy and signatures: PPG Industries. It contrasts with the legal name: PPG Industries, Inc.

Constraints

The areas surrounding a graphic element that must be kept free of any other graphic element, typography or field edge.

Corporate Colors

The official combination of colors associated with the Global Identity Standards, such as *PPG Blue* and black.

Corporate Descriptor

It is the line on a signature that identifies the product or brand with PPG Industries, such as "A PPG Industries Product."

Notes Dark Field

It is a field, background that is darker than the element that is placed over it. It contrasts with a *light field*.

Download Files

Software, files, that can be transported over the internet from a remote computer to a desktop computer.

FAQ

It is a list of questions and answers. It is an abbreviation for Frequently Asked Questions.

Field

Field is the total available area in which corporate identity elements are placed, also known as *background*. Fields can be transparent, light or dark.

Flush Left (or Right)

It is a vertical alignment of lines of type at the left (or right) margin.

Font

It is a term that identifies the complete set of all characters, letters and numbers of the same typeface, such as Helvetica or Times.

Four-Color Process

It is a printing process that combines four colors (cyan, magenta, yellow and black) to create full color images. It is used to reproduce continuous tone color photographs or to match colors. The colors are printed on top of one another to produce the desired image. See also *CMYK*.

Graphic Element

It is a piece of art or type.

Graphic Standards

It is a set of guidelines outlining a corporate identity system and its proper use.

Horizontal Signature

It is a signature that features the PPG logo to the left of the logotype. It contrasts with a *vertical signature*.

Illustrator EPS Files

Files saved in a special format for use with Adobe Illustrator software.

Italic

It is the name given to typographic characters that are slanted to the right. For example, *this is italic type*.

Joint Venture

A joint venture is a corporate entity created by two (2) or more parties for a common purpose in which the parties agree to share management, control, profits and losses.

Layout

Lay out is the way in which graphics and typographic elements are placed on a page.

Legal Name

Legal name is the formal term (PPG Industries, Inc., PPG Japan Ltd. and PPG Industries Ireland Limited) under which the corporation or one of its organizational elements operates as a lawfully registered business. Generally, it is used in media only when required by law, such as for business cards, brochure address sign-offs, correspondence materials and legal documents. It is not used in signatures. It contrasts with the *communicative name*: PPG Industries.

Letter Spacing

Letter space is the amount of space that separates letters in a word.

Light Field

Light field is a field, background that is lighter than the element that is placed over it. It contrasts with a *dark field*.

Line Spacing

It is the amount of space that separates lines of type, the measurement from the baseline of one line of type to the baseline of the type immediately below it.

Logo

Logo is the graphic mark showing the letters PPG in a rectangle with rounded corners, also known as a design trademark or symbol.

Logotype

The typographical element that says: PPG Industries. It can be used by itself or as part of the signature.

Margin

It Can be the top, bottom, left and right part of a layout.

Mark

The general term for a trademark, service mark and design mark.

Marketing Slogan

An approved phrase or slogan used for advertising and promotional purposes, such as "It's what to look for in a Window"

Match Color

Is a color that is reproduced using a specially mixed ink instead of a four-color process color.

Media

It is a kind of Forms of communication, including printed and electronic.

Offset

Is a printing process that transfers an image to the paper using ink (and not laser printing). The term is an abbreviated one for offset lithography.

Overprinting

To print a second image or type over something else is called Overprinting.

Pantone® 307

The blue color, when PPG blue is created using the PANTONE MATCHING SYSTEM®. PANTONE® colors displayed here may not match PANTONE– identified standards. Refer to current PANTONE MATCHING SYSTEM® Publications to view accurate PANTONE color standards. PANTONE® and other Pantone, Inc. trademarks are the property of Pantone, Inc. Portions © Pantone, Inc., 2000.

Pica

A measurement used by printers and graphic designers that is equal to l/6 inch or 4.23 millimeters.

Point

A measurement of size often used when measuring fonts. There are 12 points to one pica.

PPG Blue

The corporate blue color that is associated with the PPG corporate logo. It can be created using Pantone® 307 or CMYK or RGB formulas.

Premiums

Premiums or advertising specialties are promotional items, usually three dimensional, used by a company to promote a product, service, brand, idea, organization or other element. Such items are frequently used in promotional direct mail campaigns, as giveaways at tradeshows and sales meetings, for customers, and many other uses. Premium items carry the company name, logo, brand, trademark or other identity, and must be used correctly.

Printed Communication Materials

The Printed materials such as advertisements, direct mail, brochures, posters, etc.

Reverse

It is an image that has light type or graphics against a dark field.

Registered Trademark

Registered Trademark is the trademark that has been granted Registration status by a government agency. When registered, the symbol ® should be used in conjunction with the trademark itself, and is usually placed on the right shoulder of the word. Alternatively for registered trademarks, a footnote may state, for example, "SUNGATE is a registered trademark of PPG Industries,

" or (in the case of U.S. registrations) "Registered U.S. Patent and Trademark Office," Or "Reg. U.S. Pat. & TM Off."

® Symbol

The symbol used with a Registered Trademark.

RGB Color

Red, green, blue color formulas used to create a specific color on televisions or computer monitors.

Sans Serif

Is a name given to typefaces that have no serifs (a fine line that finishes main strokes of a letter). For example: The Helvetica font is a sans serif typeface.

Serif

Is a name given to typefaces that have serifs (a fine line that finishes main strokes of a letter). For example: Times Roman font

Signs

Is the use of graphical elements on directional signs and building signs. Signs can be used on interior or exterior surfaces.

Signature

Signature is the combination logo and logotype that visually represents PPG Industries, Inc. in its corporate identification system.

Super graphic

Is the oversized portion of the PPG logo, angled, and in larger size.

Template

The template is a computer file indicating the correct position of graphic elements, and typographic specifications.

TIFF Files

Graphic files saved in a special format for use with electronic presentation software, such as Microsoft® PowerPoint®.

TM symbol

The trademark symbol is used to indicate that a name or design is claimed as a trademark. The two letters should appear in upper case and raised above the baseline (™). See also *trademark*.

Trademark

It is the identification of a particular source of goods or services. It is legally protected against confusingly similar use by others. See also the *TM symbol*.

Typography

It is the art, general design, and appearance of printed or electronic materials using fonts, typefaces.

Vertical Signature

Is a signature that features the PPG logo above the logotype? It contrasts with a *horizontal signature*.

Web-safe hex code

The web-safe color palette consists of 216 solid colors that display exactly the same on all computer monitors. Each color has a hex code of 6 characters. This is used to describe a color within the HTML the code behind a web page.

Weight

Weight is the thickness of a line or typographic element.

Windows Metafiles

Files saved in a special format for use with word processing software.