

Odisha State Open University



Commonwealth of Learning

# INTRODUCTION TO MULTIMEDIA

*Content Development & Distribution*



Diploma in  
Multimedia and Animation (DMA)

DMA-01  
BLOCK-2



# Introduction to Multimedia

Block –II: Content Development and Distribution



ଓଡ଼ିଶା ରାଜ୍ୟ ମୁକ୍ତ ବିଶ୍ୱବିଦ୍ୟାଳୟ, ସମ୍ବଲପୁର  
ODISHA STATE OPEN UNIVERSITY, SAMBALPUR

## Introduction to Multimedia

This course has been developed with the support of the Commonwealth of Learning (COL). COL is an intergovernmental organisation created by Commonwealth Heads of Government to promote the development and sharing of open learning and distance education knowledge, resources and technologies.

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 ODISHA STATE OPEN UNIVERSITY, SAMBALPUR



## Course Overview

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### Welcome to Content Development and Distribution

In this block, you are going to study about the Content Development and Distribution network in Multimedia operations. You will study about the types of contents which you are going to prepare and the formats in which it will be converted to distribute on the wide network using Internet, Publishing etc.

### Desktop Publishing—is this course for you?

This course is intended for people who have a flair of knowledge in design as well as computer. Desktop Publishing can be done by a professional artist as well as an amateur person with some creativity and skills on operating a computer.

### Multimedia Animation and Special Effects—is this course for you?

This course is intended for people who want to make a career in Multimedia and Animation industry. This course brings up the technical part of the Industry. One has to be technically very strong combined with creative skills to make a mark in the industry.

### Social Networking and Publishing—is this course for you?

This course is intended for people who want to make their presence felt in the society. Everyone intends to increase the range of people they know. Social Networking using computers and smartphones






has brought the world together in a common platform. Each and every person needs to be acquainted with Social Networking and Publishing.

## Content Distribution system—is this course for you?

*Content Distribution System* (CDS) especially Digital System has created stories of Rags to Riches. Content distribution systems act as a platform for Creative Persons and Content development companies to showcase their talent to the whole world and earn name and fame for themselves. Content Distribution Companies are professional and abundant with resources which are required for Distribution.

This video will provide a brief overview of this course.

Topic	YouTube link	QR Code
Video 1 –DeskTop Publishing	<a href="https://youtu.be/HV-q48-9JG0">https://youtu.be/HV-q48-9JG0</a>	
Video 2 –Animation & VFX Overview	<a href="https://youtu.be/O_TBxLPCNa0">https://youtu.be/O_TBxLPCNa0</a>	
Video 3 –Content Distribution for various Media	<a href="https://youtu.be/75e0K46URtU">https://youtu.be/75e0K46URtU</a>	

## Course Outcomes

Upon completion of Content Development and Distribution you will be able to:



### Outcomes

- *Describe* about Desktop Publishing.
- *Identify* the software's used in Desktop Publishing.
- *Explain* Multimedia and Animation concepts.
- *Judge* the process of 2D Animation.
- *Plan* the process of 3D Animation.
- *Practice* Social Networking via Internet.

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## Timeframe



### How long?

This course will be completed within "2" classes.  
This course is of "1" credits.  
4 Hours of study time is required for this unit.

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## Study skills



This is a totally practical oriented course.  
Hence, you should have access to personal computer or personal laptop for better understanding of this unit.  
Each and every options are explained step by step in the course material.  
Apart from this course material, the learner has to adopt the tendency of learning from multiple sources i.e.,

- Internet tutorials
- Video tutorials on YouTube
- Collaboration with people working in the industry etc.

Only classroom study will not make you a professional. You have to be active to grab the opportunity of learning wherever you get a chance.



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## Need help?



Help

In case of any help needed you can browse the internet sites like youtube.com for video tutorials about the subject.

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## Assignments



Assignments

There will be some assignments at the end of each unit.

These assignments are mostly practical based and should be submitted in CD or DVD. Theoretical assignments are to be submitted neatly written on A4 size sheet.

All assignments will be submitted to Study centre of Odisha State Open University or as directed by Program Co-ordinator.

All assignment should be unit wise on separate CD/DVDs clearly mentioning course title and unit on Top. Theoretical Assignment will be neatly filed or spiral bind with cover clearly mentioning necessary information of course, student detail on top.

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## Assessments



Assessments

There will be few assessment questions for each unit.

All practical assessment will be submitted to OSOU.

Assessment will take place once at the end of each unit.

Learner will be allowed to complete the assessment within stipulated time frame given by the university.



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## Video Resources



This study material comes with additional online resources in the form of videos. As videos put in human element to e-learning at the same time demonstrating the concepts visually also improves the overall learning experience.

















You can download any QR code reader from Google Play to view the videos embedded in the course or type the URL on a web browser.

# Getting around this Course material

## Margin icons

While working through this Course material you will notice the frequent use of margin icons. These icons serve to “signpost” a particular piece of text, a new task or change in activity; they have been included to help you to find your way around this Course material.

A complete icon set is shown below. We suggest that you familiarize yourself with the icons and their meaning before starting your study.

			
<b>Activity</b>	<b>Assessment</b>	<b>Assignment</b>	<b>Case study</b>
			
<b>Discussion</b>	<b>Group activity</b>	<b>Help</b>	<b>Note it!</b>
			
<b>Outcomes</b>	<b>Reading</b>	<b>Reflection</b>	<b>Study skills</b>
			
<b>Summary</b>	<b>Terminology</b>	<b>Time</b>	<b>Tip</b>



# Unit-1

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## Desktop Publishing

### Introduction

*Desktop Publishing* i.e. *DTP* is the trend of today's world in the segment of printed communication. There were days when printing technology and computers were costly and beyond the reach of common man.

Desktop Publishing is the process of creating documents using Digital techniques. There are specialized software's available for creating contents. The presentation and documents created out of computer designing software gives a good and professional outlook of a page layout. Contents are arranged in a very neat, clean and aligned manner.

It is used from large scale printing units to a small DTP centre's in a corner of a village or city. Apart from advancement in the software's for Desktop Publishing, there are lots of advancements which have occurred in the printing machinery segment. Lots of manual labour has been replaced by machinery which gives a lot more perfect output with minimal error.

Computer software's are designed with lots of scope in typography which is called "Fonts" in the computer terminology. The output design can be decorated with stylish Fonts as per the need of the theme. A single person gets the capability and power to create a best looking documentation with varieties of input data on his own. Any person who has creative skills and interest can learn Desktop Publishing on the comfort of his/her own and create output equal to Industry Professionals.

In this unit you will learn about Desktop Publishing and the various software utilized in it.





## Outcomes



### Outcomes

#### Upon completion of this unit you will be able to:

- *Describe* the concept of Desktop Publishing.
- *Identify* the open source software used in Desktop Publishing.
- *List* Digital Terminologies.
- *Identify* design tools of various software.
- *State* the technical aspects of designing.
- *Assess* the interface of various Desktop Publishing software.

## Terminology



### Terminology

<b>Analog:</b>	It is relating to or using signals or information represented by a continuously variable physical quantity such as spatial position, voltage, etc.
<b>Digital:</b>	Digital describes electronic technology that generates, stores, and processes data in terms of two states: positive and non-positive.
<b>DPI:</b>	Dots per Inch or Pixel per Inch used as resolution for designing and printing purpose.
<b>RGB:</b>	Red, Green, Blue. These colours symbolises Primary Colours.
<b>CMYK:</b>	Cyan, Magenta, Yellow, Black. These colours symbolises secondary colours which are used for printing.

## Introduction to Desktop Publishing

Desktop Publishing is not limited to creating contents related to text and office documentation only. It has spread its wings from text to advanced graphic presentations. Graphical presentations may be used in creating sales graphs, using image processing in designs and many other latest techniques.

It plays a much bigger role in advertising segment for preparing visual campaigns to promote Products and Services. You see lots of hoardings, banners, posters etc. all over roads, shopping



complexes, business house etc. They are all the creation of advanced technological software's in Desktop Publishing.

## History of Desktop Publishing

The year **1983** saw the sunrise of the Desktop Publishing for the first time when **James Davise** developed a code in Philadelphia. It was for a community newspaper. In olden days, software's were called *Programs* which were written in codes. The program was *Type Processor One*. It ran on computers which had a Graphics card on WYSIWYG display. In 1984, the software was released in open market commercially by Best Info.

The major breakthrough of Desktop Publishing was in the year **1985** when Apple's *Laser Writer Printer* was introduced in the market in the month of January. In the same year, in the month of July, *PageMaker* software was launched into the market by *Aldus*. PageMaker has been designed in such a way that documentation of hundreds of pages can be done with convenience.

"*Desktop Publishing*" term is a contribution to the founder of Aldus Corporation, **Mr. Paul Brainerd**. In the world of expensive software and equipment's related to colour printing techniques, PageMaker was like an affordable solution to the artists and designers who sought computer as the future tools and technique of advanced designing.

Apart from the introduction of Desktop Publishing in those days, people faced lots of problems like small screen size, monochrome monitors, inability to use letter spacing, line spacing etc. The computer display out did not accurately match the print output. The developers have strived a lot to create graphic designing software's which were compatible with hardware's, operating systems and output devices like printers. There have been lot of developments step by step which has given scope to the Desktop Publishing Industry to flourish.

Now in the 21st century, Advanced & High speed Computer system emerged and Advanced and High End Offset printers also came into existence. These developments led to a lot of scope in Printing Industry. Anything can be designed & printed and printing can be done anywhere. We can print on paper, we can print on canvas, print on glass as well as we can print on wood, iron and steel also. Desktop Publishing is already on an advanced mode and is marching ahead to set new avenues for high standard design and printing.



## Digital Artist and Graphic Designer

Art and Science have helped people to attain a higher standard of living. But, there are differences in the process of an Artist and a technical person.

The people who were called Artists now use Digital technology and are called *DigitalArtists*. The communicators or advertisers who used manual techniques to communicate now use Digital techniques and are called *GraphicDesigners*.

A **graphic designer** is a professional within the graphic design and graphic arts industry who assembles together images, typography, or motion graphics to create a piece of design. A graphic designer creates the graphics primarily for published, printed or electronic media, such as brochures (sometimes) and advertising. They are also sometimes responsible for typesetting, illustration, user interfaces, and web design. A core responsibility of the designer's job is to present information in a way that is both accessible and memorable.

Graphic Designers create the bridge between the product company and the consumers of the product. He portrays the benefits of the product and services of the company in a visually interesting and persuasive format to attract the consumer. The simplicity of the design and communicative approach makes the design successful. These kind of people do not create designs on their own. They have to study the product, the people and the market and create output as per the requirement. Graphic Design is basically more of a science rather than an Art. The following categories of people can be termed as a Graphic Designer:

- Web Designers
- Desktop Publishing (DTP) Designers
- Packaging Designers
- Motion Graphics Designers
- User Interface Designers



A **digital artist** makes art using the computer as his or her primary tool. He/she is a person who creates Art and Design as per his/her own capabilities and idea. This art can be intended for a CD-ROM, video game, or website; but almost as often, it is printed out and hung on a wall. In many places, the customer or the creative designer brief him to create designs and art according to a particular requirement. He has to keep updating his skills, whether he/she is an illustrator, a graphic designer, an animator, or a game designer, the softwares used by them constantly evolve. The following categories of people can be termed as Digital Artists:-

- Background Designers
- Matte Painters
- Layout Designers
- Character Designers
- Concept Artists
- 3D Artists

In today's world, there has been a amalgamation of both the Digital Artist and Graphic Designer sector. A company wants to employ a person with the capabilities of both segments. Hence, the work of a Graphic Designer has become more challenging, as he is required to be creative on one hand and technical skilled on the other hand.

## Applications of Desktop Publishing

Desktop Publishing is used in creating the following works:-

### 1. Designing for Advertising Campaigning

In promotion and advertisement of a company, designing the identity of the company is very important. It is the looks and feel of the campaign which drags the customer to a company. Information documents such as brochures, leaflets, fliers, magazine advertisement, newspaper advertisement, visiting card, danglers, posters, flex banners etc. are done using Desktop Publishing software's.

### 2. Designing for In-house Stationary

A company requires in-house stationary items like letterheads, catalogues containing the details of the product, business cards, directories, Annual reports etc. These are also designed and maintained in a very systematic manner in companies.

### 3. Designing for Publishing Industry



Desktop Publishing is mostly used in Print and Publishing Industry. Books, Magazines, Newspapers come on daily, weekly and monthly basis. These documents will last ever till the existence of the world. Every time new designs and designers evolve out of these Production companies. It is innovative, creative and variety which rules the design world today. New comers are welcome with greatness as equal to experienced professionals. The extreme competition compels the designers to be up-to-date in technology and create new designs every moment.

#### **4. Designing for Project Reports**

Student's life today is full of projects and reports. From school to college even in offices lots of project, research, etc. are required to be documented uniquely by each and every student. Hence every year lots of designs are made out of same content, but presented in a creative way using advanced designing techniques.

#### **5. Designing for Resumes**

A Resume means Bio-data. It is information of the candidate for a particular job. Today, Resume writing has become one of the expertise service activities. Resumes, Bio-data's, Curriculum Vitae etc. are now even termed as Profile Design of a Candidate. Simple information is represented in a colourful and graphical way by the designer which makes the information elaborate and easily analysed and understandable.

#### **6. Designing for Web Pages and Smartphone**

Designing is not limited to the print technology itself. It is used in lots of on-screen presentations also. Designs related to on-screen are PowerPoint presentations, Webpage design templates, sales graphs, production graphs etc. Even Smartphone App design and layout is also done using Desktop Publishing. Blog designs are done using readymade templates available through the WebPages. These template designs are built by the designers and sold as stock to the requisite candidates.

### **Job prospects after learning Desktop Publishing**

Desktop publishers require above average computer skills, including the ability to operate and utilize desktop publishing and graphic software programs to complete jobs. An eye for detail, organizational skills and artistic ability are all skills that desktop publishers utilize on a daily basis. Publishers are expected to follow through to the end of each project, including proofing, correcting errors and finalizing documents for publication. The skills necessary for desktop publishing may also qualify a publisher



for a job in graphic design or as a web designer. There are lots of opportunities for a designer in this era. The digital medium has enabled to develop designs for all the categories which used hand drawn paintings and drawings in the past. These are the following employment areas where a person with an in-depth of knowledge of Desktop Publishing can opt for:

**Job Title :- Graphics Designer**

- Advertising Agencies
- Textile Designing Agencies
- Illustration / Book / Magazine Publishing Industries
- Designing for Web Page Interfaces

## **The Basic Software used in Desktop Publishing**

### **Open source software's for image editing and vector based designs**

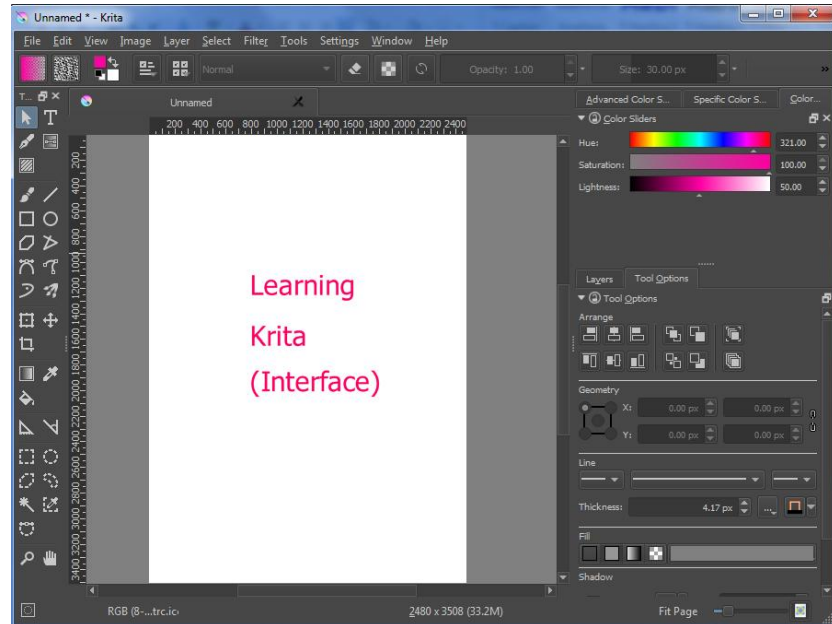
There are lots of open source software's available on internet today which enables any person with availability of computers to download them and use it. The facilities available in these kind of software's are almost at par with the commercial software's even though they are not 100 percent equal. These kind of software's act as a stepping stone for the budding designers to enter into the world of Digital design.

#### **Krita**

*Krita* is open source raster based software which is used for creating Digital Painting and also capable of creating Image editing. Digital Paintings is a big market and players like Photoshop used to rule it and still is one of the leader in the Industry. But people from different art communities have created this kind of open source software's with independent coding systems. Developers from all around the world can open the code of the software and create new options as per their expertise and create advancement to the software.

The digital paintings created out of *Krita* are very magnificent and remarkable. People from all around the world use *Krita* to create digital art, paintings, comic books, illustration for books, children's magazine cover designs etc.

Software is only about tools and techniques, it is the creativity of the person which makes the output created out of the tool a master piece.



Screenshot

### Features of Krita

- It has lots of varieties of brushes which an artist can use for creating a great art content.
- The screen of Krita is compatible with desktop, laptops and touch screen monitor and touch screen devices.
- Brushes can be used with pressure sensitivity options while drawing using Wacom tablets.
- Textures of seamless size can be created with extreme clarity.
- OpenGL system is used so that the colour depth can be of maximum quality.
- Previews can be seen on real time mode for the filters applied using Krita.
- It has ability to utilize layer capabilities.
- It can import files of some formats.
- It can save or export the file in different formats like JPEG, TIFF etc.

### Inkscape

Inkscape is a vector graphics editor which is available as open source on the internet. Vector graphics is the most powerful source of using design works on a digital platform. Vector graphics



- Picmonkey
- Splashup
- Picfull
- Fotor
- Seashore
- Imagetricks

**Vector Based Editing Software's:**

- Vectr
- SVG Edit
- Pixlr
- Paint.net
- Sumopaint

## Commercial software's for Image Editing and Vector based designs

There are lots of commercial software's available for Image Editing purpose. Softwares like Photoshop, CorelDRAW, and Pagemaker etc. are used for designing purposes. These software's have very good tools and techniques as compared to open source software's. Students can learn these software's by downloading the trial version from the Internet. After learning, whoever is interested to work on these software can purchase the license from the company.

### Photoshop

*Photoshop* is the first preferred commercial software used in the Industry for creating designs. Almost every person in the design industry use Photoshop. Photoshop contains all tools and elements related to Image Editing. Advertisement content creation, personal designs like greeting card, invitation card etc.

In technical terms, designing in computer is called Graphic Designing, Digital Image Processing and in combination termed as Desktop Publishing.

Photoshop has got variety of tools which include retouching tools, which can restore the damaged sections of a photograph, drawing and painting tools helps an artist to portray his creations on digital canvas with rich quality of output, web tools helps a web page designer to create templates for a better webpage. Hence, Photoshop is a perfect commercial package for a designer. It has the capability to finish any designing task effectively and efficiently.

### CorelDraw

*CorelDraw* is a vector based commercial software. This software is one of the leaders in commercial designing segment. It is the product of Corel Corporation. The vector capability of the software has advantages like no pixel distortion while enlargement, less





memory consumption for bigger size designs and smooth functionality while operating.

It gives the designer the speed and joy while working in CorelDraw. The creative imagination of the designer quickly converts in form of output with its comprehensive tools and techniques.

CorelDraw is especially used in creating the following types of designs:

- Cover design
- Logo design
- Banners
- Illustration
- Leaflets
- Brochures
- Stickers
- Card Design
- Visiting Card
- Identity Card

Hence, CorelDraw is mostly preferred by Commercial artists.

### **Illustrator**

*Illustrator* is the product of Adobe Systems Incorporated. This software is a boon for artists who like to draw free hand and create shape related art. The tools of *illustrator* are excellent and have got varieties of scope in drawing geometrical and non-geometrical shapes. The concept of using this software is equivalent to using CorelDraw. Most of the tools and techniques of *Illustrator* is similar to CorelDraw. Hence, it makes learning for the student easier. Learning any one of *Illustrator* or CorelDraw enables him to use both the software's with ease and utilize the benefits of both the software's.

*Illustrator* is basically used for creating

- Cartoon characters
- Comicbook illustrations
- Book cover
- Magazine cover
- Decorative-Shirt design etc.



This is also a vector based software and the utilisation of vector software's in any operating system is smoother and faster. The options work with perfection and takes very little time to executive as compared to a Raster based software. Hence, Illustrator is mostly preferred by Creative Artists.

### **PageMaker/In-design**

*PageMaker*, which is now known as *In-design* is a perfect package for creating documentations. It is a perfect blend of design and documents. This software is mostly used in the print and publication industry where books, magazines, newspapers etc. are published.

If we have to a make a book of 150 pages which required varieties of designs and placing of common elements in various pages, In-design /PageMaker is the best software to do so. This software is a master in creating page layouts. Any type of layout containing images, text, graphs, quotes, tables etc. can be designed efficiently using these software's.

This software has the capability to import design in many formats from other software's. Designs done using Photoshop, Corel CorelDRAW, Illustrator, Krita, Inkscape, etc. can be imported into In-design/PageMaker and composed to create a final output.

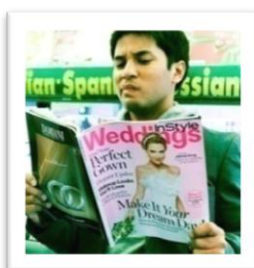
PageMaker and In-design have the capability to handle text, raster graphs and vector graphics uniquely rather than any other software.

## **Commonly used terms and elements of Desktop Publishing**

### **Resolution**

*Resolution* is the number of square dots i.e. pixels used on the computer screen. The resolution required for printing differs as per the requirement of the customer. For example, if a person wants to take a print of a subject which he needs to read from nearby of the eyes, then the resolution of the print required is 300 pixels/inch or 300 DPI (Dots per inch).

If the requirement of print is to be read from a far distance like a flex or a hording then the resolution needed for the print is 72/100 pixels inch.



Reading a Magazine from nearby the eyes *Resolution needed: 300pixels/ inch*



Watching a hoarding from a distance *Resolution needed: 72/100 pixels/inch*

Imagine a computer monitor of 19" in which we have to design a banner or hoarding of 10' by 10'. How can a 10' by 10' design fit into the monitor of a 19" medium? Here is where the scaling works in computer which we term as resolution.

When we say a resolution of 72 pixels per inch, then the pixel size of a 10' by 10' banner design would be-

$$10' \times 10' = 120 \text{ inch} \times 120 \text{ inch} (1' = 12 \text{ inches})$$

$$(120 \times 72) \text{ pixels} \times (120 \times 72) \text{ pixels} = 8640 \text{ pixels} \times 8640 \text{ pixels.}$$

This is the size which is taken in Digital software to create an image of 10' x 10' with 72 pixels/inch of resolution. More pixel size will result in slow operation of the computer hence less resolution is taken for larger size printouts.

Resolution of an image has to be considered while designing a commercial design. We have to choose the appropriate size of image while placing it in an artwork. If we use an image with lesser resolution (for example 300 pixel/inch) in a document, then the print quality of the image will get distorted. Hence, while designing resolution, mega pixels and types of camera for photography plays a very vital role.



**Activity**



**Group Activity**

**Reference Collection**

Before starting the practical study, collect references of the output which you want to design. Make a folder and collect biscuit cover designs, Incense stick cover designs, good cover designs of products which you purchase, newspaper and magazine advertisement cuttings etc. Collect all the designs which you feel are good and place them in a folder.



Share the collection in the Counselling session and have a discussion to determine the best design out of all the design collected by the candidates of the batch.

## CMYK

*CMYK* stands for *Cyan, Magenta, Yellow and Black*. This is the colour mode which is used for printing documents. These four inks are used for printing a multi-colour document. So, whenever we create a document in software for printing purpose, we have to choose *CMYK* as the colour mode.

## Alignment

An operator will become a perfect designer if he sets the alignment of text and images in a correct manner. The types of alignment are left, centre, right, justified and full justified. The alignment is done according to the requirement of the document for i.e., justified for paragraphs, centre for headings etc.

## Bleed

After the print of the document is done in the press, the edges are trimmed or cut from the corners to give a perfect look. The area of the page which will get cut is called *Bleed*. So, while designing the designer has to keep in mind the matter which falls on the corner of the documents. Our required designs should not overlap on the bleed area.

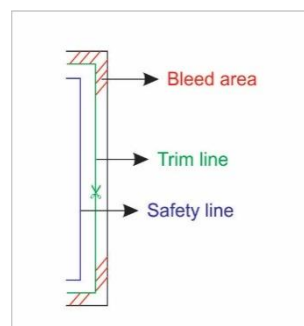


Fig 1.3Bleed area in a design

Attribution: Drawn by Author

## Concept

While preparing any design or documentation, the pre-production part of the work is called the *concept*. Concept relates to the thoughts and brainstorming sessions a designer does with clients to get an overall idea of the output before starting the original production of work.

## Cropmarks

A '+' mark is created on the corners of a page or document which is called the *cropmark*. This crop mark acts as a guide to cut the documents. Basically crop marks are used in visiting card, invitation card designs etc.

## Die-cut



**Title-**A visiting Card design [Using Diet Cut in the “n” shape]

**Attribution-** Nyla Smith

**Source-** [nvision-that.com](http://nvision-that.com)

**Link-** <http://nvision-that.com/design-from-all-angles/d-is-for-die-cutting>

Now-a-days, prints are not restricted to 4 sided pages. Designs are done as per various shapes required and then the paper is cut as per the design. So, for cutting as per the design, a die is made which includes of a positive and a negative. Some examples of documents or designs of die-cut's are dangler's hanging in a shop of various shapes, packaging designs of biscuits, cartons etc.

## Export

There are various software's used for creating designs and a designer works on different software's for different utilities. In this case, the design needs to be *exported* in various formats as per requirement. There are some universal formats like PDF which can be viewed on any system with Adobe Reader immaterial of whatever software the design has been created.

## Grid

*Grid* is a very important helping option for an Artist who wishes to do designs based on Geometry. Grid is a formation of horizontal or vertical dots or lines which is displayed as a guide and does not occur in the printouts. It helps in maintaining the structure of the content.



### **Gutter**

A Gutter is a space which is left over for stitching or stapling in the process of binding of a book. The space required in between two facing pages is more than the space required in the corners. A designer has to think and design as per printing technology guidelines.

### **Layers**

Layer gives organisational capability to the designer which helps him to add or remove elements from his design work at any time preferred by him. Layer also helps in placing common contents in design without repeating or duplicating the content.

### **Margin**

Every document is given margins as per the content of the user/writer. Margins enable to place the text or images inside a particular area so that it does not get cut or trimmed in the printout from the corners.

### **Proof**

Before submission of a final document to the next stage a proof reading is done to identify spelling mistakes, grammatical mistakes, spacing etc. It is basically done by the user and in some cases proof reading is made by third parties who are expert in the same.

## **Future of Desktop Publishing**

Desktop Publishing is an evergreen Industry and it will be a necessity till the mankind exists. Designing and printing is required in all phases of life. There was a period where Desktop Publishing was limited to designers. But now-a-days, using software's Desktop Publishing is used by a school kid to a high end professional for making school projects and business sales proposal respectively.

The demand for DTP operators are increasing day by day. People are always greedy for new and quality designs. Each and every new user brings variety in content with the mixture of his knowledge and creativity. The scope and career options in Desktop Publishing is beyond the limitations of sky.

Due to the utilisation of faster internet and Digital techniques, designers are hired from across the continents as well. A good designer with an updated knowledge of Desktop Publishing has a lifelong scope across the world. The payment structure of



designers who are good in design and software's are paid very handsomely.

Traditional designing is replaced by Digital designing. It is the knowledge of geometrical drawings and updated software's which makes an ordinary person a useful resource for designing. People of all categories have a taste and design sense in the corner of their minds. Hence, Desktop Publishing has become immensely popular and has a great future.



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## Unit summary



### Summary

In this Unit you have learned about the basic of Desktop Publishing and about the open source software's and commercial software's used in the Industry. Now you can download the open source software's which are available on the net for free of cost and practice the possibilities of creating a digital content.

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## Assignment



### Assignment

- Design a visiting card for any company utilizing your creativity and desktop publishing skills.

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## Assessment



### Assessment

- Write the full form of DTP?
- Write the full form of RGB?
- Write the full form of CMYK?
- List any 3 job prospects after learning DTP.
- Name any three raster based open source software's.
- List three vector based open source software's.
- Write the name of two commercial raster based image editing software's.
- List 10 types of works which can be done through Desktop Publishing.
- What is the resolution required to print for documents which are read nearby our eyes?
- What is the resolution required to print for banners and flex which are viewed from a distance?





**Objective Type questions:**

**State whether the following are True/False:**

- The hardware's used for Analog signs are very powerful.  
\_\_\_\_\_
- Card Design is the application of Desktop Publishing.  
\_\_\_\_\_
- Sumopaint is a Raster Based Image Editing Software.  
\_\_\_\_\_
- Illustrator is used for creating cartoon characters.  
\_\_\_\_\_
- Resolution is the number of square dots used in computer.  
\_\_\_\_\_
- Krita is commercial software used for creating Digital Painting\_\_\_\_\_

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## Resources

- [www.col.org](http://www.col.org)
- [www.wikieducator.org](http://www.wikieducator.org)
- [www.slideshare.net](http://www.slideshare.net)
- [www.ebookbou.edu.bd](http://www.ebookbou.edu.bd)
- [www.knowledge](http://www.knowledge)



## Unit 2

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# Multimedia Animation and Special Effects

## Introduction

Multimedia is a representation in form of audio and visual to convey information or messages in a convenient manner. Now-a-days all forms of data are processed in the digital way using computers. Computers help to create the data, store the data, process the data and transmit it to various other platforms and devices.

## Outcomes



### Outcomes

#### Upon completion of this unit you will be able to:

- *Describe* about Multimedia.
- *Illustrate* the history of Animation.
- *Exhibit knowledge* of 2D & 3D Animation and its process.
- *Explain* Visual effects in films.

## Terminology



### Terminology

<b>Animation:</b>	An illusion of motion.
<b>2D:</b>	Two dimensional drawings represented on a flat surface.
<b>3D:</b>	Three dimensional objects created on an open space.
<b>VFX:</b>	Visual Effects used in films made up of Animation and Real time mixing



## Basic Elements of Multimedia

As the world is made of five elements i.e., Space, Air, Fire, Water and Earth, in the same way a Multimedia presentation is made up of five elements i.e., **Text, Graphics, Animation, Video and Audio**. The utilization of all the elements creates a beautiful composition of output to create a treat to the eyes of the audience as well as pass on information which can be understood in a very easy way.

Knowledge is the key of everyday happiness. And knowledge is attained by better understanding of a subject. Multimedia applications help to understand matters with comfort.

## Introduction to Animation

“*Animate*” word means “*to give life to*”. We call something has life if it has got movement or changes in its shape and structure. Animating an object means that, the movement to the object is given by some external force, not itself. Presenting information in an animated manner gives more visual impact and understanding in comparison to static graphics.

There are various principles of animation which has to be followed for creating a meaningful and appealing subject in Animation.

Animation is a combination of art and science. What to do is the art here and how to do is the science. An output of animation requires lots of trial and errors. For getting a perfect output as desired needs lots of knowledge and information about the technical process of animation. Lots of software’s are available in the market for creating animations. An animator has to learn and apply the techniques as per his need.



### Tips and Notes

- Animation learning process is a little different from all other learning process. Why? Because, in Animation  $2+2=4$  is always not correct. For i.e., in a film, if we have Amitabh Bachchan as Hero, it is anticipated that the film will be a huge hit or an excellent film. But when the output comes, there is no guarantee that all the 100% of his films will be a success. Some films fail disastrously also.
- Animation output is not a readymade factory product whose production process is followed by coming generations like production of Bike, Biscuit etc. The production process varies, the customer taste changes, the market distribution network



condition changes etc.

- People enter into Animation industry with high end dreams of producing flicks like Spiderman, Hulk, etc., but everyone is not able to do it. It depends upon your learning capability, the opportunity you may or may not get, the process of patience of gaining opportunity, your area where you reside or be able to migrate to, are all the factors which will decide in future that whether you will be able to sustain in this industry or not.
- So, Study and learn to make big and be prepared to grab the opportunity whenever it comes to you.

## Definition and Perception

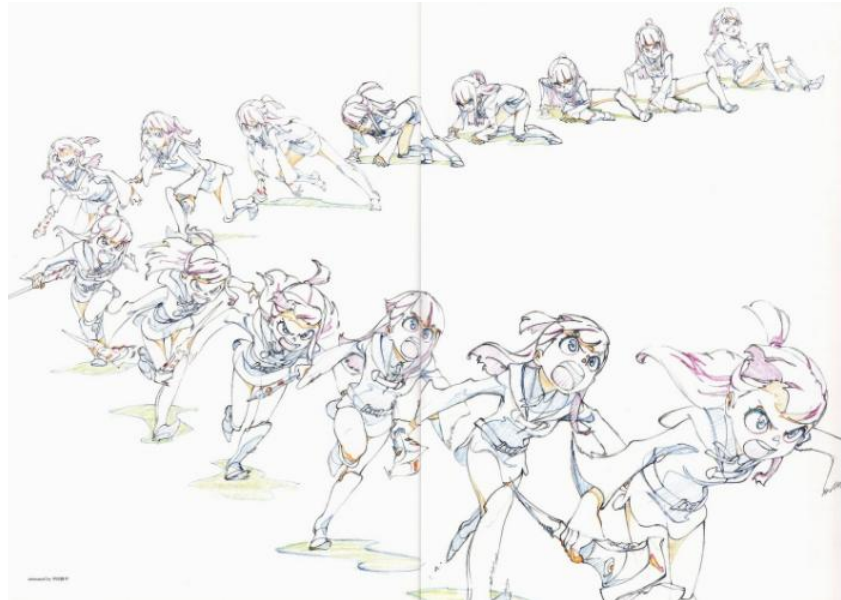
*Animation* is an illusion of motion created when a sequence of frames consisting of drawing, painting or photographs are arranged in a systematic and planned manner.

A moving sequence of image tells a broader story than a single image. Our human process catches the things which are in motion first rather than what are still. It interprets the situation as per the motion because a motion at various times conveys different information at different time.

Animation came into existence years ago. It started with pencil drawings, which is called 2D Animation. In 2D Animation, an animator has to draw each and every frame. After that came CGI (Computer Generated Imagery). Computers made the animation process lot easier and attractive.

Our eyes generate images to the brain which is processed. Now, if the movement is continuous, then only the information flow is maintained. If the flow of images is not continuous or abstract, then the movement will flicker and create disturbance in understanding.

A figure is shown below which shows a jumping sequence of a body. The frames are arranged in a systematic way of the flow of jump.



**Title-** Jumping sequence drawn frame by frame

**Attribution-**

**Source-**lostmarble.com

**Link-**

<http://www.lostmarble.com/forum/viewtopic.php?f=7&t=27802&start=75>

Hence, an artist has to maintain the movement speed of Animation. There are two types of speed, one is called *images per second* and the other is *differential images per second*.

No. of images per second	No. of differential images per second
24 frames per second	24 frames per second
A,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P,Q,R,S,T,U ,V,W,X (example of images)	A,A,A,A,B,B,B,B,C,C,C,C,D,D,D,D,E,E,E,E ,F,F,F,F (example of images)
In the above, there are 24 different images per second.	In the above, there are only 6 different images which are repeated 4 times each to create 24 images per second output.

**Fig 2.2 Table showing types of movement in an animation**

**Attribution :** Drawn by Author

Animation is an evergreen industry. It will be existent till humanity exists as it contains all the elements from education, infotainment to Entertainment.



## Help

- Go to youtube.com and search some Animation videos
- Go to google.co.in and search for the First Animation Film
- Go to google.co.in and search for the biography of Walt Disney.

## Terminology in Animation

### Append

In animation, if we need to add frames either in the beginning or in between or at the end as required, the process of adding key frames is called *Append*.

In the below example, frames D & E were appended in normal frames of A, B and C.

Frames: A, B, C      Appended Frames: A, B, D, C, E

### Camera

*Cameras* are used in Animation to add movement to the space where the backgrounds and characters are placed either in 2D or 3D. A camera can show the same object in different angles to give the viewer an extra view. As per the story, the moving of camera gives a great feel.

### Frame

A representation of an image in a sequence of image is called *frame*. We can say that each image in an animation sequence is a frame.

### Keyframe (key)

Computer Generated Animation has keyframe. Computer software's have the capability to generate the in-between frames by itself from the extreme positions given by the user. The extreme position is called *Keyframe*.

### Frames per second (FPS)

It is the number of *frames in one second* which maintains the speed of the animation. It can be defined by the user in the software.

### Transition time

The time which is in-between the keyframe is called *transition time*.



## Transition type

*Transition type* defines how the object will transform from one keyframe to the other keyframe.

## Update keyframe

The keyframe can be changed from time to time as per requirement which in turn changes the animation. We can *update keyframe* at any time.

## Timeline pane

*Timeline Pane* is the bible of an Animator. He can plan, visualize and control the total animation according to his ideas. It consists of keyframe, layers, frames, locking system, hiding system, transparency or opacity control etc.

## Current time indicator

In the timeline, we have got frames i.e., 1, 5, 10, 15, etc. The time or frame at which we are currently in is indicated by a line which is called *current timeline marker*. We can interactively move this line and view the various timeline action of the animation.

## Cluster

*Cluster* is a group of keyframe nearby each other. It makes easy for the animator to move a cluster than selecting a group of frames each time. We can expand the cluster and adjust the individual keyframe as well.

## Overlay

*Overlays* are on-screen text or image elements that add extra detail and information to the animation. Text overlays include titles and paragraphs. Images include watermarks and full-screen or centred images. Dynamic text overlays include text that changes based on whether it is pulling properties from the map's camera, time, and/or range settings.

## Extremes

The main drawings in 2D Animation is called Extremes. They are drawn by the Senior Animators.

## In-betweens

These are the drawings which are drawn in between two extreme frames. They are mostly drawn by Junior Animators.

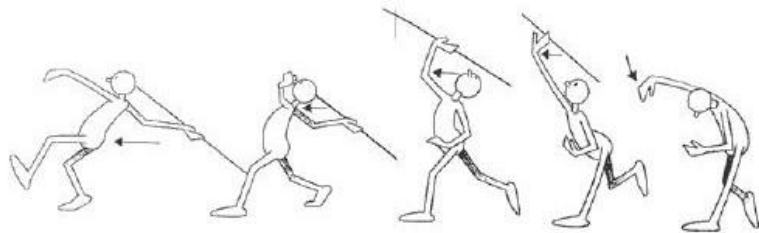


## Introduction to 2D Animation

2D means TWO DIMENSIONAL.

2D animation is divided into two parts. One is called *Classical Animation* and the other is called *Flash Animation*.

In **classical animation**, the artist or the animator draws each and every frame to create an illusion of motion. It is the traditional process where hundreds of animators create thousands of drawing to create an animation film. Animators used to draw frames which are arranged in a sequential manner and played at a speed of 24 frames per second in a projector to create motion.



**Title- Fig 2.4 2D animation**

**Attribution-**

**Source-** animationbrain.com

**Link-** <http://www.animationbrain.com/follow-through-overlapping-2d-animation-principle.html>

In **Flash animation**, computer is used and the tools and techniques are in digital form. From drawings to animation, everything can be done through computers. Computer software has an advantage of optics animation where the in-between frames are automatically generated from the keyframe. It reduces the animator's time of work and creates a perfect calculative output.

With a mixture of traditional process of animation and CGI (Computer Generated Imagery) a complete animation production is carried out.



### Activity

- Go to youtube.com and Watch some clips of a 2D Animation film. Some name of the films are as follows:
- Snow white & the Seven Dwarfs, The Jungle Book (2d) etc.



## Heritage of 2D Animation

Animation is an age old profession which started from an unknown seed and has grown to become a huge tree which is a multi-billion dollar industry now. The output of animation today had been the dream of animators of the olden days.



**Title-**Fig 2.5 the traditional Zoetrope

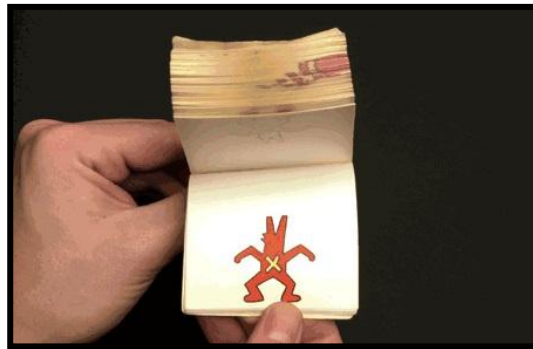
**Attribution-** [Andrew Dunn](#)

**Source-** <http://www.andrewdunnphoto.com>

**Link-** <https://commons.wikimedia.org/wiki/File:Zoetrope.jpg>

Persistence of vision, which displays a series of images to form a movement, was known to the human being in the 1800's.

*Zoetrope* was a device which was invented that displayed a series of picture as a motion which was also called “wheel of life”. Zoetrope was made up of a cylindrical shaped object which had an axis of rotation in the centre. A series of drawings were pasted along the cylinder. Outside was a small frame where people would peep into with their eyes. When the zoetrope is spun, the images looked like a motion in the single frame area. This led to the invention of a new type of industry to provide education as well as entertainment which we call as Animation Industry today.



**Title-Fig 2.6 A Flipbook or “Kineograph”**

**Attribution-**

**Source-** flickr.com

**Link:**

<https://www.flickr.com/photos/cambodia4kidsorg/77297367>

The next step to visualization of motion was *flipbook*. This was a bit easier process than zoetrope. It did not need such solid equipment's. Flipbooks can be created from a sequence of pages on our own. An artist would draw a series of drawing on the flipbook and then by scrolling the flipbook, the animation can be seen.

Flip book is also called “*Kineograph*” in the olden days.

So, step-by-step from manual process things changed to digital. 2D Animation software's were a big breakthrough in the Animation world. Animation software's like **Toon Boom, US Animation, Animo** etc. created a lot more comfort zone for the animators to create contents. In olden days, only trained artists who can draw well had the scope of becoming an animator, but today any person with creative interest and technical knowledge of Animation software can create a piece of Animation content on his own or with a team.

In history, people struggled to survive with animation knowledge, but today people struggle to create excellence in animation. It is all about passion and quality and not limited to bread and butter only. Excellent and creative animators have raised much beyond



history to create a great fortune for themselves as well as Animation lovers in form of giving great Animation Films.

## Process of 2D Animation

The procedure of animation is divided into three parts:

1. **Pre-Production**
2. **Production**
3. **Post Production.**

### Pre-Production

#### Concept:

The production of an Animation, an Advertisement or any documentary starts with a concept. The concept can be entertainment, information spreading or education etc.

#### Script:

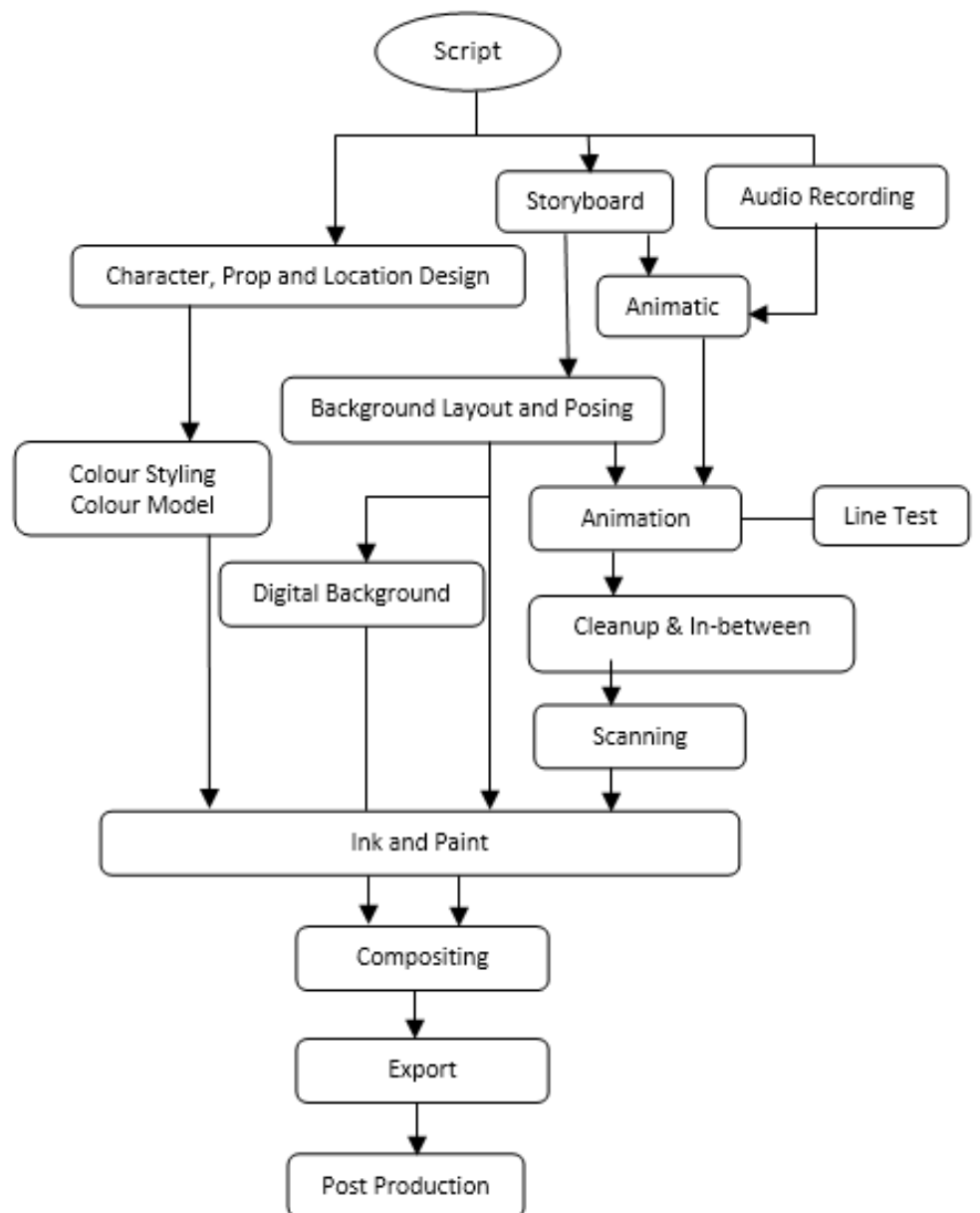
The concept is developed into a story. Then the story is written in form of a script where all the characters, backgrounds, situations etc. are described.

#### Storyboard:

The script is then developed into a storyboard which shows the sequence of happenings in a drawn or visual manner. This helps in understanding the story in a better way and provides plan for creating the animation scene-wise.

#### Audio Recording:

Before starting the actual animation process, the sound is roughly recorded and arranged scene-wise. The recording includes the narration, character voice over dialogues, background music etc.



**Title:**Fig. 2.7 Flowchart of 2D Animation Process

**Attribution :**Drawn by Author

### **Animatics:**

A rough animation is done out of the storyboard where still or semi animated substances are placed and matched with the sound. It is also called "*leica reel*". These animatics help the animators to fit the animation or draw the animation according to the requirement of time.



### **Design:**

Before starting actual animation, lots of still designs have to be made. Background art sketches, character design art sketches with colour shades are made in plenty and then the director decides the final style of design to adopt in the animation.

### **Colour Styling:**

There are lots of colour styles. One is called *flatcolouring* where only flat colours are used. Second is *flat and patch colouring*. Here the patch is also a flat colour but in the shades of dark and bright which adds depth to the subject. Third is called *gradient shading*. This involves gradient shade of colours. This is very difficult to apply in each and every frame of character animation. Basically, gradient shades are used in Background matte paintings.

## **Production**

### **Layout:**

Layouts are the detailing out of the storyboards. A storyboard is formed into a scene which is divided into Background, Props, Character animation etc. It also gives information about the camera movement in the scene. From this stage, the work of different artist and animator is established by director and distribute it to them with a deadline.

### **Background painting:**

From the pre-production stage of design, Background sketch is collected and developed by the Background painting artists. They are also called *Background Matte Painters*. They are called so because background paintings are done layer wise which can be changed at any time as required in the scene.

### **Animation:**

Animation is planned using an X-sheet called the *Exposure sheet*. Here comes the main action of the animators where they use their knowledge to present the characters in form of movement. It is a very hard working job which requires lots of concentration and working hours.



### **Exposure Sheet:**

*Exposure sheet* is like a treasure map where the direction of creating an animation is outlined. It is also called *dope sheet* or *x-sheet*. It is the traditional tool which is used by the animator to plan and organize his work. The X-sheet is a longer paper than A4.

### **Pencil Test:**

After drawing for animation, the line drawings are passed through a pencil test which will display the line of action or animation. If any rectification is required, it is done at this stage itself.

### **Clean-up& In-between:**

The first drawn drawings are conceptual hence rough with lots of outlines and shades. When the drawing passes the pencil test and gets approved, it is passed on for clean-ups. Here the drawings are traced with the perfect outlines which can be coloured through computer software's. Lots of junior artists perform the in-between drawings from the extreme drawings created by Senior Animator.

### **Scanning:**

This is the section or a bridge which connects the manual with the digital. All the hand drawings are scanned and converted to digital image format. Scanners have the capability to straighten the images if even they are in a slanted angle. This is done by reading the peg holes in paper.

### **Light board:**

*Light board* is the board which is specially prepared for Animators. It contains a light, a dish and a scale. The passing light acts as a reference to draw new frames in comparison to old frames to maintain the size and form of the drawings.

### **Ink and Paint:**

The digital drawings are redrawn through computer software's and then coloured as per the pre-production style. This is done in a quite comfortable way using computers in comparison to olden day hand paintings.

### **Compositing:**

This is a place where all the components which are created separately by different artists and animators are mixed to form an



output. The background, the character's Animation, Sound mixing, Special effects, Camera movement etc. are exchanged from the reference images and rough drawings used in animatics.

**Export:**

After the composition, the final step is to render and export the scene. Rendering takes very long time to process all the information and create the output.

**Post-Production**

**Music &Fx:**

Music is the most essential part of an Animation film. Music includes Background music, dialogues, funny effect tracks and all the elements which are required for a scene. For example, Tom and Jerry Animation, the sound effects accompanied by the character's motion gives a complete feel of the situation.

**Editing:**

Editing is the mixture of A to Z output of processes involved in the three stages of Animation. It is the creation of sync of audio, video and the effects in a ready format to create the output.

**Final Output:**

Final output can be created in various formats as desired i.e., for Cinemascope film, for Television, for DVD, for Blue-Ray, for Youtube and so on.



### Case Study

#### First 2D Animation Film

“Snow White and the Seven Drawfs” was the first full length colour feature film created by Disney Studios in the year 1937. This film involved hundreds of artists working for the film in the studio.

#### First full length (CGI) -3D Animation Film

“Toy Story” was the first full length 3D Animation film completely done using CGI (Computer Generated Imagery). In the year 1995, it was produced by Pixar Animation studios directed by John Lasseter.

#### Widely Popular Animation Studios in world

- Walt Disney Animation Studios
- Pixar Animation Studio
- Warner Brothers
- MGM
- Dreamworks Animation
- Industrial Light and Magic
- Bluesky studios
- Cartoon Network Studios

## Introduction to 3D Animation

**3D** means **THREE DIMENSIONAL**.

Today we have 3D software's like **Blender, Max, Maya**, etc. in which we can building a totally 3D structural design of both organic and in-organic object. The whole universe can be built in 3D and give them the look of natural existence.

3D objects use transformation i.e. Move (Position), Rotation and Scale & Shape deformations to create objects. Animating in 3D is used in a technical way where the look and feel of the object remains unchanged till the end. In 2D, the different frames of the same character have got the possibility to differ depending upon the talent of the artist. But, in 3D, once the object is modelled, it can be viewed from any camera angle without affecting the body proportions due to perspective.





## Heritage of 3D Animation

In the early 60's, people created 3D Animation in form of *clay animation* using *stop motion techniques*. 3D puppets or models were created using clay and plasticises. Strings were attached to them which functioned as bones. Each and every move was staged and photographed frame by frame to create an animation. Films like "**Gumby**", "**Wallace and Gromit**", "**Shawn the sheep**" etc. were created by an animation studio named Aardaman Studios.

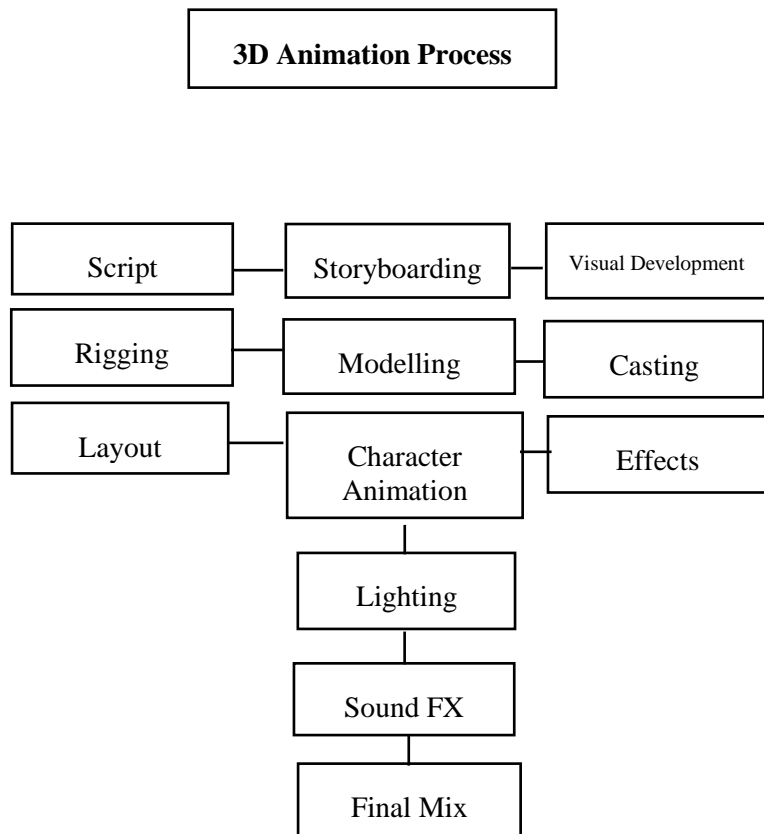
Stop motion animation is a very time consuming process and takes hours and days of hard work to create a perfect output of few seconds only. Stop motion animation was used in bollywood film "TaareZameen Par". It is the feeling which makes the kind of work exciting and passionate.

Computer generated 3D Animation came into existence with **Pixar Animation Studios**. The studio was founded in 1985. It took them 10 years to create "Toy Story" which was the first full length 3D CGI film. 3D film or 3D content required high end computer machineries. From Workstation to rendering frames, the technical aspect consists of 60% of the whole project.

3D Animation is not limited to fully generated animation films. Animation is used in live action films, in Advertisements, in Television, documentaries, educational contents etc. Animation makes the content more informative and interesting to watch.

## Process of 3D Animation

The process of 3D Animation is involved through Computer software's. The process is very long and complex for the artist. The artist has to have the knowledge of creative design with the blend of learning of advanced tools and techniques in the software's. Without the in-depth knowledge of software, the artist cannot bring his imagination into reality.



**Title: Fig 2.8 Flowchart of 3D Animation Process**

**Attribution: Drawn by Author**

### **Concept & Storyboards:**

In the 3D Pipeline, the first and the foremost step required is the *concept* and *storyboarding*. Here, the storyboard artist has got lots of freedom as compared to a 2D storyboard artist. The 3D storyboard artist can give numerous camera angles of a same shot and elaborate the scene to understand in a focused way. The storyboard looks like a comic book page where a sequence of event happens one after the other.

### **3D Modelling:**

*3D Modelling* is the process of bringing the concept drawing and sketches into a structural form with measurements of X, Y and Z dimensions. The artist's work is divided into **Character Modelling**, **Background Modelling** and **Props Modelling**.



Character Modelling is called *Organic Modelling* where the object has to be modelled taking into consideration the animations of the character. The animations include body movement, facial animation and dress interaction with the body of the character.

Background Modelling and Props Modelling is called *Inorganic Modelling*. These models do not change in physical structure and are still components. The only changes that can be made to inorganic models are moving, rotation and scale.

#### **Texturing:**

Colouring in 2D is replaced by texturing in 3D. After the character or object is modelled, it has to be textured with colour, maps accompanied by creating its UVW structure. It is also called *UVW Mapping*. UVW mapping is the process of displaying the texture in the specified area of the object in a particular manner as desired. The texture maps are either photographed or created using image processing software like Krita, Photoshop etc.

#### **Rigging & Skinning:**

*Rigging* is the process of applying artificial bones to the modelled character. *Skinning* is the process of applying the bones to the vertices of the character. This is a very important department as the perfect rigging and skinning enables the animator to move the joints of the body as required by providing a natural blend to the viewer. The joint sections of the body is very difficult and time taking to be rigged as the jointed move with multiple bones connected to each other in a proportion.

#### **Animation:**

*Animation* is providing movement to the modelled character and objects as per the story. Here the animator has to only take into view the movements. The animator need not bother about the model or the texture. Keyframe animation, motion capture animation etc. are techniques used in 3D Animation to bring realistic type of movement in the model. Physics and Dynamics are also used in animation to create special effects like blasting, collapsing, liquid flow, car animation etc. Here in Dynamics, the animation is controlled by programs which create a smooth and natural effect in motion.



### **Lighting:**

*Lighting* is the process which brings the scene from darkness to light. Light is a special department in 3D. The lighters light the scene with all kinds of natural to fantasy feeling. Lights effect is a combination of light setting in the program with the texture and material applied to the object. Objects can be given opacity, glossiness, bump etc. which reflect onto light of the software and create a realistic effect.

### **Camera Techniques:**

*Camera* in 3D software has created endless choices to visualize a scene. Even mini to micro space can be seen through the movement of camera. It has added detail as well as increased output of a specified subject. If we want to increase the time of overall output, then we can create a new camera angle out of the same scene, hence benefitting both the animator and the viewer.

### **Rendering:**

*Rendering* is a very time taking process. It required heavy configuration systems to render and create the output of the works done using 3D software's. It is the final output processing of all the working done in modelling, texturing, lighting, camera, animation etc. It is a very important process and especially people are appointed for rendering who have the knowledge of systems, software and Graphic cards.

### **Compositing & Special Fx:**

*Compositing* in 3D is similar to compositing in 2D. After render the animation in 3D, the output is taken to the editing table, where the visuals are synced with sound and special effects are added. In Compositing it is not only the animation, live action feeds can also be taken and blended with animation. Films like **Narnia, King Kong** etc. are best examples of composition of Real life, 3D Animation and Visual Effects.

### **Music & Foley:**

*Music effects* are added in the visual output to make a real time feel. In Animation movies, lots of sound effects has to be added to make the scene real like sounds of flowing water, closing of door,



humming of birds etc. Smaller to smaller details of sound is required to be fed to make the scene lively.

### **Editing & Final Output:**

After all the preliminary output elements are joined, now comes the time of final output. This is the time of bearing the fruit of all the hard work done during the process. The final output is exported to various formats so that it can be viewed in all platforms i.e. Television, Internet, Mobile Cinema Hall etc.

## **Introduction to Special Effects**

*Special Effects* have become an important part in each and every film. Animation has overcome the boundaries of cartoons and is now a genre of both children and adults. Animation is done with such perfection that it is difficult to judge it as artificial motion. With the composition of real time and animation even the fantasy scene look like very real and lively.

Computer software's have played a great role in establishment of the Special Effects industry. Software's like **Blender, 3dsMax, Maya, Nuke, Fusion etc.** provide all the technical capabilities with ease to generate effects. Apart from the manmade keyframe animation which was used earlier is combined with physics simulation, dynamic effects and particle systems which generate animation perfectly and automatically out of the programs. The speed, direction, collision etc. are all specified in the program due to which huge scenes involving hundreds of animated objects is performed in a systematic manner to provide excellent visual results.

Out of the Special Effects or Visual Effects, a whole virtual world is created out of nothing. Scene of **Pandora Planet in the Avatar film**, the **Skull Island of King Kong** and the **battle field of Baahubali** are all combination of Live action and Visual Effects. The shooting of the raw material of the film is very critical and requires lots of pre-production planning i.e. placement of green screen, placement of markers, placement of cameras etc. A whole visual FX team works on all stages till the complete output.



Special Effect is divided in two categories i.e. *optical effects* and *mechanical effects*. Special Effects involved the effects used during the live action shootings, whereas *Visual FX* is the effects created in CGI (Computer Generated Imagery) using various software's.

**Mechanical Effects** are used during live action shooting such as utilizing high speed fan for wind effects, spraying of water for rain effects, spraying of smoke for fog effect etc. The flying effect of actors in action sequence is used by tying ropes or wires to them. In Visual FX, the ropes or wires are removed frame by frame which is called *roto (rotoscopy)*.

**Optical effects** are the photographic effects which are created using different kinds of camera lens.

The use of Visual FX has increased due to the availability of high end workstations and rendering farms in affordable cost. This has enabled even the low budget film makers to use Visual FX in their films. Fantasy has always ruled the human mind and the taste of visual effects will keep the Industry alive for the FX thirsty audience.

## History of Special Effects

In the year 1857, "*Trick Photograph*" was created by combining a sequence of 30 numbers of negatives. This was the worlds first ever created Special Effect by **Oscar Rejlander**.

The first and foremost motion film special effect was created by **Alfred Clark** which was accepted commonly by the Industry and the audience in the year 1895. In this film, there was a sequence of beheading of Mary through a sword by an Actor. The shot was done till the sword neared Mary's head. The camera was stopped and all the actors were told to freeze in the same position. The actress Mary was replaced by a dummy body and a dummy head with the same dress resemblance of Mary. The camera started and the sword beheaded the dummy head which looked like a real shot although artificially done.

This was the first every kind of Photographic trick done in a cinema. Much such kind of effects came into existence during this period like – *multiple exposures*, where two shots were combined with transparent lens technique. Transitions such as dissolves,



wipes, zoom in and out were used to separate one scene from the other.

Sculptures, Miniatures, background matte paintings etc. were used to create special effects during that period.

In the year 1910, **Norman Dawn** invented the *matte shot* which was a great achievement in special effects. Matte shots enabled artists to fill the blank section with hand drawn paintings. Glass was used in short and the single frame was exposed onto easel. In the easel, the matte was drawn by the artist. Natural images were created using this effect; hence these effects were very successful.

In the period of 1950's and 1960's various new effects were created which added reality to the scene. Science fiction films were made and lots of fantasy was created. People used to see which they ever visualized in their dreams. This brought the happiness and dragged them to the cinema halls.

Manual effects slowly move towards *CGI* (Computer Generated Imagery). Using Computer software's and programs photo realistic output of images began to form a trend in 3D animation. Any character or object, background etc. can be modelled using 3D, rendered Photo realistically and can be brought into life with animation.

Steven Spielberg's "**Jurassic Park**" started the trend of advanced Visual effects using Mechanical Equipment, stop motion technique and computer techniques. By 1995, **Toy Story** emerged as the full length 3D Animation. Now the VFX films are countless and endless with Fast and Furious, Baahubali, Robot, Hulk and the names will never end.



People are required in the above industries and many more and also in various categories as mentioned in the process of 2D and 3D animation. Career opportunities are available both the government sector as well as the private sector. Digitisation has given growth to creation of lots of digital content using Animation. Hence, the Industry is growing at pace with the population. But, the **thumb rule is the person who is creative, hardworking and sincere in creating the output is only rewarded and awarded.**

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## Unit summary



### Summary

In this Unit you have learned about the emergence of Animation and Special Effects. It explained the process of creating an Animation film both 2D and 3D. It also clarified the difference between the animation and special effects.

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## Assessment



### Assessment

1. Name the first full length colour 2d animation film.
2. Which was the first 3d CGI animation film?
3. Name 6 2D animation films.
4. Mention 6 3D animation films.
5. Name 6 VFX Films.
6. Define Animation.
7. Name the basic elements of Multimedia.
8. Mention the Full form of
  - a. 2D
  - b. 3D
  - c. VFX
9. Write a detailed note on the three major steps in the process of animation.





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## Resources

- [www.col.org](http://www.col.org)
- [www.wikieducator.org](http://www.wikieducator.org)
- [www.slideshare.net](http://www.slideshare.net)
- [www.ebookbou.edu.bd](http://www.ebookbou.edu.bd)
- [www.knowledge](http://www.knowledge)



## Unit 3

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# Social Networking and publishing

## Introduction

In a society, everything is interlinked in one way or the other. Even though we are not directly linked to a factory, we utilize the products which are manufactured in a factory undergone by the labours of many professionals in their own category. So, when the resources can be interlinked, then why cannot the minds and thoughts of the people of various categories cannot be interlinked. Why should our feelings, thoughts and experiences be limited to our friends and relative circle only?

This thought gave birth to an Industry called **Social Networking**.

## Outcomes



### Outcomes

#### Upon completion of this unit you will be able to:

- *Describe* Social Networking services.
- *Use* Internet for Social communication.
- *Create* your own Blog.
- *Create* Facebook, Twitter, and Instagram accounts.
- *Setup* a Google group.
- *Select* videos from YouTube.



## Terminology



### Terminology

<b>Networking:</b>	Interact with others to exchange information and develop professional or social contacts.
<b>Blog:</b>	As a noun, it is any article which is written and published on the internet. As a verb, it is an act of writing for internet.
<b>Blogger:</b>	A person who writes articles regarding the subject of his choice and posts it on the Social Networking Blogging Sites.
<b>Social:</b>	An informal social gathering, especially one organized by the members of a particular club or group.
<b>Search Engine:</b>	A website which gives links to a set of words searched on Internet. For e.g. searching a word "India" in the string will provide all the name of websites containing the word "India".
<b>Template:</b>	A readymade pattern which is already set. You have to replace the text of the demo with your text; you have to replace the demo photo with your photo. It is very easy as you don't have to make the basic settings and design.

Social Networking can be done by any person who has even a bit of knowledge of operating a computer or Smartphone. He/she can register themselves and share their information the social networking websites. It is not only about sharing and exchanging contents; it is about the value and knowledge created out of this content which makes it a resourceful platform.



### Tips and Notes

- Social Media Networking is a platform which gives you information about the happening around the world at a fingertip. Whenever a person learns about new knowledge, he spreads it and discusses it with his friends,



colleagues, relatives etc.

- This new activity keeps him alert and away from the outdated past. So, Study and learn to socialize and keep yourself updated as well as help others to be updated and live a healthy and happy life.

There are various modes of sharing information from text to pictures, from video to audio, from hand drawn images to Graphical presentation. Messages are shared in all types of digital formats possible on the Internet. In most of the cases, Internet connection is a necessary requirement for utilizing the social networking websites. Internet providing companies have grown leaps and bounds and in today's world, we have access to the huge world of Internet at a very economic and affordable price. The success of Social Networking largely lies in the hands of Internet service providers. Without the economic and faster Internet connectivity it would not have been possible.

There was a period when Internet was charged per hour and people had to wait at cyber cafes for their turn to have a glimpse of internet to check their mails and gather information from sites like Wikipedia and Google etc. But now Internet is at the finger tip of every human being via Smartphone's, Tabs, PC's and Laptops.

Information is the source or solution to every need of the day. From film ticket booking to train ticket booking, from sharing text jokes to sharing music videos, everything is done via Internet. We need Information in every sector i.e. education, agriculture, weather, entertainment etc.

Social Networking sites are the bridges which connect one world with the other. It is not the destination or the source; it is the connective pathway which connects two or more users to share their contents & comments. Facebook is one of the largest content distribution companies without a single content of its own. All the contents of the Facebook belong to the users. Facebook connects the links of the contents. In the same way "whatsapp" has lots of information stored in the memory of the device of the users without any major server of its own.



Chatting on internet is also a form of Social Networking. Exchanging text messages, audio messages and video message also form a major part of the day activities of the users. People love to meet new people and make friends. This possibility was limited in the olden days where friendship develops only after a few meets. A glimpse of a real foreigner gives the feeling of extreme pleasure in our minds and was treated as a fantasy. With the help of internet and social networking, this fantasy dream has crossed all the barriers & limitations and we can develop friendship with people from foreign countries as well as share our common personal and professional activities.

Social networking is a boon to the society and it brings transparency in flowing of information either from a good occasion like winning a game or from a bad occasion like “tsunami” in a country. The information spreads like wild fire via social networking and helps and suggestion flows at a tremendous rate to solve a problem. Democracy has also spread via Social Networking. Majority opinion of public about any issue is easily popped up using surveys and votes conducted by Social Networking Companies.

## Advantages of using Social Media Services

A small child has curiosity to listen to the stories told by their grand-parents. It is about the happiness of learning something new which is inherited in each and every human being. Whenever we see a gathering anywhere, we stop to have a look at that event and want to know the cause of the event. This is the simple tendency which has forced billions of people to use Social media networking. It is the thirst of knowledge which drags them to the well of Social Networking websites and apps.

- **People use internet and social networking on personal level and feel happy at every message or video.** It is the same feeling which we get when we see an aeroplane passing over our heads. It is just entertainment; it may not be knowledge every time which fascinates people towards something.



- **Students and people utilize information as a source of their education.** Whether they are making a new project on some subject or other, they seek information about social networking sites. And the best part of social networking sites is, it is totally free to view the information asked for by the user. Social Networking sites can be referred to as robotic teachers or counsellors of the new generation. These are people who provide free educational resources on every subject and guide users to achieve their goals for free. They have a positive assumption of knowledge grows while spreading.
- **Working level professionals also need help of Social Networking sites related to information of their genre.** For e.g. a salesman is transferred to a new territory to which he has never been before. So he requires lots of information regarding places and people of that area. All the information of these categories can also be obtained through various Social Networking websites. There are lots of people of helping nature who provide information without any greed of their own and just to help others.
- A film has been made on “facebook” named “**The Social Network**”. This film shows the thought behind the maker or concept creator of “facebook”. People use the services for free and the revenue is generated elsewhere i.e. Advertisements etc.



#### Reading

You should watch this film to have a practical idea on Social Networking.

## Introduction to social Networking Interfaces Using Google

### What is Google?

We have heard Stories of “Genie” out of a magic lamp that asks for people’s wish and fulfils them in a matter of seconds. *Google* can be regarded as the same information “Genie” which provides links to all the worldwide information at a click. It serves as a connectivity link to the worldwide websites. It is technically called as “*SEO*” i.e. *Search Engine Optimisation*. The founders of Google are **Larry Page** and **Sergey Brin** from America. There is interesting



information about the founders that they were students studying Ph.D. in the Stanford University of California. It states that techniques and ideas are not depended upon qualifications and age. Anyone who has a better solution to a problem can rule the world.

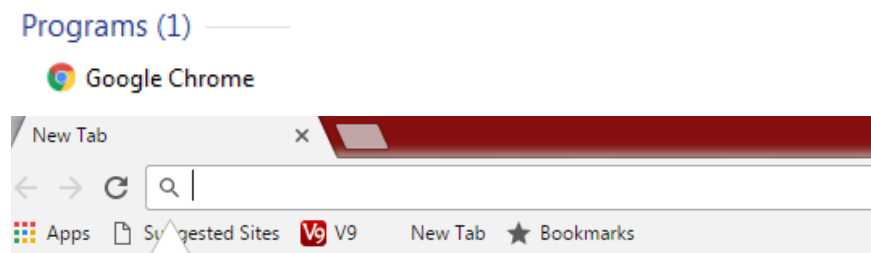
## Steps of Using Google

### Define the Purpose:

Need of an information i.e., I want to know the birth date of Ratan Tata.

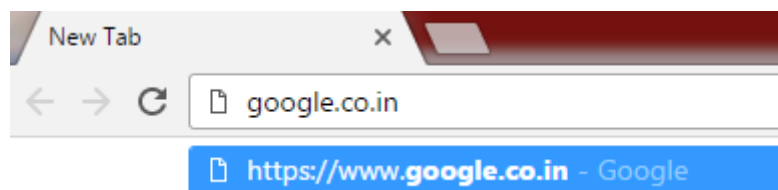
### Steps:

- Open the computer or Smartphone with access to Internet.
- Go to (Left Click) Google Chrome or any other internet browser



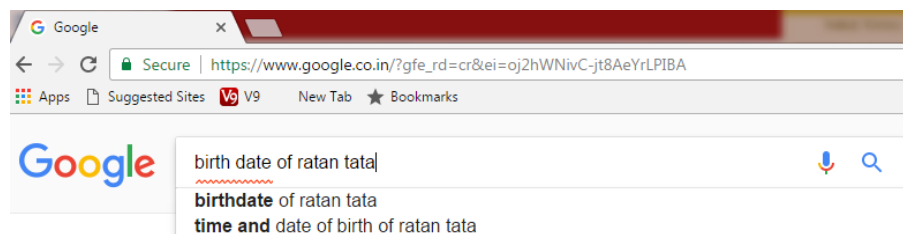
Screenshot

- Go to address tab of the Chrome and type :[www.google.co.in](http://www.google.co.in)



Screenshot

- On the search tab of the Google website type the following “birth date of RatanTata”



Screenshot

- Press Enter
- You will get websites which contains information about the queried subject.



Google search results for "birth date of ratan tata". The search bar shows the query and a magnifying glass icon. Below the search bar are tabs for "All", "News", "Images", "Videos", "Maps", "More", "Settings", and "Tools". The results show "About 34,400 results (0.63 seconds)".

The main result is for "Ratan Tata / Date of birth", showing "28 December 1937 (age 79 years)" and a portrait of Ratan Tata. Below this are three smaller results for "Dhirubhai Ambani" (28 December 1932), "Mukesh Ambani" (19 April 1957), and "Cyrus Mistry" (4 July 1966).

On the right, there is a detailed information box for "Ratan Tata", Chairman of the Tata Group. It includes his birth date (28 December 1937), nationality (Indian), education (Cornell University, Harvard University), parents (Sooni Tata, Naval Tata), siblings (Noel Tata), and awards (Padma Vibhushan, CNN-IBN Indian of the Year in Business, Padma Bhushan).

Screenshot

You will get the information about your queried subject as well as Google will suggest you about information are which are similar to your query.

Computer websites are now being programmed with an additional ability called *logical thinking*, with the help of which is can think like a human about similar possibilities.

Here are a few questions which you need to answer by gathering the information from google.co.in



Activity

Question	Answer
<ul style="list-style-type: none"> <li>Who was the First President of Germany?</li> </ul>	
<ul style="list-style-type: none"> <li>What was the full name of Hitler? When was Hitler Born?</li> </ul>	
<ul style="list-style-type: none"> <li>What is full name of the current Prime Minister of India? Where was he born? <i>[Note: This is a question whose answer is variable according to time]</i></li> </ul>	
<ul style="list-style-type: none"> <li>Who founded Reliance? What are the name of his sons?</li> </ul>	
<ul style="list-style-type: none"> <li>Who is the current Chief Minister of Tripura?</li> </ul>	





## Using Gmail

### What is Gmail?

Pigeons were the source of communication in olden days as read in the history articles. The professionally and systematically organized Postal Services came. Now it is *Gmail* which transfers our message beyond all limitations, boundaries and borders of countries at the click of a second. This service is totally free and anyone can utilize internet and create their Account/Id in Gmail.

Gmail not only sends information but it also keeps a list of all the messages sent and received in a very systematic manner. People can view files sent years before at a glance. Gmail provides a fixed space for messages, images and videos via Google drive. Gmail acts an efficient Office Administrator who perfectly documents the official/personal communications.

### Uses of Gmail

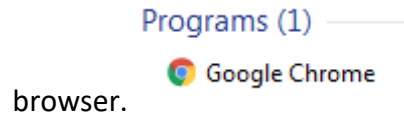
- Sending Mails
- Chatting
- Managing your Emails
- Managing your Contacts
- Used as Identification Id in the Web (Cyber) World



## Steps for creating an E-mail account using Gmail

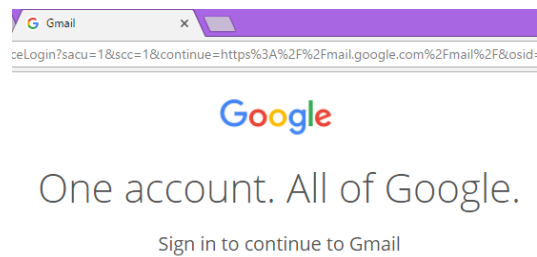
### Opening Gmail in the Browser

1. Open the computer or smartphone with access to Internet.
2. Go to (Left Click) Google Chrome or any other internet

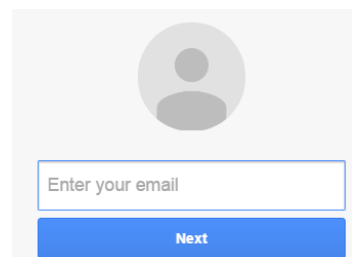


#### Screenshot

Go to address tab of the Chrome and type :[www.gmail.com](http://www.gmail.com)



#### Screenshot



#### Screenshot

3. Left Click on [Create account](#) Link
4. Filling in the Registration details.



Screenshot

5. After filling the above details: Left Click on Next Step

Screenshot

6. **Privacy Policy;** You have to read the policy of the company and then press "I Agree" to continue.
7. Successful notification of Email creation by the company.

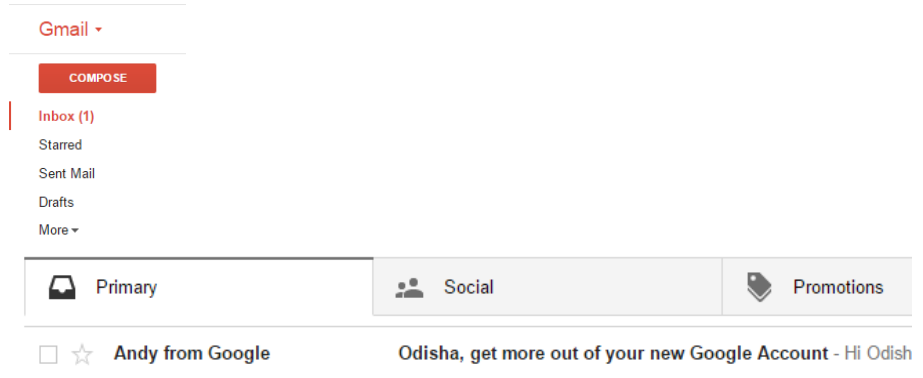
Welcome!

Your new email address is osoubbsrtrial@gmail.com

Thanks for creating a Google Account. Use it to subscribe to channels on YouTube, video chat for free, save favorite places on Maps, and lots more.

Continue to Gmail

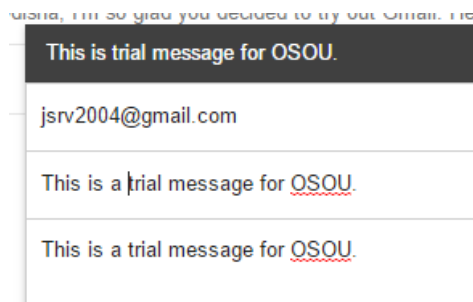
8. Left click on continue to Gmail.
9. **The Primary Inbox of Gmail**



Screenshot

How to send an e-mail with an attachment of a photo?

1. Left Click on Compose under the Email.
2. Type the Matter.



Screenshot

3. LC on the attachment symbol from under.




Screenshot

5. Choose your Photo to be attached.



Screenshot

7. Left click on Send
8. And DONE. You have successfully sent an email with a Photograph.



Activity

- Create a New Email Id in your name in Gmail.com.

OR

- If you already have an Email Id, help someone to create a Gmail Id of his own.



## Using Google groups

### What is a Google group?

A group indicates to individuals who have a common interest. For i.e. people who are interested in carom game like to share information regarding carom shots and techniques, competitions organized in specific locality related to carom etc. Likewise there are lots of common interest groups.

These group concepts have been put by Google on the internet/web in form of *Google groups*. People register into the groups they are interested on via their Gmail account user name and password. A person can join as many groups of his desired interest or requirement.

Commonly shared information reduces the memory and size which would have been consumed by individually mailing the contents. For i.e. a notice regarding carom competition is posted on the Google Group site in a PDF file format. The file is placed in a fixed location and all the people of the group access it from a single destination. If the PDF file had been mailed to each and every individual, then the memory consumed on the server would have been duplicated by the number of members in use. Hence, this concept of Google Groups is technically and socially a useful contribution to the people.

### Advantages of Google Groups

- Suppose there is a class of 24 students and 1 teacher. The teacher wants to give some reference tutorial file to all the students of the class. Now, if the teacher collects the e-mail id of each and every student to mail the material, it would be a bit lengthy process. In this case, if a common Google group is created where each student can individually log into and share the content. Simply speaking, it is a notice board where there matter is written and the interested students can go and see it.
- It is very easy and helpful in long run information of Alumni also. It is not required to collect phone numbers or addresses as done before to form an Alumni.



- New members can join and share the common information provided earlier also.

## Steps of Googlegroups

### 1. Registration

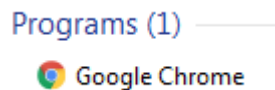
The person who creates the Googlegroups is called the “Administrator”. He/she can set the rights of the group whether it has to be public or limited to the members of the group only.

The Administrator can do the following:

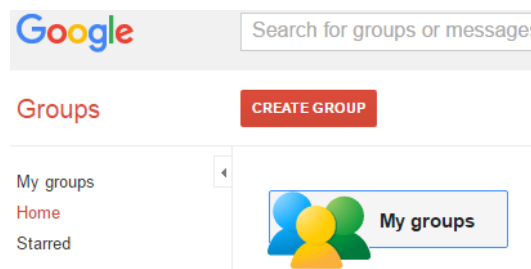
- Create the Googlegroups in a name as he specifies.
- Can set the group to be limited or public.
- Can have the rights to join members only on verification.
- Can have the rights to check the matter of information before posting.
- Can remove any member if there is any violation in rules of the group.

### 2. Process of creating a Google groups

- Open the computer or smartphone with access to Internet.
- Go to (Left Click) Google Chrome or any other internet browser



Go to address tab of the Chrome and type : [www.groups.google.com](http://www.groups.google.com)



Screenshot

Left Click on “Create Group”

### 3.Filling information about the group



Group name: multimedia\_osou\_2016

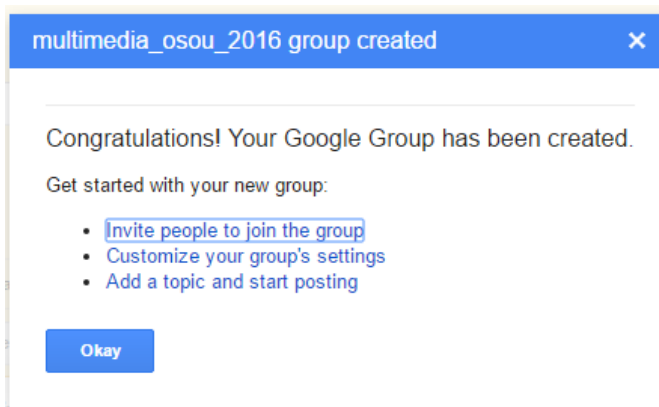
Group email address: multimedia\_osou\_2016@googlegroups.com  
[https://groups.google.com/d/forum/multimedia\\_osou\\_2016](https://groups.google.com/d/forum/multimedia_osou_2016)

Group description: This is the multimedia batch of osou students of 2016 batch.

Basic permissions:

- View topics: Select groups of users ✓ All members of the group  
These users can view topics in this group.
- Post: Select groups of users ✓ All members of the group  
These users can post messages to this group.

Left click on “Create” Button



Screenshot

#### 4.Creating a New Topic



Left Click on “New topic”

Type the Information

multimedia\_osou\_2016

By: me (osoubbsrtrial@gmail.com)

Subject: Introduction Class of OSOU students

Type of post: Start a discussion  Display at the top

Email updates to me [Attach a file](#) [Add a reference](#) [Add Cc](#)

Normal Normal **B** *I* U [Lir](#)

I would like to welcome all the students to [OSOU](#), [Odisha](#).

Screenshot



Left Click on

### 5. Joining the Group

- Note down the name of the group.
- Open your Email id in the computer.
- Go to groups and Search for the group by entering the Group name.
- Once your Group is Displayed. Click on the Group and Click Join
- DONE.
- You are now a member of the group.
- Now you can also POST messages in the group.
- Any new message posted by any member can be viewed and commented by the other members.



Group  
Activity

- All the students of the batch are advised to sit together and finalise the name of their group.
- Everyone should note down the common name which has been finalized.
- Any one student can be chosen as Administrator [i.e. Class Monitor] and given the duty of creating the maintaining the group activities.
- Every student should login to their Gmail Id and add themselves to the group so that they can get access to the notices posted in the Group.

## Using YouTube

### What is YouTube?

There was a time when videos were limited to Television & Cinema Halls. There is much curiosity among people for video related contents. *YouTube* is the solution to all the video lovers of their own category. It is like a Vide search engine which gives the link to video related to our search string. It not only gives a





particular link, but also gives links of videos related to other strings also. For i.e. if we search for World cup India, it will give links to all video events related to the World Cup.

In YouTube, people can also upload their own created content and share it among the users of the internet.

## Benefits of YouTube

- You can watch videos of Film Trailers, Music Videos etc.
- You can upload your own created video.
- You can watch Films.
- You can subscribe to YouTube channels of your favourite genre.
- You can create your own YouTube channel for free of cost.

## Steps of YouTube


### 1. Registration

There is no need of Registration for viewing videos on YouTube. However there are some videos which need your Gmail id and password for viewing.

### 2. Opening YouTube webpage

- Open the computer or Smartphone with access to Internet.
- Go to (Left Click) Google Chrome or any other internet browser

Programs (1) \_\_\_\_\_

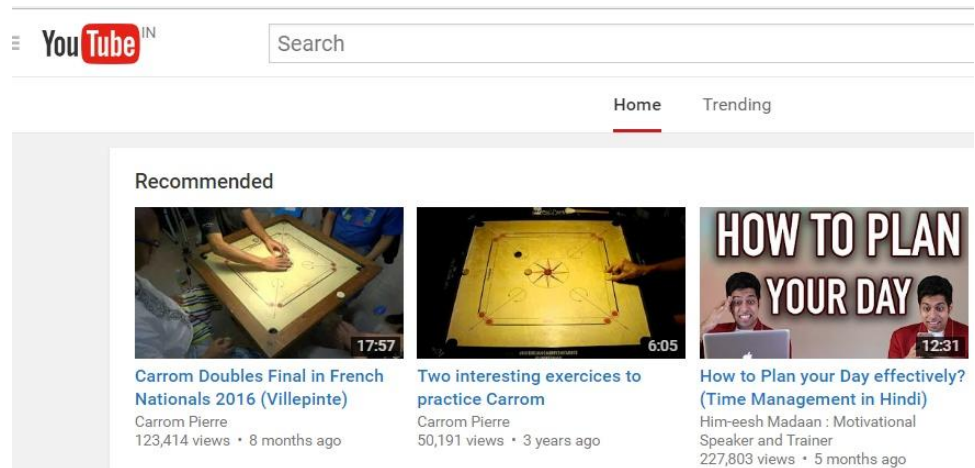
 Google Chrome

Screenshot

Go to address tab of the Chrome and type : [www.youtube.com](http://www.youtube.com)

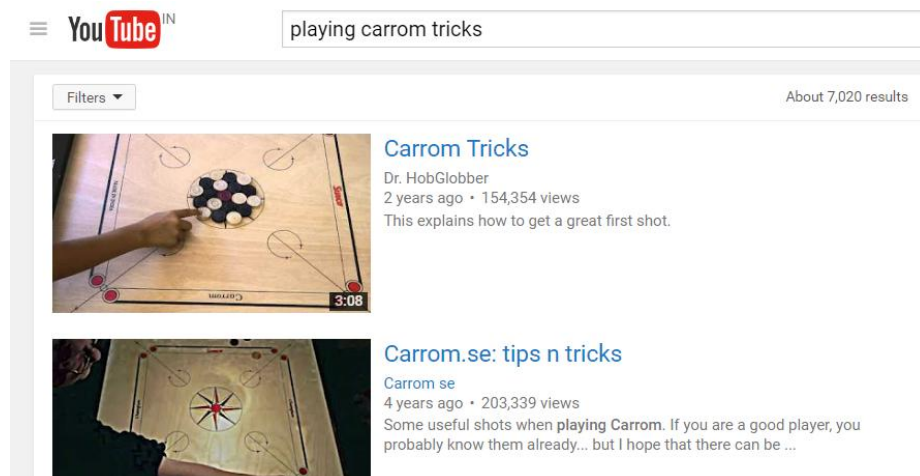


### 3. YouTube Interface



### 4. Searching a video

- In the Search option of Youtube type “playing carrom tricks” and press Enter
- Youtube will show you a number of videos which are uploaded by people about Playing Carrom.



- You can see that there are about 7,020 results i.e., around 7,020 videos on Carrom tricks. This is equivalent to a huge course from various people who charge you no cost for viewing their lectures.
- This is the future of sharing knowledge. Anyone can learn anything from youtube and get benefited.

**Activity**

- Search for a Movie Trailer
- Search for your favourite Music Video
- Search for a video tutorial on “Photoshop”
- Search for a video tutorial on “Video Editing”
- Search for a video tutorial on “Home remedies for gastric problem”
- Search for “Sixes of Chris Gayle”
- Search for “India winning world cup”

## Using Facebook

### What is Facebook?

*Facebook* is in the hands of every Smartphone users today. The purpose of Facebook is sharing information. Imagine a friend meeting after a long time. We would discuss with him about all the good and bad happenings in our life. Facebook connects the friend instantly over their network. It keeps them connected unlimitedly till they are connected to the Internet. They can share their photos, videos, audios and text information instantly and it is on their timeline. All the friends related to him on Facebook can view the post on the timeline. They can like the post, share the post and can even add comments on the post.

Apart from personal information, people also share new educational information, news related information, and health related information etc. on the internet. It is totally free to use this Facebook website and anyone can register using Email Id.

The founder of Facebook is **Mark Zuckerberg**. Facebook is a network which is growing at a pace with the population. It is not only a website or app; it is a solution to the human world with the knowledge distribution capabilities.



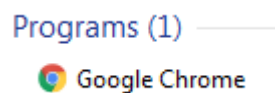
## Benefits of Facebook

- Facebook is a free website and anyone can register.
- It is a free app for Smartphone users who use it for no charges.
- It forms a links of friends with friends and a network automatically forms between common friends. It creates a big chain naturally and we are socializing on the net with people and forming friendships with new people of similar thoughts and beliefs.
- We are able to use all the benefits of Facebook just sitting in front of a Pc or a Smartphone.

## Steps to open a Face book Account

### 1. Opening Facebook

- Open the computer or smartphone with access to Internet.
- Go to (Left Click) Google Chrome or any other internet browser



Screenshot

Go to address tab of the Chrome and type :[www.facebook.com](http://www.facebook.com)



## 2. Creating a New Facebook Account

In the start-up screen enter your details.

**Create a new account**  
It's free and always will be.

OSOU Trial

osoubbsrtrial@gmail.com

osoubbsrtrial@gmail.com

.....

**Birthday**

15 ▾ Apr ▾ 1981 ▾ [Why do I need to provide my date of birth?](#)

Female  Male

By clicking Create Account, you agree to our [Terms](#) and confirm that you have read our [Data Policy](#), including our [Cookie Use Policy](#). You may receive SMS message notifications from Facebook and can opt out at any time.

**Create Account**

Screenshot

Left Click on Create Account after filling in your details.

## 3. Steps of Facebook Process

**Step 1**  
Find your friends

**Are your friends already on Facebook?**  
Many of your friends may already be here. Searching how it works.

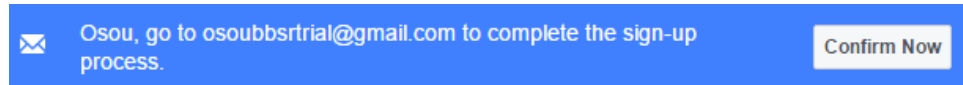
Screenshot



Left Click on Next

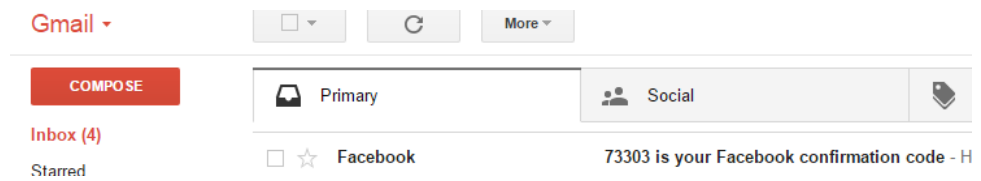
**Note:** The Process changes time by time, but the overall concept is same.

#### 4. Confirmation of Facebook Account

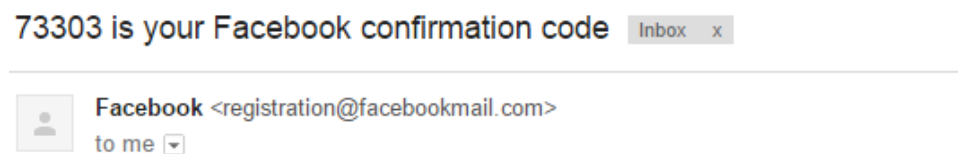


Screenshot

- Open Your Gmail Account
- Open the Mail Sent by facebook in the Inbox



Screenshot



### Action required: Confirm your Facebook account

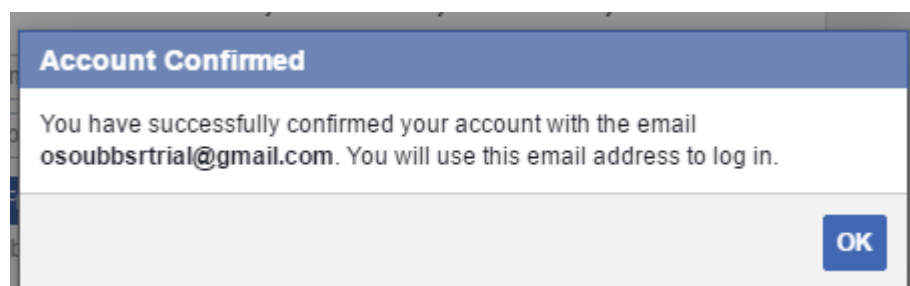
Hey Osou,

You recently registered for Facebook. To complete your Facebook

[Confirm Your Account](#)

Screenshot

Left Click on Confirm your Account.



Screenshot



The Account confirmation information will be displayed on the screen as above.

Your Facebook Account is Ready.

### 5. Adding Friends to your Facebook Account

- In the find friends tab, type the name of your friend.



Screenshot

- Choose the name of your friend
- Left Click on Add Friend
- A request will be sent to your Friend.
- If your friend Accepts your request, he will be added in your Friends List.

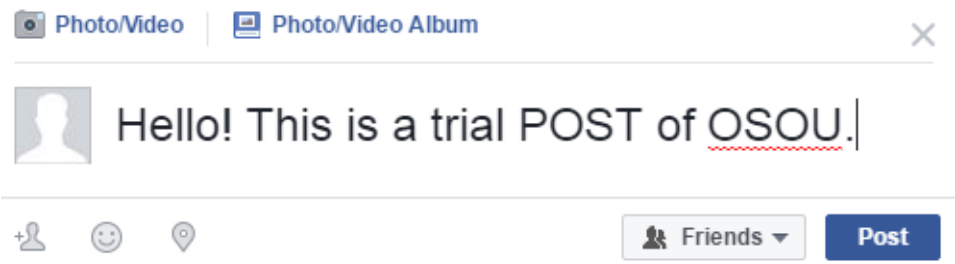


Screenshot

- You will be able to see common friends of your friends and you have the option to Send them a Request to Add Friend.
- This called SOCIAL NETWORKING

### 6. Posting a Message on the Timeline

- The Area where you want to share your message in the facebook is called "TIMELINE".
- The Message which you share is called "POST"

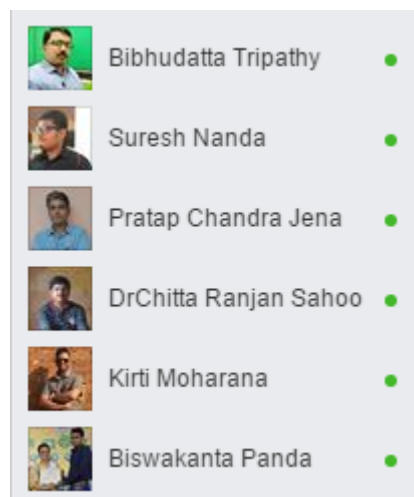


Screenshot

- Type your message in the message box.
- You Can attach any Photo or Video by clicking the “Photo/Video” button
- Then click on “Post”

### 7. Chatting with your friends

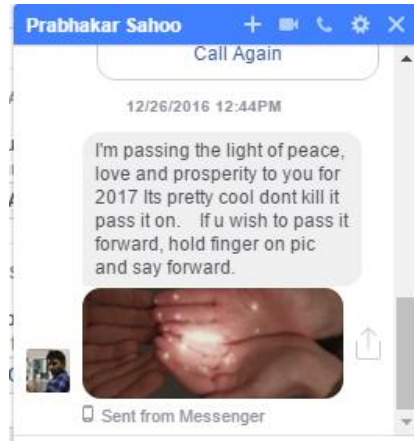
- In the right side bottom corner of the facebook you will get the Chat box where you will find the list of your friends.
- By the side of their name, there will be a green button or grey button. Green button symbolises that the user is online and he can instantly see the message which you send. Grey button symbolises that the user is offline. Once you send the message, he can see the message once he comes online.



Screenshot

- Left Click on the name of your friend to chat.
- A Chat message box will open

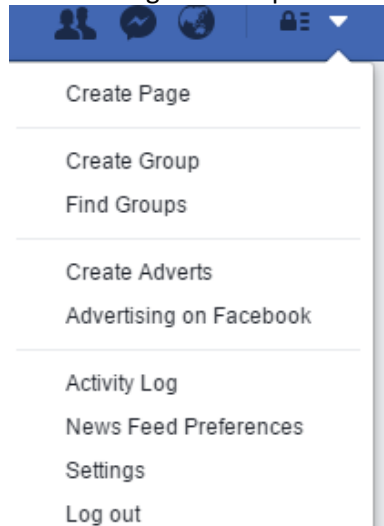




Screenshot

### 8. Logging out of Facebook

- Go to the right side top corner of the facebook.



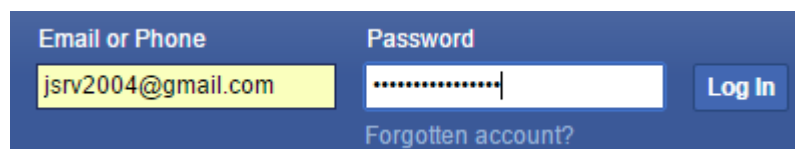
Screenshot

- Left Click on Log Out

### 9. Logging in to Facebook

- Open the computer or Smartphone with access to Internet.
- Go to (Left Click) Google Chrome or any other internet browser

Go to address tab of the Chrome and type :[www.facebook.com](http://www.facebook.com)



Screenshot

- Enter your Email Id and Password and Left Click on “Log In”



### 10. Likes and Sharing

- Any Post which you are interested or informative can be “Liked” or “Shared”



Screenshot

### 11. Setting and Adding Profile Photo and information.

- Go the settings in the right side top corner and Fill up the Blanks as you need to be displayed on your Profile.



#### Activity

- Create a Facebook account of your own.
- Send friend request to all the batch mates of your group.
- Accept the friend request of the other batch mates sent to you.
- Post a Welcome Message in the timeline with a photograph attached to it.
- Chat with your friend on the Facebook.
- Add you profile photo in your Facebook account.

## Using Instagram

### What is Instagram?

The Smartphone’s of today has the capability of a Digital Camera with resolution as far as up to 10 to 20 megapixels. People click images every now and then and post them on internet social networking sites. *Instagram* is one of the sites where people can instantly share their photographs. It is a site exclusively for photograph lovers. This site can be accessed through PC, Laptops as well as Smartphone’s.

### Benefits of Instagram

- It is mostly used for sharing our memories on the Internet.
- Photographs really speak much more than the words. It is fascinating to watch a new photograph with a variety of content.



## Steps to open an Instagram Account

### 1. Opening Instagram

- Open the computer or Smartphone with access to Internet.
- Go to (Left Click) Google Chrome or any other internet browser

Go to address tab of the Chrome and type :[www.instagram.com](http://www.instagram.com)

### 2. Creating a New Account in Instagram

#### Screenshot

- Enter the details of your information and Left Click on “Sign Up”

### 3. Adding a Profile Photo

- Left Click on Adding a Profile Photo

Now you are ready to Add Photographs and Share Photographs.



#### Activity

- Create an Instagram Account in your name.
- Add a Profile Photo to your Instagram account.
- Share a Photograph on Instagram



## Using Twitter

### What is Twitter?

*Twitter* is a short messaging site where people post their views about any particular happenings. It is basically used as a Public Relation tool for celebrity fame personalities. People follow their favourite personalities on twitter on daily basis. Fan letters of previous days are replaced by tweets today. Tweets have the capability to display the mind frame of any person. It has brought praises to positive people and created troubles for negative minded people.

### Benefits of Twitter

- It is mostly used for sharing experiences on the Internet.
- Mostly people share their ideas on the views of different people.
- It create a scope of an open group discussion even when are alone at home. These kinds of group discussion create a positive attitude in the people and make them capable of public speaking.

### Steps to open a Twitter Account

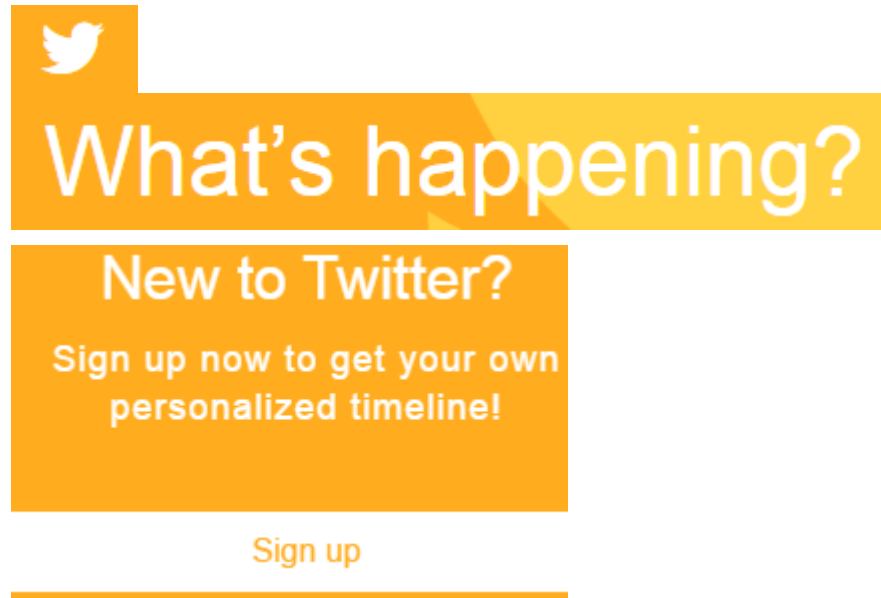
#### 1. Opening Twitter

- Open the computer or smartphone with access to Internet.
- Go to (Left Click) Google Chrome or any other internet browser

Go to address tab of the Chrome and type :[www.twitter.com](http://www.twitter.com)



## 2. Registering yourself in Twitter



Find the “Sign Up” button and Left Click on it.

Screenshot

## Join Twitter today.

OSOU Trial ✓

osoubbsrtrial@gmail.com ✓

..... ✓

Tailor Twitter based on my recent website visits. [Learn more.](#)

Sign up

Screenshot



### 3. Enter your information in the box and Click “Sign Up”

## Enter your phone.

Your phone number keeps your account secure, connects you to friends and makes login easier.

#### Screenshot

- Twitter will send a verification code to verify your Mobile Number.
- Read the SMS which will be immediately sent to you and enter the Code.
- Then Left Click on Verify

## Verify your phone.

We sent a code to +91 75380 20404. Enter it below so we know you're a real person.

[Re-send SMS](#) | [Edit phone number](#)

#### Screenshot

- Then choose an user name



## Choose a username.

Don't worry, you can always change it later.

 ✓

Suggestions: osoubbsrttrial1 | osoubbsrttrial2 | osoubbsrttrial3 |  
osoubbsrttrial4 | osoubbsrttrial5

Next

### Screenshot

We're glad you're here,  
OSOU Trial.

Twitter is a constantly updating stream of the coolest, most important news, media, sports, TV, conversations and more—all tailored just for you.

Tell us about all the stuff you love and we'll help you get set up.

Let's go!

### Screenshot

- Left click on "Let's go"
- Now you can Post Messages as you did in the Facebook.



Activity

- Create a Twitter Account in your name.
- Add a Profile Photo to your Twitter account.
- Write a Message and Post in Twitter.

## Creating your own Blog

### What is Blogging?

Magazines and newspapers are a part of life of every human being. Everyone have their favourite monthly magazine and a daily newspaper. People feel proud when their written article gets published on any one of the above. Secondly, everyone does not get a chance to make into an article of a magazine. Social Networking sites have opened gateway to all kinds of people interested in writing Articles. People can make their own sites and



publish articles on it without any investment. These free form articles which we write and publish on the net is called *Blogging* and the sites are called *Blogging websites*.

Blogging websites invite people to publish their blogs in their web space. Some blogging sites even pay for blogs if they get sufficient traffic.

People get a chance to share their ideas and creations through Blogging and spread their name in their specific area of expertise. Blogging ranges from essays, article about particular happenings, tutorials of any particular subjects, memorable incidents etc. Any article can be written and posted on blogging sites. It gives the writer to gain experience which will be useful if they want to turn professional in writing.

## What kind of people Blog?

People who have the passion to enter into the huge world to display their capabilities used Blogging as a platform. It is not limited only to professional writers. Any amateur with tons of spelling and grammatical mistakes can also blog and post on the Internet. It is about sharing the personal views regarding any event occurring in the world. These people come from all corners of the Universe.

There are professional website blogging companies who have created very easy and user friendly interface of the websites which enable all types of users to post their Blogs.

## Benefits of Blogging

- It opens the hearts in form of text and displays it to the whole world.
- Ability to reach the global audience all over the Universe.
- Our passion is not only shared by us, but also shared by common thoughts of other people also. We teach from our blog as well as learn from others blog. It is a win and win situation to the reader as well as the writer of the blog.
- Blogging is done in categories of personal interest. For i.e. learning computer tutorials, cooking recipes, health related tips, sports and events, films and T.V. serials etc. Every person





has a hobby and every hobby has a community all over the world. By entering into blogging, we form a community and also are a part of it.

## Characteristics of a Blog

- A blog is equivalent to a website.
- It is created in categories of a particular interest.
- It is a free source of information published on the net.
- A blog may contain text, images, videos etc.
- A blog shall contain links to reference websites of the similar topic.
- A blog may contain the details of the writer of the blog with a link of comment button or a reply button.
- Blogs are arranged either day wise or receipt or category wise.
- A Blog site consists of a header, footer and contents in between them.

## Blog and Communication

*Blogging* is a form of communication on Internet. It is not only about the social part, but after a certain period it gets converted into commercial expectations. People begin with writing and sharing as a hobby. But when their writings or information is well appreciated and viewed in huge numbers then there is possibility of commercialization of the content which in turn can also earn a very good amount to the blogger.

There are systems on Internet which can track the number of hits/visits to a particular website. Through this numbers we can know that whether our written blog has garnered substantial interest or not. Any communication tool of today is accepted whole heartedly, whether it may be Facebook or Whatsapp. Any media which enhances communication has become successful due to bloggers who invest their precious time on internet to share their valuable contents.

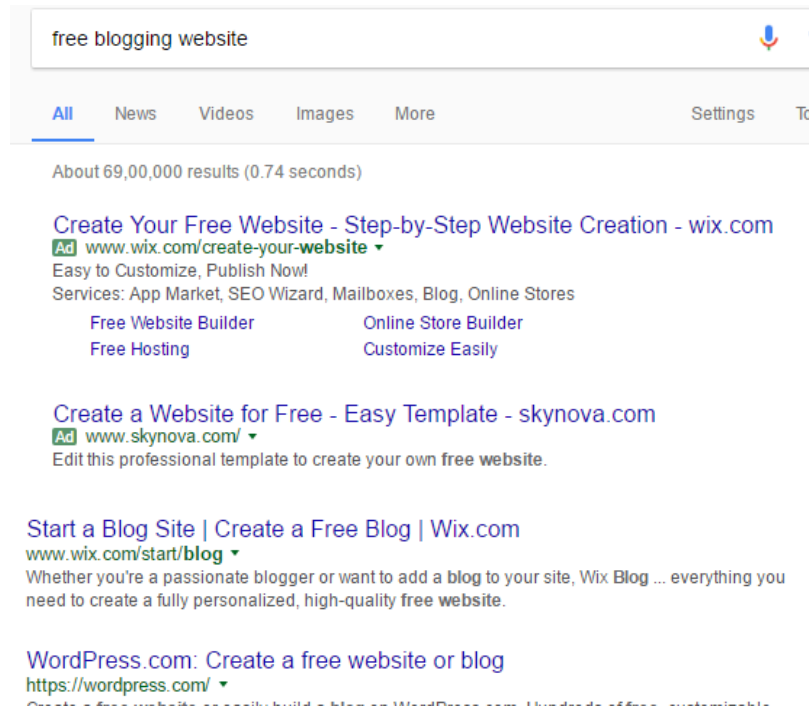
## Steps to start Blogging

### 1. Searching for a free Blog site

- Open the computer or smartphone with access to Internet.



- Go to (Left Click) Google Chrome or any other internet browser
- Go to address tab of the Chrome and type :[www.google.co.in](http://www.google.co.in)
- Left click on the Search Bar and type “free blogging websites”

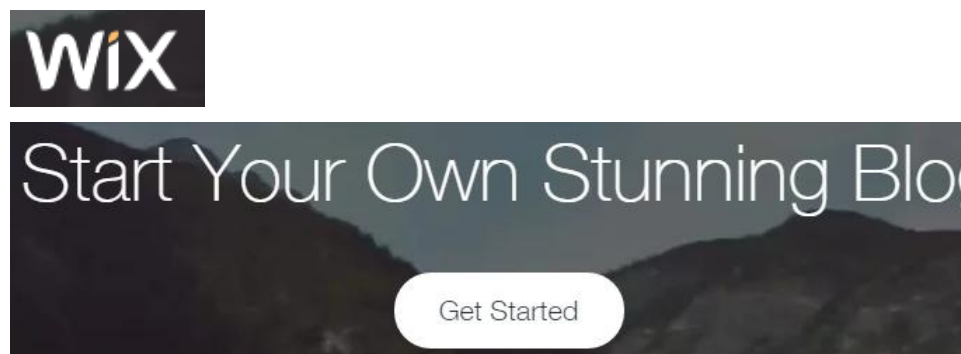


Screenshot

Here you will get a list of sites of free blogging. Let us start from the site mentioned in google i.e., [www.wix.com/start/blog](http://www.wix.com/start/blog)

## 2. Registration in the Blog website

- You can choose any site of your own.



Screenshot

- Left Click on “Get Started”



### 3. Entering your information

Email

osoubbsrtrial@gmail.com

Type your email again

osoubbsrtrial@gmail.com

Password

●●●●●●●●●●●●●●●●

Type your password again

●●●●●●●●●●●●●●●●

Sign Up

Screenshot

- After enterin the information Left Click on “Sign Up”

### 4. Choosing the type of website

## Create Your Website with Wix ADI

Use Wix Artificial Design Intelligence to help you create your stunning website.

Start with Wix ADI

Screenshot

OR



## Create Your Website with the Wix Editor

Easy drag and drop, advanced design features, specialized Apps and more.

Start with Wix Editor

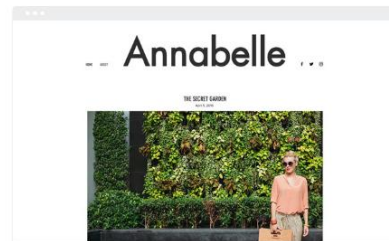
### Screenshot

- Let Us Start with “Wix Editor”

Pick the Blog website template you love



Traveler Blog

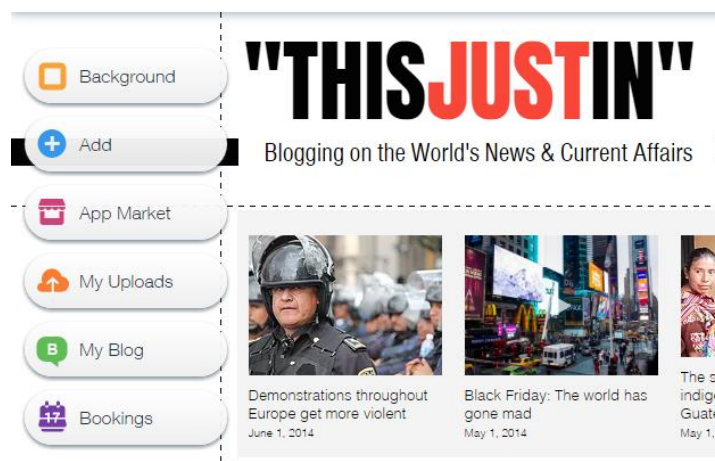


Personal Style Blog

### Screenshot

- You can Pick your Blog Template.

## 5. Entering your information and photographs



### Screenshot

- From this stage onwards you have to follow the instructions as shown on the Blog screen.
- You can have your photos and text already ready before



starting a Blog site.

## Components of a Blog

There are five significant sections of the blog:

1. The Background
2. Header
3. The Content Area
4. Footer
5. The Side Bar

### The Background

The *Background* is the backdrop of a design website. It may be:

- A Flat Colour
- A Gradient Shade of Colour
- A Faded Photograph
- A Tile of a Small Part of an Image

### Header

*Header* is the top most portion of a website which contains the title of the blog. It also contains some quotation lines or taglines which relates to the contents of the blog. The design and look of the blog depends on the content writer. The content writer can use simple text as well as use attractive animated banners and images.

However, the contents with text and minimal images are easy for downloading on internet. Utilisation of larger size images take longer for the webpage to load.

### The Content Area

*Content* section is the main part where the blogger writes his article which may comprise of text, images, graphs as well as animated flash banners and videos. It covers the maximum space in the blog website which enables the readers to read with clarity. Contents may be in precise or it may also be in complete detail. It depends upon the availability of the web space. Now-a-days there are ample of free space provided by the blogging site companies. Hence, space is no more a barrier for bloggers. It is the content which decides the fate of the blog. If the content is wonderful and



useful and well marketed it will attract lots of visitors and add more clicks to the site.

### **Footer**

*Footer* contains the information about the user and any copyrights if done by the user. In some sites, it shows the number of visitors who have visited the site. This automatically updated live using Java programming's while creating the website.

### **The Side Bar**

Some bloggers use varieties of links for different articles. In the side bars, we can see the link to more articles from the author or links of various articles of different authors and related to the same subject. Sub division makes the content to be better understood step by step. The user can pin pointedly pickup his matter of interest from the links.

### **The Choice of the Audience and your Role as a Blogger**

Apart from lots of benefits to the blogger and the use, there is a lots of traffic and competition in this segment. As the matter of source is free, there are millions of people who use this service to portray themselves as a valuable and resourceful person in the internet community.

As the matter of availability is plenty, it is the audience choice which decides the fate of the blogger. This creative field is like a one way traffic, either you are a huge success if your content is appreciated by the public or you are a huge failure if the content is not like by the public. There is less possibility of a midway in this profession.

So, the blogger has to strive and work hard to present a better content to make them appreciated. It is not only about content creation and blogging. We have to place our content on right websites and use online digital marketing techniques like advertising, flash animated banners etc. to pull traffic to our websites.



#### Activity

- Create a Blog of your own
- Design the blog using Photographs.
- Provide some text information about a favourite incident of yours in the blog.
- Post the Link of your blog in Facebook Post, Twitter Post.
- Send a mail of your blog link in the Google groups of your batch as studied earlier.

## Popular Social Networking Sites

Apart from the Social networking sites described above in this unit, there are also several other popular sites and Apps which are used for social networking. It depends upon the convenience and choice of the user to choose a social network for communications.

### Whatsapp

*Whatsapp* is a platform used to exchange chat related information which includes text, video, audio etc. It is an instant messenger which transfers data immediately for free of cost. However, the data charges of internet provider are applicable. The main advantage of Whatsapp Company is that they don't have huge servers of their own. They use our memory chip of our Mobile as a server on behalf of Whatsapp.

### Messenger (Facebook)

*Messenger* is a service provided by the parent company of Facebook. The chat service of Facebook use messenger to make text chats, audio calls and video calls. People all around the world can interact with each other only at the cost of data charged by internet service provider.

### Hangout (Google)

All the users of Gmail have been provided with a platform of *Hangout* where they can chat between each other; It similar to other chat messengers. It has all the latest facilities of communication in form of text, audio and video.



## LinkedIn

*LinkedIn* is a website which connects people in various professions. We have to create our profile in LinkedIn & it is publicized on Internet. People of common interest in the profession can contact each other and share their queries or doubt regarding work related to their business.

## Tumblr

It is specially a blogging site where people share their articles. It is owned by Yahoo Group. People can post their articles with photographs and videos. It is very user friendly and anyone with basic computer knowledge and Internet connection can prepare a blog of their own.

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## Unit summary



### Summary

In this Unit you have learnt about various types of **Social Networking websites**. We have also created our own profiles and blogging sites using the techniques taught in this unit. This experience will help you in creating a valuable content of your own. This will open the door of possibilities in your mind. This knowledge of the unit will not only help you, also will be useful to your family members also if you share this knowledge with them.

It is your choice to be a leader in the Social Networking sites. You have the power in your own hands to enter into the internet networking working world and earn name and fame using your knowledge.

However, lots of references, practice and external guidance will be needed to become an expert in this subject.





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## Assessment



### Assessment

1. Write down the user id of all the activities done above:
  - a. You're User Id of Gmail.
  - b. User Id of Google group.
  - c. User Id of Facebook.
  - d. User Id of Instagram
  - e. User Id of Twitter
  - f. Your link of your Blog website:
2. Write down the process to upload and share an album of 10 photographs on your Facebook account.
3. Describe the process to upload an article on your blog.

---

## Resources

- [www.col.org](http://www.col.org)
- [www.wikieducator.org](http://www.wikieducator.org)
- [www.slideshare.net](http://www.slideshare.net)
- [www.ebookbou.edu.bd](http://www.ebookbou.edu.bd)
- [www.knowledge](http://www.knowledge)



## Unit 4

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### Content Distribution Systems

#### Introduction

*Content Distribution* medium is very vast and widely spread whereas Content Distribution systems are the bridge between the content provider and the end user.

Content distribution systems act as a platform for Creative Persons and Content development companies to showcase their talent to the whole world and earn name and fame for themselves. Content Distribution Companies are professional and abundant with resources which are required for Distribution.

Before gaining knowledge about Content Distribution, you have to know about the requirement of the existence of this medium. In old days, people used to grow vegetables and take them to the market to sell on their own. Thus, the scope of sale is limited to a particular region. But as time progressed, vegetables are exported as well as imported from various continents in different corners. The same is the case of Content creators like musicians, artists, programmers etc. Their content has the capability to be showcased all around the universe with the help of Content Distribution process.

In this unit, we are going to describe and discuss about the various medium of Distribution systems.



## Outcomes



### Outcomes

#### Upon completion of this unit you will be able to:

- *Describe* the benefits of using Content Distribution Systems.
- *State* the role of satellite in Distribution System.
- *Identify* various Image Formats.
- *Examine* various Digital Text Formats.
- *Differentiate* between Television, Radio and Internet formats.

## Terminology



### Terminology

<b>HD:</b>	High Definition is an increase in display or visual resolution over a previously used standard.
<b>NTSC:</b>	National Television Standard Committee. This standard is basically used in western countries which fit their Television specifications which is 16:9.
<b>PAL:</b>	Phase Alternating Line. This standard is basically used Asian countries which fit their Television specifications which is basically 4:3.
<b>FPS:</b>	Frames Per Second. A video of real time shoot has 24 frames or 24 images in a second. While in Animation, we can choose “n” number of frames per second.
<b>CDN:</b>	Content Delivery Network. The network on which we deliver our content i.e. Television, Radio, Internet etc.
<b>HD:</b>	High Definition is an increase in display or visual resolution over a previously used standard.



## Benefits of using Content Distribution Systems

*Content Distribution System* (CDS) especially Digital System has created stories of Rags to Riches. When we think about Bill Gates, Sabeer Bhatia and similar people, it is the content distribution systems which made them successful as well as contribute to the society. It is not only about the idea or dreams; it is about how to bring it to the world. Here is the sub division of some varieties of people who require the services of Content Distribution systems:

- Categorical people i.e., Singers, Dancers, Talented people who were once limited to their localities are now making it to the Televisions, Internet Shows etc. and earning name and fame without big investments. Hence, the distribution system is a boon for the creative people.
- There are also other categorical peoples like Artists, Fashion Designers who are also benefited from the Distribution System. Today, a client can have access to Designers worldwide and utilize their services and even pay them without any problem.
- And again there are creative people with business ideas. For people with ideas, now-a-days there is no hurdle for finances. There are hungry venture capitalists all around hunting for fresh and new ideas.



### Tips and Notes



### Reflection

- Content Distribution is the process of transferring your work to the hands of your viewers or customers. There are lots of works which are brilliantly done but are not properly channelized to be showcased to the world.
- Make sure at the end of this course that you know at least a few ways i.e., through T.V., Radio, Internet through which you can display your work in this mass media.
- Imagine that you have a complete product which you have prepared creatively. It may be anything i.e., Poetry, a short story, an Art, a Music, a Short video film, a Photography work etc.



- Now study this content material and visualize yourself of distributing the content as mentioned in this course material.

Budget limitation has always been a barrier for content developers. They create the contents and are bound to sit on it till they receive the medium to transfer it to the world. But with the help of latest technologies like internet, television etc. even a small developer can attempt to enter into the market with economical budget and limited resources and then bank upon his merit.

Consumers play a big role in acceptance of the contents. Today, the consumer has unlimited choices at a particular time. If a consumer wants to watch a movie, he has internet in his PC, laptop or Smartphone with unlimited contents. He has the choice to choose and select on his own. The same process goes for any contents from cooking receipt to stitching sweaters; all the tutorials are available via content distribution systems on the internet.

Due to various formats of the platforms, the developer has make the content in the formats suited on the platforms i.e. operating systems. There are various operating systems like Windows, Linux, Mac, Android etc. So the person has to have access to technical people who can modify their content to be compatible with the operating system of all platforms.

Above all, the ultimate aim is benefit to the user and profitability to the developer. The more is the reach of the content, the higher is the possibility of success. Hence, it is important for the developer to provide his contents in the maximum platforms as possible.

## Role of Satellite in Distribution System

Whenever we see something on a television or internet, we may wonder that where these contents come from. They all come from satellites which are placed on the top in the Universe by talented scientists all over the world. Science has made tremendous progress through which we are able to get the benefits of these which we have ever imagined as a dream or a fairy tale.



**Title-Fig 4.1 A Satellite**

**Attribution-** [Thegreenj](#)

**Source-** [en.wikipedia](#)

**Link-** [https://en.wikipedia.org/wiki/File:Soyuz\\_TMA-7\\_spacecraft2edit1.jpg](https://en.wikipedia.org/wiki/File:Soyuz_TMA-7_spacecraft2edit1.jpg)

A GEO satellite has the capability to cover an entire continent of the earth. The base signal of the satellite is received by the servers on the earth and the data is then distributed through cable or wireless network.

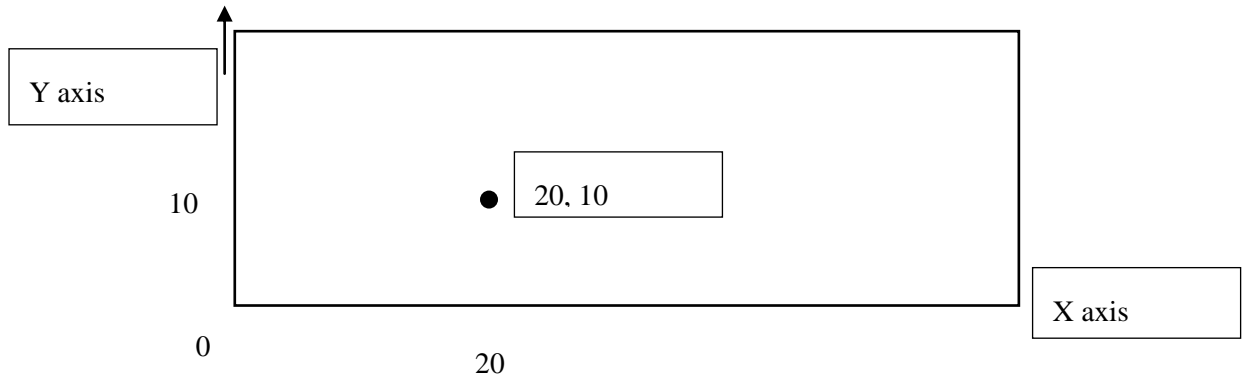
## Image Formats

An image speaks more than words. This was an old saying which is now-a-days used all over in a practical way. Today, you share lots of images everyday of your day to day activities on Social Media and other Networking sites. You need to know the process of storing information on a digital device.

## Storing an Image in a Digital Medium

Storing of Image is an important concept. In the olden days the medium of storage of image was *Analog*, but today the medium is *Digital*. So, nowadays a photograph get stored in Digital medium i.e., Memory Chip, CD, DVD, Pen Drive etc.

An image is made up of *Pixels* [Square Dots]. Each pixel contains a graphical coordinate of x and y axis. So every position of an image is named by its x and y coordinates which is in a Digit format i.e., 20, 10 where 20 represents the x axis and 10 represents the y axis in a graph paper.



**Fig 4.2 Model of a Graph Sheet**

**Drawn by Author**

Now, an image consists of colour also. So, how can a colour are represented in Numbers? It is done through the *RGB* and *CMYK* colour modes which have been developed for the Digital System.

**RGB** mode is mostly used for onscreen presentation images and **CMYK** mode is used for printing purpose.

Each and every colour in the RGB coordinate system is identified by numbers and in CMYK mode system the colours are identified by percentages.

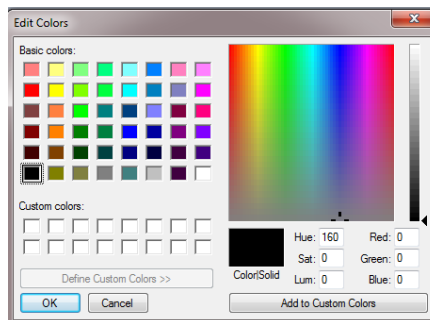
RGB Colour Mode				CMYK Colour Mode				
Red	Green	Blue	Output	Cyan	Magenta	Yellow	Black	Output
0	0	0	Black	0	0	0	0	White
255	0	0	Red	100	0	0	0	Cyan
255	255	255	White	0	0	0	100	Black

**Fig 4.3 Table showing Colour modes with their numerical specification**

**Drawn by Author**

**PRACTICAL:**

- Open Paint from Windows
- Left Click on Edit Colours



**Fig. 4.3 Colour Selector**

**Panel**



### Screenshot

- Click on any colour
- Watch the numbers of Red, Green and Blue.
- It Changes with every colour. Every colour has got a number coordinates.
- The above table demonstrates a few colour combinations.
- With the help of this numbers, we can note down the colour coordinates and apply the same coordinates in a different PC to get the same accurate colour.

## Digital Image Formats

Every image contains a digital data when it is stored on any digital device. It remains in a compressed digital form and is displayed when it is processed in a digital software using PC, Laptop, smart phone or any similar digital device. The data is stored in very systematic and organized way so that is ready to create the output whenever desired.

The aim of Digital format caters the need of Digital output display and for print medium also. The image uses two different colour modes for different kinds of output. RGB (Red, Green, and Blue) colour mode is used for an image which needs to be displayed on any digital device only. CMYK (Cyan, Magenta, Yellow, and Black) colour mode is used when the image data needs to be processed for creating a printout on the printer.

A digital image comprises of Raster and Vector calculation techniques. Any image is processed using *Raster* techniques contains each and every information of position and colour of a pixel. *Vector* technique is process through mathematical calculations. Here only the end points data is acquired and processed into a complete output. The data of each and every pixel is not required in vector format. Colour depths like 8 bits, 16 bits etc. are used now-a-days to enhance the colour depth quality of the images. The more is the depth, the more is the clarity and quality of the image.

*Colour Algorithms* are used to process images. This is complete scientific information of software creation which is not comfortable to be understood by a normal person. However, we can have the base calculation method through which the image file size of any photo can be calculated. The calculation varies from content to content, an image size which is equal for two





photographs do not guarantee the equal data consumed. An image with more colour combinations will have a big file size as compared to images with fewer colours utilized in a file.

*Compression* and *Decompression* techniques are used by various Image processing software providers to have control on the quality of the image as well as the memory consumed by the image. They are stored in various extensions formats which are compressed or uncompressed. However, a user of today is least bothered about the image size due to availability of high configuration systems at an economic and affordable price.

In the table shown in Fig. 4.4 we can see the commonly used Formats for saving files on Digital software. They are also called extensions.

Raster Formats	Vector Formats	Compound Formats which are both raster and vector
1. JPEG, JPEG 2000	AI (illustrator files)	EPS
2. BMP	CDR (Coreldraw files)	PDF
3. TIFF	INDD (InDesign files)	SWF
4. TGA	FLA (Flash files)	PICT
5. PSD	DWG (AutoCAD Drawing files)	
6. GIF	DXF (AutoCAD 3D Files)	
7. PNG		

**Fig. 4.4 Table showing Formats of a Digital Graphic Content**

**Created by Author**

The above mentioned are only a few types of formats which are mostly used by Graphic Designers. There were lots of other formats which are not used now-a-days.

For example, an 800 x600 pixel photograph with 24-bit colour depth would consume -

$800 * 600 * 24 = 11,520,000\text{bits} = (11,520,000 / 8) 1,440,000\text{bytes}$   
= 1.44 MB approx.



## Digital Video Formats

Digital Video formats have been prepared by various companies for the convenience of the users. Video files comprise of millions of images arranged one after another in a systematic sequence. Hence, these files consume more data and files become heavier. These files are kept in compressed form so that the file size is less and can easily be viewed by the user.

Several *codecs* have been made by companies to prepare the video files. A code is formed using the audio and video container file which is called *essence*. The program which is used to decode the video and audio file is termed as *codec*. Whenever we need to play a video file then the codec in which it has been compressed must be installed in the PC, Laptop or Smartphone.

The most formats which are commonly used are “Avi” and “Mov”. In olden days these two formats have ruled the digital video world. But the latest trend of video format is “mp4”. This format supports PC, Laptop, Television as well as Smart phones. These files consume very less memory and give a good and fine picture quality. There are formats like “mkv” also which has an excellent additional feature to store multiple language audio. We have a single video file in it with options for listening to multiple languages as desired by the user.

Some mostly used formats are shown in Fig. 4.5.

Format	Description
<b>AVI</b>	It is the mostly popular format which is used from the olden days to play video files. It can be played on any media player.
<b>Mpg, Mpeg</b>	It is a compressed form of Video which consumes less space as compared to the avi files.
<b>Mp4</b>	It is an MPEG-2 format of compression which further compresses without loss of quality of video.
<b>MKV</b>	It is a video and audio format which has the capability of keeping multiple audio track in different languages i.e., one can view the video and has the option of choosing the languages stored in it.
<b>VOB</b>	It is the video format used in DVDs for playing the file



	in Computer DVD ROMs as well as DVD Players in a Television.
<b>FLV</b>	It is a Format created by flash which can include text, video and audio and is in a compressed format for linking in DVD Authoring software's.
<b>MOV</b>	It is a format of Quick Time Movie application.
<b>WMV</b>	It is a format supported by Windows Media Player without compression.
<b>3gp</b>	It is a format which is compressed and used for playing in Mobile players. It consumes very less memory.

**Fig. 4.5 Table showing commonly used formats for video**

Created by Author

## Digital Audio Formats

An audio uses frequency data for storing the files in digital format. A digital format of audio has opened gateways for lots of people in the music industry to spread their music worldwide without much expense. An audio format is made up of Audio codecs. The data is presented in a compressed form to reduce the size of the file. Compression comes in various varieties for i.e., "mp3" or "aac" or "3gp" etc. There are uncompressed forms of audio like wav. At the time of editing an audio content, "wav" format is preferred and the time of output for distribution, a compressed format like "mp3" is preferred. The raw bit stream of the audio file is embedded in form of a container in a defined layer of storage. Some popularly used Audio formats are shown in Fig. 4.6.

Format	Description
<b>Uncompressed Audio Formats:</b> <ul style="list-style-type: none"> <li>• Wav</li> <li>• Aiff</li> <li>• Au</li> </ul>	These formats are used to play audio on a windows operations system based PCs and laptops. It is the uncompressed format which is recorded and used at the time of editing in Audio editing software's like Sound Forge etc.



	<p>These files are of big size which uses RIFF structure. These types of files are of very high quality without any distortion or loss.</p>
<p><b>Lossless Compressed Audio Formats:</b></p> <ul style="list-style-type: none"><li>• Flac</li><li>• Wavpack</li></ul>	<p>These are the file formats which compress the file size, but maintain the same quality. We know about compressing files in “zip” and “rar” format. It compresses any computer file &amp; when it is restored in uncompressed format, the data remains the same. The same kind of technology is used in lossless compressed Audio formats.</p> <p>When we compress a PCM file converted to “flac”, the file size gets reduced. But when we restore it back to PCM it is the same duplicate of the original. The cost of loss is that the compression ratio is not always the same.</p>
<p><b>Compressed Audio Formats with a few quality loss:</b></p> <ul style="list-style-type: none"><li>• Mp3</li><li>• Aac</li></ul>	<p>MP3 files are the most commonly used files to listen to songs on any device. It consumes very less memory and provides high quality output. It used MPEG III Audio format. It is almost 10% of the compressed file size. Now-a-days we get mp3 files in everyone’s digital equipment.</p>

**Fig. 4.6 Table showing Commonly used Audio Formats**

**Created by Author**

There are software’s which directly record in mp3 format. Other similar format is “aac”. It also uses the similar structure as of “mp3” files. The encoding procedure of certain Digital audio files are as follows:

**MP3-** MPEG Layer 3 Codec,

**WAV and DCT** - PCM, GSM 6.10, MPEG 3 Codec

These codec determines the content and compresses it according to their specifications and try to create a best output with minimal loss of quality.



## Digital Text Formats

Some commonly used Text Formats are shown in the table in Fig. 4.7.

Format	Description
<b>Txt</b>	<i>Text format</i> of file is generated when a file is created using a Notepad or WordPad in a Windows Operating System.
<b>PDF</b>	<i>Portable Document Format (PDF)</i> is the most reliable and available source of compressed text documentation content. It is used to compress a project documentation file which can be displayed in various cross platforms. Adobe PDF reader is the most used and installed package in our Digital equipment's. The file size is very less and faster to download from internet sources. It is a non-editable format which is a boon for the publishing companies. It protects the data to be easily copied with prescribed formatting. Whoever wants to display their content without being manipulated and edited choose "PDF" format to publish their document.
<b>DOCX</b>	<p>It is the file format of the latest version of Microsoft Word. It is a combination of word as well as XML file. The document has the capability to convert itself into a page of a website. It has the capacity to compress the text and images used in the file and convert it into a compact file size document without using any third party compression software.</p> <p>The version of 2007 and above of Microsoft Word use the "docx" format. Previously the "doc" extension format was used. It is the updating quality of Microsoft type of companies which make them the leader in their business expertise.</p>
<b>XLSX</b>	<i>XLSX</i> is a file format used to save Microsoft Excel files. People who work on files similar to table content use Microsoft Excel. It has capabilities of a XML file as well as the excel file. It enjoys all the benefits which an XML files enjoys in internet like compression, link ability etc.



<b>PPTX</b>	<p><i>PPTX</i> is a file format which is used to display PowerPoint files using Microsoft PowerPoint. People use this kind of files to display their presentations in a systematic and exciting format on a projector.</p> <p>The addition of XML qualities in a Microsoft Office files have added much benefits to the user of Microsoft Word, Excel and PowerPoint users. They get extra benefits as well the files are much compact to be transferred on the media network for distribution.</p>
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**Fig. 4.7 Table showing commonly used Text formats**

**Created by Author**

## Television Formats

Television is a medium of mass communication. Television is a combination of video and audio giving us an excellent treat to our eyes and ears. It captures real events & portrays it in front of us as if it is going “LIVE”. Television comprises of programs such as News which gives us information about the happenings all over the world. Television serials are the reflections of varieties of drama going around in different families. A film in a Television is a complete life story in 2 to 3 hours.

Television is a form where any subject can be displayed with a minimal expense. Now-a-days due to availability of easier and economical digital devices available for creation of Digital Videos, the content is not limited to high end professionals only. Amateur people can also prepare programs for television using mobile video cameras also.

Educational programs are formed for all categories of studies. There are ultimate choices of educational programs available on Television channels. It is not only the education of school, college and tuitions which matter today. Programs related to learning on Television channels also form a major source of education industry where there is shortage or lack of trained professionals.

The raw source is transmitted through signals and broadband to satellites above the Earth. From there, it is distributed to various Television Channel providers. Again, they distribute it to the common public either through cable network or wireless network using 2G, 3G, 4G, 5G, etc. Our Television set has to be connected to set top boxes to receive the signals and the picture tube in the



Television converts the signal into audio and video content which is enjoyed by the viewer.

## Technical formats of Television Video Output

There are various formats which are used for Television output in different countries. Technology is being developed parallel from all over the world. It is not that technology is manufactured in a single place. The procedure of China will not be equal to the procedure of America, but the output may be same. We see picture in PAL format and also in NTSC format. But the process of creation is different. The descriptions of the formats are as follows:

### PAL – Phase Alternating Line

The pixel size of PAL is **720 x 576** pixels. The video is encoded with colours for television of analogue as well as digital medium in Phase Alternative Line format.

<b>Developer:</b> Walter Brunch, Telefunken, Hannover, Germany	<b>Inputs:</b> Dr. Druse & Gerad Mahler (de)	<b>Patents:</b> Telefunken, 1962
<b>Inventor:</b> Walter Brunch	<b>Unveiled:</b> European Broadcasting Union (EBU), 3 <sup>rd</sup> January 1963	<b>Frame Rate:</b> 25 frames per second

Fig. 4.8 Table showing Developer Details of PAL

Created by Author

### NTSC – National Television Standard Committee

The pixel size of NTSC is **720 pixels x 480** pixels. This kind of format is mostly used in Western Countries, island nations of Pacific and other territories. The frame rate of NTSC is 30 frames per second. This kind of size gives a cinematic resolution look where the length is in a high proportion to width.

### HD – High Definition

HD means *High Definition*, is the current trend which is an increase in display or visual resolution over a previously used standard.

The pixel size of HD – **1920 pixels x 1080** pixels

**1280 pixels x 720** pixels

The quality is very much clearer and larger as compared to PAL or NTSC.



## A Sample specification sheet of a Television Format

The following table in Fig. 4.9 demonstrates the specifications and settings which are required for a Television format to be broadcasted.

**Fig. 4.9 Table showing Sample specification sheet for Television format**

<b>Hard Drive</b>	Windows PC formatted as NTFS or MAC formatted as HFS+, with transfer and power cables
<b>Field Dominance</b>	Upper field First
<b>Closed Captions</b>	Separate EIA-608/708B .scc file delivered on the same hard drive, "popon" style, with Drop Frame time code to match video file.
<b>NLE Export Formats</b>	ProRes 4:2:2, @ 147 mb/s or ProRes 4:2:2 HQ @ 220 mb/s or DNxHD.mov @ 145mb/s or @220 mb/s
<b>Image Format</b>	1080i (Interlaced) 1920 x 1080
<b>Field Rate</b>	59.94 (Frame rate of 29.97)
<b>Time Code</b>	Drop Frame
<b>Luminance (Y)</b>	Waveform (0-100 IRE)
<b>Chroma (UV)</b>	Waveform (0-105 IRE)
<b>Audio Phasing</b>	In phase, stereo audio must be fully mono capable.
<b>Audio Bit Depth</b>	24 bits
<b>Sample Rate</b>	48 Khz
<b>Audio Channels</b>	CH 1. left and CH 2. right full mix stereo
<b>Audio Stems</b>	Delivered as separate files, audio stems will include at a minimum; stereo music and effects tracks and a dialogue track
<b>Headroom</b>	Program audio peaks no more than minus 10 dBFS
<b>Loudness</b>	Minus 24 LKFS (+/- 2dBFS) as per BS.1770-3 Dialog





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## Radio Formats

Radio plays a very vital role to the people living in mostly the remote parts of a country. Even though there are lots of better remedies available in form of Television, Computer, Smart phone etc. Radio has its own importance and dominance. It is an important source for the underdeveloped areas of a country.

For the people of today, Radio has been given a new identity as FM Radio. It is the latest trend which is going on today. Radio jockeys have transformed themselves to suit the needs of the modern people. Programs on radios are brand new and do not portray repeated songs only.

Specified programs are made for radios to attract people and give them important information as well as entertainment. Radio talks with famous personalities, Knowledge-able programs, Quiz shows etc. are now a part of modern radio.

In case of power cuts or any natural calamities happenings in an area, Radio is the only means of communication which operates on battery. People of remote areas of various countries of today also enjoy cricket commentaries on radio forming a group. It is a stage or stepping stone of growth to the modern age. Even though we have risen to the above steps of the ladder, Radio remains a memorable and useful part of our journey.

Lots of Radio FM's channel have come into emergence in every state and is spreading its wings all over the nation.

## Technical formats of Radio Audio output

The following table in Fig. 4.10 displays the settings which are required for a radio output.

File Format		Compression Rate (kbps/channel)	Resolution (bits)	Frequency Sampling (kHz)
Linear PCM	.wav	Uncompressed	24	48
Broadcast Wave MPEG1 Layer II	.wav	192 kbps/ch.	16	48
Linear PCM	.wav	Uncompressed	16	48,44.1
MPEG1	.mp3	160-320	16	48,44.1



Layer III		kbps/ch.		
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**Fig. 4.10 Specification of Radio output**

**Created by Author**

Technically, recording the audio content required for Radio is far easier than in the previous days. Now-a-days any one can record audio content with the help of their mobile phones and edit it in a studio. The quality of audio recorded in a Mobile phone today is very good and can be of broadcast quality also is recorded in a silence location.

So, distribution of Advertising and Music content on Radio is a very powerful and less expensive source for any company or individual.

## Internet Formats

*Internet* is a platform which supports almost each and every format to upload and download. People can download programs, software's, videos, songs, text books, articles etc. from the Internet. It is a connection between the device of the user and the Server. The data hub is termed as World Wide Web. Each website has got a name called *domainname* & the process of uploading data into your registered website space is called *hosting*.

There is lots of sale of online services and products which can be downloaded directly from Internet. Products like e-books, audios, videos, project report analysis data's etc. can all be collected from websites. There is minimal limitation on formats of file available on the Internet.

Internet serves as a medium of Advertising. Advertisements can be displayed through text, images used to create banners and posters on internet, video Advertisements, Animated flash banners and audio advertisement etc. Hence, all the modes of advertising can be applied on Internet.

The motive of Internet is to provide information and products required by the people from all corners of the world. The similarity and portability of products from one operating system to other has enabled all kind of product developers to develop in one platform and then convert it to be in useable format in other platforms.

The speed of Internet is increasing day by day. From 2G to broadband, now from 3G to 4G has enabled to transfer even files of higher size to be transferred. Even now 5G is on the way to



enter into the market. The print media has been partially converted into Internet Media. The messages which were required to be printed and distributed are now distributed online for a very low cost and high reach to millions of people. A data created by a person has the possibility to spread worldwide with minimum investment on Internet websites.

## Technical formats of Internet contents output

The following table in Fig. 4.11 displays the formats for an Internet output.

Format	Platform
<b>Text Format</b>	Text format files are mostly displayed in WebPages in HTML format.
<b>Video Format</b>	Video format files are displayed in internet sites like YouTube etc. We can insert a video format file in an html page also.
<b>Audio Format</b>	Audio format files of Film songs, album songs, etc. can also be embedded in a website and can be played from a webpage file.

**Fig. 4.11 Formats for Internet output**

**Created by Author**

Overall, the content of text, audio and video remains the same, but there are specified formats which reduces the file size so that they can be easily viewed and downloaded from the internet.

## CD/DVD/Hard Disk/Pen drive/External Hard Disk

The major source of Digital Content distribution is CD (Compact Discs), DVD (Digital Video Disc or Digital Versatile Disc). Optical Media technology is used in storing of digital data's on the Disk.

As day to day there are developments, the latest trend of data distribution is a Pen drive or an External Hard Disk.

The difference between a CD/DVD and a Pen Drive is the process of Data Transfer. In case of CD/DVD one has to write the CD/DVD using writing software's like Nero Burning Rom etc. Where as in a Pen Drive, we need to just copy the file from our Hard Drive and Paste it in the Pen Drive. It is a matter of two or three clicks only. Hence Pen drives are mostly popular today. External Hard Disk is



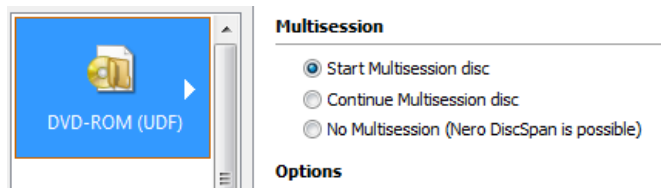
also used in cases when the amount of data files is of higher capacity.

### Steps of writing a CD/DVD using Nero

1. Insert the Blank DVD in the DVD writer
2. Open Nero Burning ROM

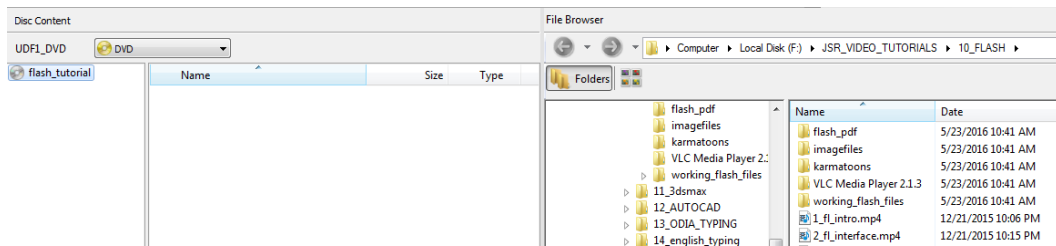


Screenshot



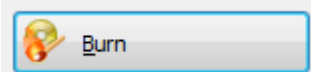
Screenshot

3. Choose – Start Multisession disc – New



Screenshot

4. Choose the files from the folder.
5. Set the Burning speed setting i.e., 8x, 12x, 16x etc. The lower the speed, the writing quality would be better. But the time taken for burning in low speed will be a bit longer than higher speed.

6. Choose – Burn  Screenshot



### Case Study

- Study the story of “Steve Jobs” through internet search engines, which has made a revolution in the Digital Industry. His story of i-phone and i-pad truly determines how Digital Industry has helped lots of various artists from all over the world to emerge into successful people, the trend which still continues today.

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## Unit summary



### Summary

In this Unit you learnt about the Content distribution system which will enable you to display outputs in various mediums. You learnt the various Image formats, Digital Text Formats and Satellite Distribution systems.

The unit also described the steps involved to write a CD/DVD using Nero software.

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## Assignment



### Assignment

- Write/Burn a DVD using Nero with some photographs and video and submit it to the University.



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## Assessment



### Assessment

1. Write the three formats of a Video.
2. List three formats of an Audio.
3. Write the pixel size of NTSC format.
4. Find the pixel size of PAL format.
5. State the maximum pixel size of HD format.
6. Describe the various visual and audio formats.
7. Write a detailed on the importance of content distribution.

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## Resources

- [www.col.org](http://www.col.org)
- [www.wikieducator.org](http://www.wikieducator.org)
- [www.slideshare.net](http://www.slideshare.net)
- [www.ebookbou.edu.bd](http://www.ebookbou.edu.bd)
- [www.knowledge](http://www.knowledge)