

Unit - 1

Applications of Computer

Desktop Publishing

- **Desktop publishing (DTP)** is the creation of documents using page layout skills on a personal computer primarily for print.
- Desktop publishing software can generate layouts and produce typographic quality text and images comparable to traditional typography and printing.
- This technology allows individuals, businesses, and other organizations to self-publish a wide range of printed matter.
- Desktop publishing is also the main reference for digital typography. When used skillfully, desktop publishing allows the user to produce a wide variety of materials, from menus to magazines and books, without the expense of commercial printing.

Desktop Publishing

- Desktop publishing combines a personal computer and WYSIWYG page layout software to create publication documents on a computer for either large scale publishing or small scale local multifunction peripheral output and distribution.
- Desktop publishing methods provide more control over design, layout, and typography than word processing. However, word processing software has evolved to include some, though by no means all, capabilities previously available only with professional printing or desktop publishing.
- Eg of Desktop Publishing - Adobe InDesign, Corel Draw, In House Digital Publishing Software, First Publisher, FrameMaker Microsoft Publisher, PagePlus etc.

Spreadsheet

- A **spreadsheet** is an interactive computer application for organization, analysis and storage of data in tabular form.
- Spreadsheets are developed as computerized simulations of paper accounting worksheets.
- The program operates on data entered in cells of a table. Each cell may contain either numeric or text data, or the results of formulas that automatically calculate and display a value based on the contents of other cells. A spreadsheet may also refer to one such electronic document.
- Spreadsheet users can adjust any stored value and observe the effects on calculated values. This makes the spreadsheet useful for "what-if" analysis since many cases can be rapidly investigated without manual recalculation. Modern spreadsheet software can have multiple interacting sheets, and can display data either as text and numerals, or in graphical form.

Spreadsheet

- Besides performing basic arithmetic and mathematical functions, modern spreadsheets provide built-in functions for common financial and statistical operations. Such calculations as net present value or standard deviation can be applied to tabular data with a pre-programmed function in a formula. Spreadsheet programs also provide conditional expressions, functions to convert between text and numbers, and functions that operate on strings of text.
- Spreadsheets have replaced paper-based systems throughout the business world. Although they were first developed for accounting or bookkeeping tasks, they now are used extensively in any context where tabular lists are built, sorted, and shared.
- Excel now has the largest market share on the Windows and Macintosh platforms.
- A spreadsheet program is a standard feature of an office productivity suite; since the advent of web apps, office suites now also exist in web app form.

Database

- **What is Data** - Raw and unorganized facts that need to be processed Eg - Abc, 25 (here what is Abc or 25)
- **What is Information** - When data is processed, organized, structured or presented in a given context so as to make it useful, it is called information. Eg – Age – 25
- **Database is**
 - Systematic collection of data.
 - It support storage and manipulation of data.
 - It makes data management easy.

Database

- A **database** is an organized collection of data. It is the collection of schemas, tables, queries, reports, views, and other objects. The data are typically organized to model aspects of reality in a way that supports processes requiring information, such as modeling the availability of rooms in hotels in a way that supports finding a hotel with vacancies.
- A **database management system (DBMS)** is a computer software application that interacts with the user, other applications, and the database itself to capture and analyze data.
- A general-purpose DBMS is designed to allow the definition, creation, querying, update, and administration of databases.
- Well-known DBMSs include MySQL, PostgreSQL, MongoDB, MariaDB, Microsoft SQL Server, Oracle, Sybase, SAP HANA, MemSQL and IBM DB2.

Graphics

- **Graphics** are visual images or designs on some surface, such as a wall, canvas, screen, paper, or stone to inform, illustrate, or entertain.
- In current usage it includes: pictorial representation of data, as in computer-aided design and manufacture, in typesetting and the graphic arts, and in educational and recreational software.
- Images that are generated by a computer are called computer graphics.
- Examples are photographs, drawings, Lineart, graphs, diagrams, typography, numbers, symbols, geometric designs, maps, engineering drawings, or other images.
- Graphics often combine text, illustration, and color.
- Graphic design may consist of the deliberate selection, creation, or arrangement of typography alone, as in a brochure, flyer, poster, web site, or book without any other element. Clarity or effective communication may be the objective, association with other cultural elements may be sought, or merely, the creation of a distinctive style.

Presentation

- A **presentation** is the process of presenting a topic to an audience. It is typically a demonstration, introduction, lecture, or speech meant to inform, convince, or build good will.
- A presentation is a means of communication that can be adapted to various speaking situations, such as talking to a group, addressing a meeting or briefing a team.
- A presentation requires you to get a message across to the listeners and will often contain a '*persuasive*' element. It may, for example, be a talk about the positive work of your organisation, what you could offer an employer, or why you should receive additional funding for a project.
- Presentations are usually delivered direct to an audience. However, there may be occasions where they are delivered from a distance over the Internet using video conferencing systems, such as Skype.
- Microsoft PowerPoint is used to prepare a presentation

Communication

- **Communication is the act of conveying intended meanings from one entity or group to another through the use of mutually understood signs and semiotic rules.**
- The main steps inherent to all communication are
 - The forming of communicative motivation or reason.
 - Message composition (further internal or technical elaboration on what exactly to express).
 - Message encoding (for example, into digital data, written text, speech, pictures, gestures and so on).
 - Transmission of the encoded message as a sequence of signals using a specific channel or medium.
 - Noise sources such as natural forces and in some cases human activity (both intentional and accidental) begin influencing the quality of signals propagating from the sender to one or more receivers.
 - Reception of signals and reassembling of the encoded message from a sequence of received signals.
 - Decoding of the reassembled encoded message.
 - Interpretation and making sense of the presumed original message.
- The scientific study of communication can be divided into:
 - Information theory which studies the quantification, storage, and communication of information in general;
 - Communication studies which concerns human communication;
 - Biosemiotics which examines communication in and between living organisms in general.
- The channel of communication can be visual, auditory, tactile (such as in Braille) and haptic, olfactory, electromagnetic, or biochemical.
- Human communication is unique for its extensive use of abstract language. Development of civilization has been closely linked with progress in telecommunication.

Browser

- A **web browser** (commonly referred to as a **browser**) is a software application for retrieving, presenting and traversing information resources on the World Wide Web.
- An *information resource* is identified by a Uniform Resource Identifier (URI/URL) that may be a web page, image, video or other piece of content.
- Hyperlinks present in resources enable users easily to navigate their browsers to related resources.
- Although browsers are primarily intended to use the World Wide Web, they can also be used to access information provided by web servers in private networks or files in file systems.
- The most popular web browsers are Google Chrome, Microsoft Edge (preceded by Internet Explorer), Safari, Opera and Firefox.
- The first web browser was invented in 1990 by Sir Tim Berners-Lee. Berners-Lee is the director of the World Wide Web Consortium (W3C), which oversees the Web's continued development, and is also the founder of the World Wide Web Foundation. His browser was called WorldWideWeb and later renamed Nexus
- The first commonly available web browser with a graphical user interface was Erwise. The development of Erwise was initiated by Robert Cailliau.

Function of Browser

- The primary purpose of a web browser is to bring information resources to the user ("retrieval" or "fetching"), allowing them to view the information ("display", "rendering"), and then access other information ("navigation", "following links").
- This process begins when the user inputs a Uniform Resource Locator (URL), for example `http://en.wikipedia.org/`, into the browser. The prefix of the URL, the Uniform Resource Identifier or URI, determines how the URL will be interpreted.
- The most commonly used kind of URI starts with `http:` and identifies a resource to be retrieved over the Hypertext Transfer Protocol (HTTP).
- Many browsers also support a variety of other prefixes, such as `https:` for HTTPS, `ftp:` for the File Transfer Protocol, and `file:` for local files.
- Prefixes that the web browser cannot directly handle are often handed off to another application entirely. For example, `mailto:` URIs are usually passed to the user's default e-mail application, and `news:` URIs are passed to the user's default newsgroup reader.

Function of Browser - contd

- In the case of http, https, file, and others, once the resource has been retrieved the web browser will display it. HTML and associated content (image files, formatting information such as CSS, etc.) is passed to the browser's layout engine to be transformed from markup to an interactive document, a process known as "rendering".
- Aside from HTML, web browsers can generally display any kind of content that can be part of a web page. Most browsers can display images, audio, video, and XML files, and often have plugins to support Flash applications and Java applets. Upon encountering a file of an unsupported type or a file that is set up to be downloaded rather than displayed, the browser prompts the user to save the file to disk.
- Information resources may contain hyperlinks to other information resources. Each link contains the URI of a resource to go to. When a link is clicked, the browser navigates to the resource indicated by the link's target URI, and the process of bringing content to the user begins again.

Web Pages

- A web page (webpage or Web page) is a document that is suitable for the World Wide Web and web browsers.
- A web browser displays a web page on a monitor or mobile device. The web page is what displays, but the term also refers to a computer file, usually written in HTML or comparable markup language. Web browsers coordinate the various web resource elements for the written web page, such as style sheets, scripts, and images, to present the web page.
- Typical web pages provide hypertext that includes a navigation bar or a sidebar menu to other web pages via hyperlinks, often referred to as links.
- On a network, a web browser can retrieve a web page from a remote web server. On a higher level, the web server may restrict access to only a private network such as a corporate intranet or it provides access to the World Wide Web. On a lower level, the web browser uses the Hypertext Transfer Protocol (HTTP) to make such requests.
- A static web page is delivered exactly as stored, as web content in the web server's file system, while a dynamic web page is generated by a web application that is driven by server-side software or client-side scripting. Dynamic website pages help the browser (the client) to enhance the web page through user input to the server.

Email

- **Electronic mail, or email,** is a method of exchanging digital messages between people using digital devices such as computers, mobile phones and other electronics.
- Email first entered substantial use in the 1960s and by the mid-1970s had taken the form now recognized as email.
- Email operates across computer networks, which today is primarily the Internet.
- Some early email systems required the author and the recipient to both be online at the same time, in common with instant messaging.
- Today's email systems are based on a store-and-forward model.
- Email servers accept, forward, deliver, and store messages. Neither the users nor their computers are required to be online simultaneously; they need to connect only briefly, typically to a mail server or a webmail interface, for as long as it takes to send or receive messages.
- Originally an ASCII text-only communications medium, Internet email was extended by Multipurpose Internet Mail Extensions (MIME) to carry text in other character sets and multimedia content attachments.
- International email, with internationalized email addresses using UTF-8, has been standardized, but as of 2017 it has not been widely adopted

Project Management

- **Project management** is the discipline of initiating, planning, executing, controlling, and closing the work of a team to achieve specific goals and meet specific success criteria.
- A project is a temporary endeavor designed to produce a unique product, service or result with a defined beginning and end (usually time-constrained, and often constrained by funding or deliverables) undertaken to meet unique goals and objectives, typically to bring about beneficial change or added value.
- The temporary nature of projects stands in contrast with business as usual (or operations), which are repetitive, permanent, or semi-permanent functional activities to produce products or services. In practice, the management of these two systems is often quite different, and as such requires the development of distinct technical skills and management strategies.

Project Management - contd

- The primary challenge of project management is to achieve all of the project goals within the given constraints. This information is usually described in a user or project manual, which is created at the beginning of the development process.
- The primary constraints are scope, time, quality and budget.
- The secondary — and more ambitious — challenge is to optimize the allocation of necessary inputs and integrate them to meet pre-defined objectives.

Integrated and Suits

- **Integrated software** is a software for personal computers that combines the most commonly used functions of many productivity software programs into one application.
- The integrated software genre has been largely overshadowed by fully functional office suites, most notably Microsoft Office