

Unit -6: Information Technology for communication

Word Processor

Definition – What does Word Processor mean?

A word processor is a type of software application used for composing, editing, formatting and printing documents. Word processors have a variety of uses and applications within the business environment, at home and in educational contexts

Word Processor :-

Word processors are used to create, edit and print documents, and well as save them electronically.

Word processors have the following main functionalities:

- Insert
- Copy
- Cut and paste
- Delete
- Find and replace
- Print
- Word wrap

Advanced word processors, referred to as full-featured word processors, support additional features such as:

Telex

Telex, international message-transfer service consisting of a network of teleprinter connected by a system of switched exchanges. Subscribers to a telex service can exchange textual communications and data directly and securely with one another. Communication is opened by entering the assigned call number of the destination subscriber. On older telex equipment, this is done using a dial or the keyboard on the sender's teleprinter, but it can also be done via the keyboard on telex terminals or on personal computers connected to the telex network. The destination subscriber responds with a code verifying its identity, and the communication line is opened. The typed message is converted to a low-bit-rate electrical signal, which is transmitted over the network—usually channels leased from the telephone system and routed by switching centres operated by the telex provider. When the message arrives at the destination, it is either printed immediately or stored for subsequent printing or display on a monitor.

fax machine

Short for *facsimile machine*, a device that can send or receive pictures and text over a telephone line. Fax machines work by digitizing an image — dividing it into a grid of dots. Each dot is either on or off, depending on whether it is black or white. Electronically, each dot is represented by a bit that has a value of either 0 (off) or 1 (on). In this way, the fax machine translates a picture into a series of zeros and ones (called a bit map) that can be transmitted like normal computer data. On the receiving side, a fax machine reads the incoming data, translates the zeros and ones back into dots, and reprints the picture.

The idea of fax machines has been around since 1842, when Alexander Bain invented a machine capable of receiving signals from a telegraph wire and translating them into images on paper. In 1850, a London inventor named F. C. Blakewell received a patent for a similar machine, which he called a *copying telegraph*.

A fax machine consists of an optical scanner for digitizing images on paper, a printer for printing incoming fax messages, and a telephone for making the connection. The optical scanner generally does not offer the same quality of resolution as stand-alone scanners. Some printers on fax machines are *thermal*, which means they require a special kind of paper.

e-mail (electronic mail or email)

E-mail (electronic mail) is the exchange of computer-stored messages by telecommunication. (Some publications spell it *email*; we prefer the currently more established spelling of *e-mail*.) E-mail messages are usually encoded in ASCII text. However, you can also send non-text files, such as graphic images and sound files, as attachments sent in binary streams. E-mail was one of the first uses of the Internet and is still the most popular use. A large percentage of the total traffic over the Internet is e-mail. E-mail can also be exchanged between online service provider users and in networks other than the Internet, both public and private.

E-mail can be distributed to lists of people as well as to individuals. A shared distribution list can be managed by using an e-mail reflector. Some mailing lists allow you to subscribe by sending a request to the mailing list administrator. A mailing list that is administered automatically is called a list server.

voice mail

an electronic system that uses telephone and a computer to store and then deliver recorded voice messages

2. a message or messages sent or stored in such a system

Internet

The internet is a globally connected network system that uses TCP/IP to transmit data via various types of media. The internet is a network of global exchanges – including private, public, business, academic and government networks – connected by guided, wireless and fiber-optic technologies.

The terms internet and World Wide Web are often used interchangeably, but they are not exactly the same thing; the internet refers to the global communication system, including hardware and infrastructure, while the web is one of the services communicated over the internet.

Multimedia

Multimedia can have a many definitions these include:

Multimedia means that computer information can be represented through audio, video, and animation in addition to traditional media (i.e., text, graphics drawings, images).

A good general definition is:

Multimedia is the field concerned with the computer-controlled integration of text, graphics, drawings, still and moving images (Video), animation, audio, and any other media where every type of information can be represented, stored, transmitted and processed digitally.

A *Multimedia Application* is an Application which uses a collection of multiple media sources e.g. text, graphics, images, sound/audio, animation and/or video.

Hypermedia can be considered as one of the multimedia applications.

teleconference

A teleconference is a telephone meeting among two or more participants involving technology more sophisticated than a simple two-way phone connection.

A teleconference is a telephone meeting among two or more participants involving technology more sophisticated than a simple two-way phone connection. At its simplest, a teleconference can be an audio conference with one or both ends of the conference sharing a speaker phone. With considerably more equipment and special arrangements, a teleconference can be a conference, called a videoconference, in which the participants can see still or motion video images of each other. Because of the high bandwidth of video and the opportunity for larger and multiple display screens, a videoconference requires special telecommunication arrangements and a special room at each end. As equipment and high-bandwidth cabling become more commonplace, it's possible that videoconferences can be held from your own computer or even in a mobile setting. One of the special projects of internet 2 is to explore the possibility of having teleconferences in which all participants actually appear to be in the same room together.

Today's audio teleconferences are sometimes arranged over dial-up phone lines using bridging services that provide the necessary equipment for the call.

Mobile Phone Communication. How it works?

A mobile phone is an electronic device used for mobile telecommunications over a cellular network of specialized base stations known as cell sites. A cell phone offers full Duplex Communication and transfer the link when the user moves from one cell to another. As the phone user moves from one cell area to another, the system automatically commands the mobile phone and a cell site with a stronger signal, to switch on to a new frequency in order to keep the link.

Mobile phone is primarily designed for Voice communication. In addition to the standard voice function, new generation mobile phones support many additional services, and accessories, such as SMS for text messaging, email, packet switching for access to the Internet, gaming, Bluetooth, camera with video recorder and MMS for sending and receiving photos and video, MP3 player, radio and GPS.

Signal Frequency in Cell Phone ADVERTISING

The cellular system is the division of an area into small cells. This allows extensive frequency reuse across that area, so that many people can use cell phones simultaneously. Cellular networks has a number of advantages like increased capacity, reduced power usage, larger coverage area, reduced interference from other signals etc.

FDMA and CDMA Systems

Frequency Division Multiple Access (FDMA) and Code Division Multiple Access (CDMA) were developed to distinguish signals from several different transmitters. In FDMA, the transmitting and receiving frequencies used in each cell are different from the frequencies used in the neighboring cells. The principle of CDMA is more complex and the distributed transceivers can select one cell and listen to it. Other methods include Polarization Division Multiple Access (PDMA) and Time Division Multiple Access (TDMA). Time division multiple access is used in combination with either FDMA or CDMA to give multiple channels within the coverage area of a single cell.

video conferencing (video conference)

A video conference is a live, visual connection between two or more people residing in separate locations for the purpose of communication.

A video conference is a live, visual connection between two or more people residing in separate locations for the purpose of communication. At its simplest, video conferencing provides transmission of static images and text between two locations. At its most sophisticated, it provides transmission of full-motion video images and high-quality audio between multiple locations.

In the business world, desktop video conferencing is a core component of unified communications applications and web conferencing services, while cloud-based virtual meeting room services enable organizations to deploy video conferencing with minimal infrastructure investment.

Required components of video conferencing systems

The components of a video conferencing system include:

- A network for data transfer, usually a high-speed broadband internet connection, which uses similar technology as voice over Internet protocol (VOIP). Local area network (LAN) and integrated services digital network (ISDN) connections are occasionally used as well.
- Two or more video cameras or webcams that provide video input.
- Two or more microphone either located on the individual or within the device that provide audio input.
- A computer screen, monitor, TV or projector that can broadcast video output.
- Headphones, laptop speakers or professional speakers that can be used for audio output.
- Hardware or software based coding and decoding technology, called codecs which can compress analog audio and video (AV) data into digital packets on the distributing end and then decompress the data at the endpoint.
- Acoustic echo cancellation (AEC) software which reduces audio delays and supports real time

How video conferencing works

The video conferencing process can be split into two steps: compression and transfer.

During compression, the webcam and microphone capture analog AV input. The data collected is in the form of continuous waves of frequencies and amplitudes which represent the captured sounds, colors, brightness, depth and shades. In order for this data to be transferred over a normal network — instead of requiring a network with massive bandwidth — codecs must be used to compress the data into digital packets, allowing the captured AV input to travel faster over broadband or Wi-Fi Internet.

During the transfer phase, the digitally compressed data is sent over the digital network to the receiving computer. Once it reaches the endpoint, the codecs decompress the data and convert it back into analog audio and video, allowing the receiving screen and speakers to correctly view and hear the AV data.

What is SMS?

SMS, also known as short messaging service, is the rage in Europe and parts of Asia. Gradually SMS is gaining momentum in the US as a low cost messaging solution. SMS is defined as text messages, up to 160 characters in length, sent to mobile phones. In recent months SMS has become synonymous with any text message sent to a cell phone.

Benefits to SMS

SMS is a convenient, cost effective alternative to voice messaging. SMS popularity has grown as

a result of:

- 1.) Cost – SMS is less expensive than the airtime used for voice calls or web access.
- 2.) Non-intrusive – messages are received in a discrete fashion and do not interrupt an individual if they are in the middle of a meeting
- 3.) Integration Capabilities – many software programs can be set up to send text alerts to mobile phones when urgent conditions exist.

Short Messaging Explained

Short messages can originate from other phones, personal computers or the Internet. Consumers and businesses alike use SMS for remote communication, allowing for staff to be mobile and stay in touch with those who matter.

Who Offers SMS?

Today nearly all the cellular carriers provide some level of SMS or text messaging capabilities. Cost and features vary, with carriers offering a variety of packages to suit individual or business needs. Typically there are three options that carriers provide:

- 1.) Free of Charge – text messaging is included as part of a select plan.
- 2.) Per Message Fee – users are charged per message.
- 3.) Monthly Fee – a set monthly fee includes a specified number of text messages.

Telephone Answering Machine

An answering machine is a device used for answering and recording a caller's message in the event that no one is available to answer the phone in person. Unlike voicemail, which serves the same functionality but is usually a networked or a centralized system made available anywhere as a service, an answering machine is a local device that is attached to or directly incorporated into a physical landline telephone.

An answering machine is also known as a telephone answering device, telephone answering machine, answerphone or message machine.