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Q1. (a) Differentiate between open source software and applications software?

Ans:- ***System software:***

System software is a set of one more programs, which controls the operation and/or extends the processing capability of a computer system. In general, a computer's system software performs one or more of the following functions.

- Supports development of other application software.
- Supports execution of other application software.

- Monitors effective use of various hardware resources such as CPU, memory, peripherals etc.
- Communicates with and controls operation of peripheral devices such as printer, disk, tape

Hence, system software makes the operation of a computer system more effective and efficient.

It helps hardware components work together. Some commonly known types of system software are:

Operating system (Microsoft windows, Apple Macintosh, Linux), utility programs (help users in system maintenance), Communication Software.

Application Software:

Application software is a set of one or more programs, which solves a specific problem or does a specific task. For example, payroll processing software, photo editing software, Graphic designing software etc.

We can obtain the desired software in one or more ways, which are described below:

- While in case of Application software high level language is used for their development as they are developed as some specific purpose software.
- On other hand Application software is used by user to perform specific task
- On other hand in application software can't run independently. They can't run without the presence of system software..

(b) Write different features of system software?

Ans:-Features of System Software

An important feature of System Software are:

- System Software is closer to the system
- Generally written in a low-level language
- The system software is difficult to design and understand
- Fast in speed
- Less interactive

- Smaller in size
- Hard to manipulate

Q2. (a) Discuss different functions of operating system?

Ans:- ***Functions of operating systems:-***

1.Process Management:

Process management module takes care of creation and deletion of processes, scheduling of system resources to different processes requesting them, and providing mechanisms for synchronization and communication among processes.

2.Memory Management:

Memory management module takes care of allocation and de-allocation of memory space to programs in need of this resource.

3.File Management:

File management module takes care of file-related activities such as organizations, storage, retrieval, naming, sharing and protection of files.

4.Device Management:

The device management module of an operating system controls all I/O devices. It keeps track of I/O requests from processes, issues commands to I/O devices, and ensures correct data transmission to/ from an I/O device.

5.Security:

Security module protects the resources and information of a computer system against destruction and unauthorized access.

(b) Explain the use of File Transfer Protocol and TelNet services ?

Ans:- ***File Transfer Protocol (FTP)***:

FTP service enables an internet user to move a file from one computer to another on the internet. A file may contain any type of digital information, text

document, image, artwork, movie, sound, software etc. FTP has two basic services

I. **Downloading**

The process of moving a file from remote computer to one's own computer. II.

Uploading

The process of moving a file from one's own computer to a remote computer. In FTP service, a file transfer takes place in following manner:

1. A user executes ftp command on his/her local computer, specifying address of the remote computer.

2. An FTP process running on user's computer establishes a connection with an FTP process running on remote computer.

3. The system then asks the user to enter his/her login name and password on the remote computer to ensure that the user possess permission to access the remote computer. 4. After successful

login, the user downloads or uploads the desired file(s).

Note that a user needs access rights for a remote computer to transfer files to/from it. With this restriction, it is almost impossible to provide access rights to the large number of users on the internet to a computer that contains sharable information. The concept of anonymous FTP site solves this problem.

3) Telnet services:-

Telnet service enables an internet user to log in to another computer on the internet from his/her local computer. That is, a user can execute the telnet command on his/her local computer to start a login session on a remote computer. This action is also called “remote login”.

To start a remote login session, a user types telnet command and address of the remote computer on his/her local computer. The remote computer then authenticates the user by asking him/her to enter a login name and password. If the user specifies a

correct login name and password, the remote computer logs in the user and telnet command then enters input mode. From now onwards, anything that the user types on the local computer is sent to the remote computer for processing.

Some common uses of telnet service are:

1. For using computing power of a remote computer.

2. For using some software on a remote computer, which is not available on user's local computer.

3. For logging in to one's own computer from another computer.

Q3. A) Explain Metropolitan Area Network (MAN) with a suitable example?

Ans. ***Metropolitan Area network***

- Design to extend over a district, or council even in entire day

- At may be a single network such as a cable television network or may be a means of connecting a number of LANs into a larger network so that resource may be start LAN-to-LAN as well as device to device
- For example a company can use a MAN to connect3 the LANs in all of offices through out a city

Computer Network.

- Two are more computer connected together for sharing data resources

Three basic categories.

1. Local area network (LAN)
2. Metropolitan area network(MAN)
3. Wide area network (WAN)

- Types of network is determined by side ownership distance and its physical architecture .

1.wide Area Network

Provide long- distance transmi6 of data voice , image , and video information over large geographical areas that may comprise a country a continent , or even the whole world.

2 .Local area network

- Link the device in a single office, buildings or campus
- Depending on the needs of an organization and the city of technology used.
- A LAN can be as simple as two PCs and a printer in someone home office or it can be extend throughout a company and include voice sound and video peripherals.

(b) Define topology? Which topology would you chose to setup a local area network and why?

Ans. the branch of mathematics concerned with generalization of the concepts of continuity, limit, etc

a branch of geometry describing the properties of a figure that are unaffected by continuous distortion, such as stretching or knotting Former name: analysis situs

math’s a family of subsets of a given set S, such that S is a topological space

the arrangement and interlinking of computers in a computer network

the study of the topography of a given place, esp as far as it reflects its history

the anatomy of any specific bodily area, structure,

Network topologies

- The way computer are connected together in a network is called topologies of network.
- The way a network is laid out ,either physically or logically
- The basic topologies are

1. BUS topologies
2. STAR topologies

3. RING topologies
4. MESH topologies

- BUS topologies

One long cable acts as a backbone to link all the device in the network

Node are connected to the bus cable by drop line and taps.

A drop line is a connection running between the device and the main cable

A tap is connecter that splices into the main cable.

STAR topologies

Each device has a dedicated point to point link only to a central controller usually called a hub

The device are not directly connected to each other

The controller (HUB) acts as an exchange.

Q4. In your opinion, what are the different types of common media used for storage, access and transmission of information? Explain each type in detail?

Ans:-:

Media Storage is a system process that is needed when you view, download, play, and stream images, videos, audio files, and other media files. As a system service, it is not available from your phone desktop.

Common media:

Common media for storage, access and transmission of information are:

Text (alphanumeric characters)

Graphics (line drawings and images)

Animation (moving images)

Audio (sound)

Video (video graphed real life events)

Text (Alphanumeric character):

Alphanumeric characters are used to prevent information in text form. Computer are widely used for test processing

Keyboards, OCRs , computer screens. And printers are some commonly used hardware devices for processing text media.

Text editing , text searching, hypertext, and text importing/ exporting are some highly desirable features of a multimedia computer system for better presentation and use of text information.

Graphics (line drawings and images)

Computer graphics deals with generations, representation, manipulation and display of picture (line drawings and images) with a computer.

Locating devices (such as a mouse , a joystick, or a stylus) digitizers , scanners , digital cameras , computer screens with graphics display capability, laser printers and plotters are some common hardware devices for processing graphics media.

Some desirable features of a multimedia computer system are painting or drawing software, screen capture software, clip art , graphics importing and software support for high resolution.

Video (videographed real life events):

Computer video deals with recording and display of a sequence of images at a reasonable speed to creates an impression of movement. Each individual image of such a sequence is called a frame.

Video camera , video monitor , video board and video editor are some of the commonly used hardware devices for processing video media.

Some desirable features of a multimedia computer system with video facility are video clips and recording and playback capabilities.

Animation (moving images):

Computer animation deals with generations, sequencing and display (at a specified rate) of a set of images (called frames) to creates an effect of

visual change or motion, similar to a movie film (video)

Animation us commonly used in those instances where videography is not possible or animation can better illustrate the concept than video.

Animation deals with displaying a sequence if images at a reasonable speed to creates an impression of movement. For a jerk free full motion animation, 25 to 30 frames per second ia required.

Audio(Sound):

Computer audio with synthesizing , recording, and playback if audio or sound with a computer

Sound board, microphone, speaker, MIDI devices , sound synthesizer , sound editor and audio mixer are some commonly used hardware devices for processing audio media

Some desirable features of a multimedia computer system are audio clips, audio file importing , software support for high quality sound, recording and playback capabilities text to speech conversion

software, speech to text conversions software , and voice recognition software