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IGNOU - Student Identity Card

2106539050

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PROGRAMME TITLE: CERTIFICATE IN LIBRARY AND INFORMATION SCIENCE	ENROLLMENT NO.: 2106 5390 50
COURSE CODE: BLII-014	NAME: MITALI SHARMA
COURSE TITLE: ICT IN LIBRARIES	ADDRESS: A-636A, SUSHANT LOK-I, GURGAON-122009, HARYANA
ASSIGNMENT NO.: AST/TMA/Jan.2021-July 2021	DATE: 22/10/2021
STUDY CENTER CODE: 0707	
STUDY CENTER: JAMIA MILIA ISLAMIA UNIVERSITY	Mitali Sharma MITALI SHARMA

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I.1) TYPES of COMPUTERS

I By Function/Structure

a) Analog computer – uses continuously changeable aspects of physical phenomena to model the computations, eg – electric / hydraulic quantities. Used for scientific application
eg: Thermometer

b) Digital computer – discrete computational implementation – operate on binary data
eg: Desktops / silicon chip PCs.

c) Hybrid computer – exhibit both analogue & digital features eg – Space Flight processors
Especially accurate for solving Differential Eq"s.

II By size.

a) Micro – Small, inexpensive. comprise of a microprocessor & a CPU. minimal circuitry mounted over single circuit board. Eg Desktop.

b) Mini – multi user computer, can support 1000s of users at the same time.

c) Mainframe: used for dealing with bulk-heavy data on a single device. multi-user capacities.

d) Supercomputer: Used for extremely high precision computations. very large computers.

III By Purpose

a) General Purpose – Calculators, Personal computer, etc.

b) Special Purpose – Designed to perform single operation with optimum efficiency & accuracy
eg – Thermometer.

I 2.) System Software

System software includes the programs that are dedicated to managing the computer itself, such as the operating system, file management utilities, & disk operating systems.

It is software that provides programs with a platform to interact with the hardware. These software are written in low-level languages to directly interact with the hardware.

They provide the interface between the hardware & the end-user

It facilitates sharing of limited computer resources and manages allocation of system threads or memory.

It also co-ordinates communication between different software applications running on the higher level.

It is the backbone of the computer, because it forms the bridge b/w hardware & software.

Hardware ⟷ System Software ⟹ Applications

End User

It manages processes, memory allocation, networking routes and I/O operations by providing device drivers for each of the specific devices.

Examples - Operating System (eg Linux), Antivirus Utilities (AVG)

etc.

I.3) External Storage Devices

External storage devices are devices that store data outside of the computer's architecture. Such devices may be permanently attached to the computer or may be removable or may use removable media.

Types.-

→ Magnetic-

1. Hard Disk Drives- Has large-size data storing capacities.

consists of circular magnetic disks mounted on a hub. Data is recorded on both sides of disk. Data is stored in tracks & sectors. Allows direct as well as serial mode access. Readable & writeable. Most popular permanent storage device as of now. ~ 1TB of data

2. Floppy Disks- obsolete these days

Portable & light-weight

Contain a magnetic disk in a squareish plastic case. Readable, writeable.

~ 1.44 MB.

→ Optical- use laser light technology for data storage & retrieval

1.) Compact Disk- Come in different types - Read only, Recordable, Re-writeable etc. Generally ~12cm circular disks, can store upto 700MB Readonly functions faster. Usually used for Multimedia storage / software distribution

2.) Digital Versatile Disk- stores multiple

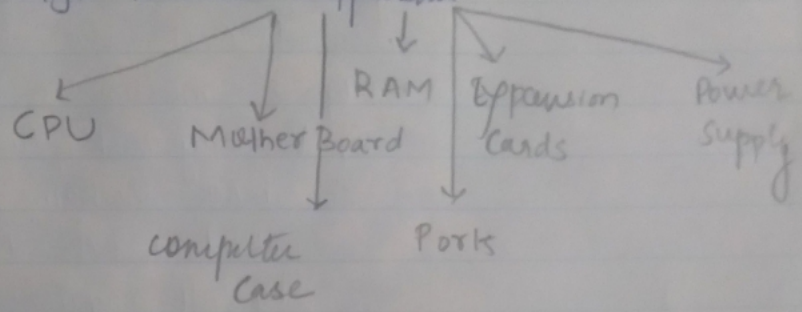
layers of data can store & function much more & faster than CDs due to layer architecture. Used vastly as multimedia storage.

3) Blu-Ray Disk - uses blue rays to be read, hence the name - in contrast to red-laser used for DVDs. Much faster but not supported by All computers.

→ Flash Memory

Integrated circuit storage of data, highly portable and efficient in R/W operations. come as cards or with USB interface as "pen-drives".

I A) Major Hardware Components



CPU

Central Processing Unit - Control Unit + Arithmetic & Logic Unit

Brain of the computer
Processes information & performs operations
Stores mid-calculation data into Cache.
Reads Raw data from Input Devices
Consists of a processor chipset.

Computer Case

The casing of the computer within which all the components are mounted, usually made with flexi-carbon mix plastic, bundled with power supply, and with window/holes to the accessible ports.

Ports

Access points / interfaces to connect other devices with the computer eg - USB port for pendrive

Three Main Types

Mouse : 1) Serial - transmit data one bit at a time
2) Parallel - for printers, etc, multiple bit transfer.
3) Universal Serial Bus - very fast data transfer.

Mother board

Printed circuit board. consists of the RAM, the CPU & expansion slots.
Also has connection to multiple ports
Main function is to hold the BIOS that manages functions between components

Supplies current from CMOS battery to the chipsets. Has several special receptacles to connect peripheral devices too

RAM

Random Access Memory- temporary volatile memory for cache storage b/w processes
Very fast data transfer for computations.
Requires power supply to run & the memory is transitory, it is lost with power off.

Expansion Cards

Electronic circuit boards to provide additional functionality to the computer - connected to the computer via expansion slots on the Motherboard.

Power Supply

Supplies power to a computer. Converts alternating current to Direct Current required by internal components. Supplies regulated power to the motherboard, disk drives, cooling fans etc.

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I 5.)

i) Buy/rent a connection from an Internet Service Provider (eg Jio / Airtel, etc.)

a) Cable connection

ii) You will be provided with a modem when you acquire a connection

iii) connect modem to a power socket

iv) Using ethernet cable connect modem to your PCs port or a router (wifi)

v) Switch on the modems power supply and connect to the Internet using a browser on your PC.

b) DSL collection

ii) Plug DSL modem to a power supply

iii) connect DSL to your PC using an ethernet cable

iv) Call ISP to associate your new modem's serial number with your connection

v) The ISP will provide you with an account username & password

vi) Login to modem's administrative screen in your browser (192.168.0.1 usually)

vii) Enter DSL account details and save settings

viii) connect to Internet

* Note that switching on a modem takes about a minute, till when lights keep blinking. When all lights turn on & are steady, connection is ready.

I.6. ICT in Housekeeping Ops.

i) Collection /Acquisition

ICT makes it possible to acquire knowledge sources & media easily from across the word very fast. Most publishers have their own websites through which they can share the fascicles of media owned by them with libraries. They can also provide access to catalogues using which automated orders might be placed.

ii) Circulation

It is easy to log if documents are available and share/issue available documents to users. Reservations can also be automated using digital data records like 'queues'. Electronic issuing can be performed by using BARCODE STRIPS pasted externally on the doc.

iii) Reference Inform^n Servies

Internet contains vast sources for secondary information related to all published works, which can be fetched on user request.

iv) Resource sharing

without the web, increasing cost of documents could not provide to all its increasing user base, but using the online ODAPs users can access materials remotely as well as digitally.

- E-journals can be automatically emailed to the users.

v) Organisation; Digitization of Catalogues saves

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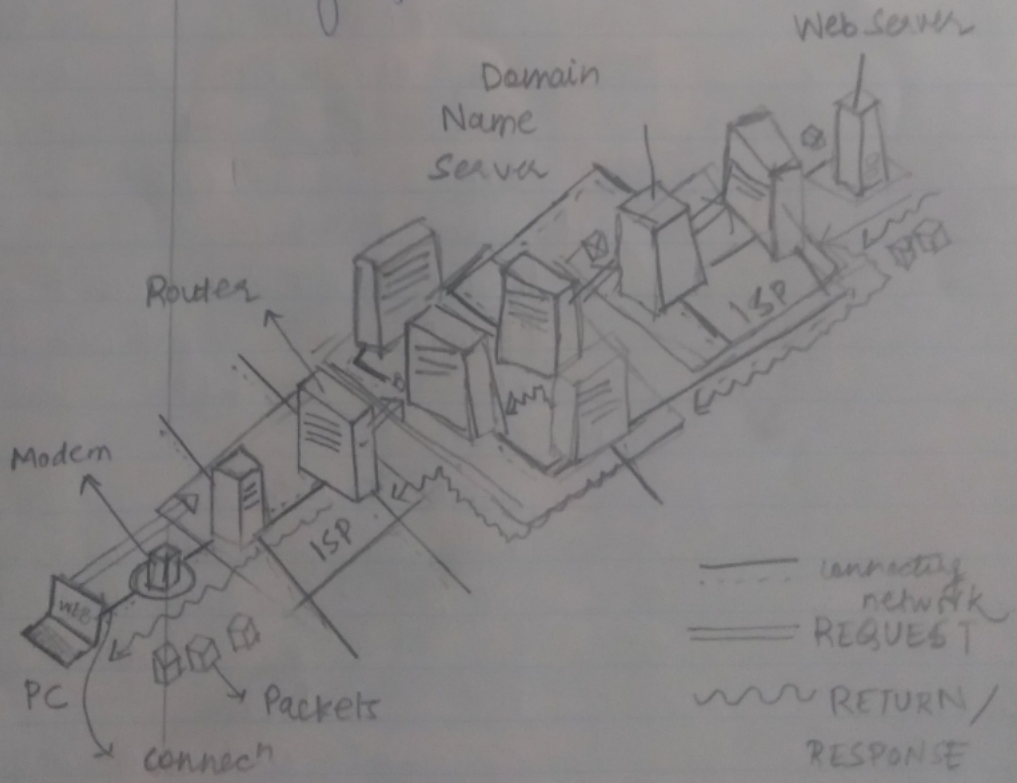
both time and energy required for searching and indexing. The card system required large space, but online catalogues provide a queriable interface to the catalogue & improves both management & user experience.

I.7) Working of the Internet



1. You open a website in your browser — When this is done, the computer sends an electronic request over to your internet connection to your ISP in the form of a stream.
2. The ISP routes the request to a server further up the chain on the internet, eventually to a Domain Name Server
3. The DNS looks for a match for the Domain Name requested, and if found it directs the request to the web servers IP address, else further up to a server with more addresses.
4. On reaching the web server the requested file is sent back as series of packets (parts of the response file with headers & footers)
5. Each packet travels back down to your computer and they might not take the same route. Each packet travels independently along the path of minimum resistance to your computer
6. On recieving the packets, the browser protocols arrange them to form & display the whole file.
7. Data is transfereced throughout based on TCP/IP rules.

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I 8) Web 2.0

- Participatory / Social Web, Tim O'Reily's fragmented Web
- Websites that emphasize on user-generated content, ease of use & participatory culture. Main focus is on interactive features. Unlike Web1.0's static design, websites are more dynamically generated.
- Allows for collaboration and promotes a virtual community
- Instead of merely reading a page, a user is invited to contribute to site contents by commenting on published articles or creating profiles
- Users can provide the data & exercise some control over what they share on a Web2.0 site.
- Allows users to collectively classify & find information via tagging.
- Rich user experience - Dynamic content responsive to user input eg - enlarging image by clicking
- Software as a service - Application Programming Interfaces.
- More robust Wikis due to larger user base
- Universal web access by providing interactive and easy to use interfaces.
- could be Blog / RSS based, or even Wiki based.

II. 1. SCANNER

→ Device that optically converts printed media (image / text) into digital forms (digital image).
→ Commonly used scanners = Flatbed scanners, where documents are scanned face down using a high intensity light source against a glass window.
→ Require power source as well as scanning software (eg - omnis can)
→ Captures page-wise image of document
→ Textual images may be resolved into text using optical character recognition utilities.

II. 2 Web Search

A query accross the world wide web's database. Performed using available search engines like Google, Yahoo Search, etc.
A user can enter a query (case insensitive) with logical operators into such an engine & receive a list of web-resources with matching content / meta tags.
Web searches are generally fuzzy searches of the query string on indexed web.

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II.3 Digital Literacy

An individual's ability to find, evaluate and clearly communicate information through typing / image sharing on various digital platforms

Requires both cognitive & technical skills.

Encompasses 5 types of literacies

i) Photo visual literacy
ii) Reproduction Literacy
iii) Branching Literacy
iv) Information Literacy
v) Socio-emotional literacy

II.4 Operating System

Type of system software that manages computer's hardware & software resources.

Provides common services for computer programs. Acts as a link between software and hardware. Controls & keeps track of the execution of all other programs present in the computer.

- 1) Manages Primary Memory Allocation
- 2) Processor Management - By Allocating / Deallocating RAM.
- 3) File Management
- 4) Security - Checks data flow & file access.

→ 5) Error detecting from dumps & traces
→ 6) Scheduling of processes based on algorithms

II. 5) Social Networking Sites
→ Online community of world-wide-web users
→ It is an online platform which can be used to build social networks/relationships with other people who share similar interests (personal/professional)
→ Such sites allow users to share media, opinions and ideas online, and to inform others about their online/offline activities. They allow 'remote' virtual conversations and gatherings that promote the bonds of a community
→ With covid-19 this has become the major way for most of us to maintain social contacts and perform activities together via virtual shared rooms (like video conferences or server based games, etc).
→ help in social navigation finding data shared by users who belong to the same category (same age / same interests, etc).

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BLII-014: ICT in Libraries

Assignment

Coverage: **Course Code: BLII-014**
Course: ICT in Libraries

Assignment Code: AST/TMA/Jan.2021-July 2021
Units: 1-7 **Total Marks: 50**

Part-1: Answer all questions in about 300 words. All questions carry equal marks

1. Describe the different types of computers. (5)
2. Explain systems software. (5)
3. Explain external storage devices in detail. (5)
4. Describe some of the major hardware components. (5)
5. Discuss how to set an internet connection. (5)
6. Describe the role of ICT in Housekeeping operations. (5)
7. Discuss the working of internet with the help of a diagram. (5)
8. What do you understand by web 2.0. Explain with suitable examples (5)

Part-11: Answer all questions in about 100 words. All questions carry equal marks

1. Scanner (2)
2. Web search (2)
3. Digital literacy (2)
4. Operating system (2)
5. Social networking sites (2)