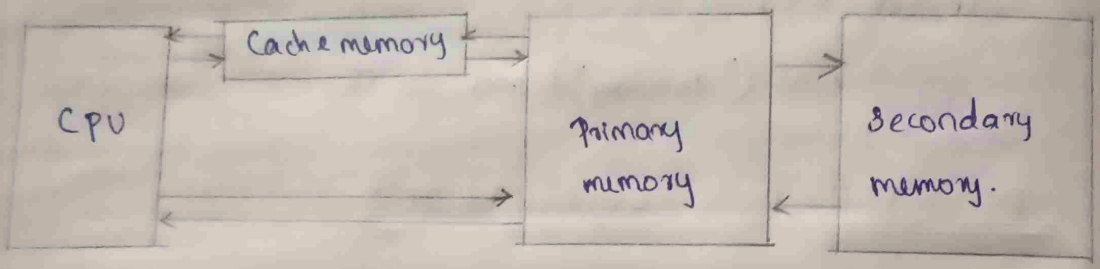
13. Standard power supply.

14. connecting cables and drivers media and required accessories.

15. 3 years comprehensive onsite warranty.

Cache memory.



Cache memory.

→ cache memory is a special very high-speed memory.

→ It is used to speed up and synchronizing with high-speed cpu.

→ cache memory is costlier than main memory or disk memory but economical than cpu registers.

Cache memory

→ cache memory is an extremely fast memory type that acts as a buffer b/w RAM and the CPU

→ It holds frequently requested data and instructions so that they are immediately available to the CPU when needed.

BOOTING

→ is the process of loading and initializing an operating system.

POWER ON COMPUTER

→ Reset to CPU (CPU is not processing)

CPU IS ACTIVATED

→ The moment CPU is powered on it needs instruction to execute.

Uses a non voluntile memory chip, ROM

→ This memory chip contains a program called BIOS (Basic input output system)

→ BIOS is the first program runs on a computer.

→ BIOS first builds inventory of devices known as POST (Power on self Test)

→ BIOS select storage device from where OS is to be loaded.

→ The BIOS has to be very small (< 1 MB) and is in machine code.

Operating System

→ Are large complex programs

→ They are stored variety of hardware using complex file systems (FAT 32, EXT4, HFS etc)

→ BIOS loads operating system's MBR (Master Boot Record)

→ - the first sector from a HDD/FDD/USB

→ - Loads 512 bytes from the MBR into memory.

→ BIOS Runs the OS Boot loader.

→ - executes first instruction loaded from MBR

→ - Typically a OS loader is present in the MBR which loades the actual system.

OS LOADER

→ Typically a OS loader is present in the MBR which loads the actual OS.

The OS loader may use two Stage loading.

→ stage 1 loads stage 2 loader

→ stage 2 loads the actual OS

→ Boot loader loads OS into memory. OS starts running.

Performs it's own initialization

→ Initializes memory

→ Initializes devices

Starts up a shell

→ Displays login prompt or GUI

→ GUI --- GRAPHICAL USER INTERFACE

→ FIRMWARE -- s/w embedded on a hardware

→ File system used in MS-Dos ... FAT32

→ LINUX -- EXT4 (extended files system 4)

→ MAC OS ... HFS (Hierarchical file system)

Introduction

1. The Internet or "Net" (network of networks) is the largest computer network in the world that connects billions of computer users).
2. The world Internet comes from combination blw "interconnection" and "Network".
3. Network is a collection of computers and devices connected via communication channels and transmission media allow to share resources (hardware, software, data, information).
4. Generally nobody own Internet.

Brief History (cont..)

→ ARPA - Advanced Research Project Agency.
→ 1969 January 2 - started an experimental computer network.
→ In 1982 the word Internet started.
→ 1991 : US government allowed business agencies to connected to internet.

Vinton Gray cerf

→ American internet pioneer and is recognised as one of "the fathers of the Internet"

WWW

→ The World wide web, commonly known as the web, is a system of interlinked hypertext / hypermedia documents accessed via the Internet.
→ Creator: Timm Berners-Lee, a British computer scientist, in 1989

Web page

→ A web page is a document or resource of information that is suitable for the world wide web and can be accessed through a web browser and displayed on a monitor or mobile device.

Web Browser

→ A software application for retrieving, presenting, and traversing information resources on the world wide web.

→ Internet explorer, mozilla firefox, chrome, Opera, Edge, Safari, Epic was released on august 29, 2013.

→ First web browser was developed in 1993, mosaic, by marc Andreesen, an American software Engineer.

→ microsoft ~~licso~~ licensed Mosaic to create Internet Explorer in 1995

Electronic Mail.

→ A written message that is sent and received over the internet

→ The message ca be formatted and enhanced with graphics and may also include other files as attachments,

→ Like ordinary mail, email have address,
E.g. aby @ gmail.com.

Electronic mail.

→ An e-mail address identifies an e-mail box to which e-mail message may be delivered.

→ most e-mail on the internet uses the simple mail Transfer protocol (SMTP)

→ A valid e-mail address is an address composed of two parts, a username and a domain name, in the following form username @ domainname . extension.

→ An example is aby @ gmail . com.

→ where aby is the username given for the e-mail address, gmail is the name of the company or entity that you are getting your e-mail address.

Advantages of internet

→ communication.

→ Research

→ Education

→ financial transactions

for updates.

Disadvantages of Internet

Theft of personal information.

→ spamming

→ malware Threats (malware a malicious software that is dangerous to the computer)

→ Social isolation

→ Obesity and

→ Depression.

CC and bcc in an e-mail.

1. CC and BCC are two ways you can include more people as recipients in an email.
2. CC is the abbreviation for "carbon copy"
3. If you've ever recived a CCed email, you've probably noticed that it will be addressed to you and a list of other people who have also been CCed.

bcc

→ Bcc stands for "blind carbon copy". It's called blind carbon copy because the other recipients won't be able to see that someone else has been sent a copy of the email.

when should you use Bcc?

1. A good example could be when you're having problems with an employee. when sending them an email, you can Bcc your supervisor or HR in the email so that they get a copy of your correspondence.
2. when you are sending an email to a list of family and friends that dont know each other, for example, Put their addresses in the Bcc field. The email will look as if it has been specifically send to them since there won't be any one listed as CCed. It also makes for a clean email, since there won't be a long list of reciprents.

ROM - READ ONLY MEMORY

- Primary memory
- is a class of storage medium used in computers and other electronic devices.
- Data stored in ROM cannot be modified, or
- can be modified only slowly or with difficulty

ROM

- ROM holds programs and data permanently even when computer is switched off.
- Data can be read the CPU in any order so ROM is also direct access
- The contents of ROM are fixed at the time of manufacture.
- Storage a program called the bootstrap loader that helps to start up the computer.
- Access time of b/w 10 and 50 nano seconds.

Type of ROM

1. Program read only memory (PROM)
2. Erasable Programmable Read only memory (EPROM)
3. Electrically Erasable Programmable Read only memory (EEEROM)

Program:

→ An algorithm expressed using a precise notation is called a program.

→ The precise notation is called a programming language.

→ The general terminology SOFTWARE is use to describe all Programs.

→ The terminology HARDWARE is used to describe the electronic circuits, I/O devices, memory etc. which are required to execute a software

→ H/W & S/W are also used to represent many other systems.

→ TV is h/w & entertainment pgm is s/w.

→ H/W is a one time expense where as a S/W is a continuous expense.

→ S/W production is time consuming and expensive whereas H/W can be built to specifications.

System software.

→ System software is software designed to provide a platform for other software.

→ A software used for system working, or make it alive.

→ OS, compiler, Assembler and interpreter are examples of system software.

Package software.

→ A software package is simply multiple applications or code modules that work together to meet various goals & objective

→ MS office is a packaged software.

→ G-SUITE includes Gmail, Docs, Drive, calender, Meet.

Application Software.

→ Programs written for specific applications are called application software.

→ Eg:- Railway ticket reservation systems.

→ LibreOffice writer, Libre office calc etc are applications.

→ internet browsers like firefox, safari and chrome.

→ Skype.

System Software.

→ Three types of system software.

i) Operating system

ii) Programming languages and their translators.

iii) utility Programs.

Algorithm to print the day of week.

If (d = = 1)

Print "Sunday" and so on

1. Start
2. input d
3. If (d = = 1)

Print "sunday"

else if (d = = 2)

Print "monday"

else if (d = = 3)

Print "Tuesday"

else if (d = = 4)

Print "Wednesday"

else if (d = = 5)

Print "Thursday"

else if (d = = 6)

Print "friday"

else if (d = = 7)

Print "saturday"

else {

Print "invalid code"

4. stop

Algorithm for Rainbow colours.

1. Start
2. input colour code cc
3. If (cc = = 1)

Print "violet"

else if (cc = = 2)

```
Print ("indigo")
else if (cc==3)
    Print ("blue")
    else if (cc==4)
        Print ("green")
        else if (cc==5)
            Print ("yellow")
            else if (cc==6)
                Print ("orange")
                else if (cc==7)
                    Print ("Red")
                else
                    Print ("invalid")
```

4. Stop

- Algorithm to calculate the electricity bill

An electric power distribution company charges, it's domestic consumers as follows.

Units	Rate.
0 - 200	Rs 0.50 Per unit
201 - 400	100 + 0.65 * excess units consumed
401 - 600	230 + 0.80 * excess units consumed
> 601	390 + 1.0 * excess units consumed.

→ 1. Start
2. Input units consumed uc
3. If (uc < 201)
   rate = 0.50 * uc
   else if (uc > 200) and (uc < 401)

```
rate = 100 + 0.65 * (uc - 200)
else if (uc > 400) and (uc < 601)
    rate = 230 + 0.80 * (uc - 400)
    else
        rate = 390 + 1.0 * (uc - 600)
4. print ("Rate = ", rate)
5. Stop
```

For loop

In computer science a for loop is a control statement for specifying iteration which allows code to executed repeatedly

Syntax is:

```
for i = 1 to n step size.
{
  body of the loop
}
next statement.
```

for eg:-

```
for (i=1 to 5 step 1
    {
    print (i)
    }
```

o/p:- 1 2 3 4

```
for i=1 to 10 step 2
    {
    print (i)
    }
```

o/p:- 1 3 5 7 9

```
for i = 5 to 1 step -1
    {
    print (i)
    }
```

o/p 5 4 3 2

first n natural numbers

1. start
2. input value of n
3. for i=1 to n+1 step 1

```
{
print (i)
}
```

4. stop

first n natural numbers and their squares.

1. start
2. input n
3. for i=1 to n+1 step 1

```
print
print (i, i*i)
```

4. stop

first n natural numbers and their cubes.

1. start
2. input n
3. S = 0
4. for i = 1 to n+1 step 1

```
S = S + i
```

5. print S
6. stop

first n natural numbers and their quadrates

1. Start
2. Input n
3. for i = 1 to n+1 step 1
   Print (i, i * * 4)
4. stop

first N odd numbers.

1. Start
2. input N
3. for i = 1 to n+1 step 2
   print (i)
4. Print "over"
5. stop

first n even numbers

1. Start
2. input n
3. for i = 2 to n+1 step 2
   Print (i)
4. Print "done"
5. Stop

Sum of any n numbers.

1. Start
2. input n
3. sum = 0
4. for i = 1 to n
   {
   input = "any number", m
   sum = sum + m
   }