Computers and the Internet

Intermediate 1

Revision

Computer Hardware

Desktop computer

- Requires
  - Monitor
  - Keyboard
  - Mouse

Laptop Computer

- Is portable, battery operated
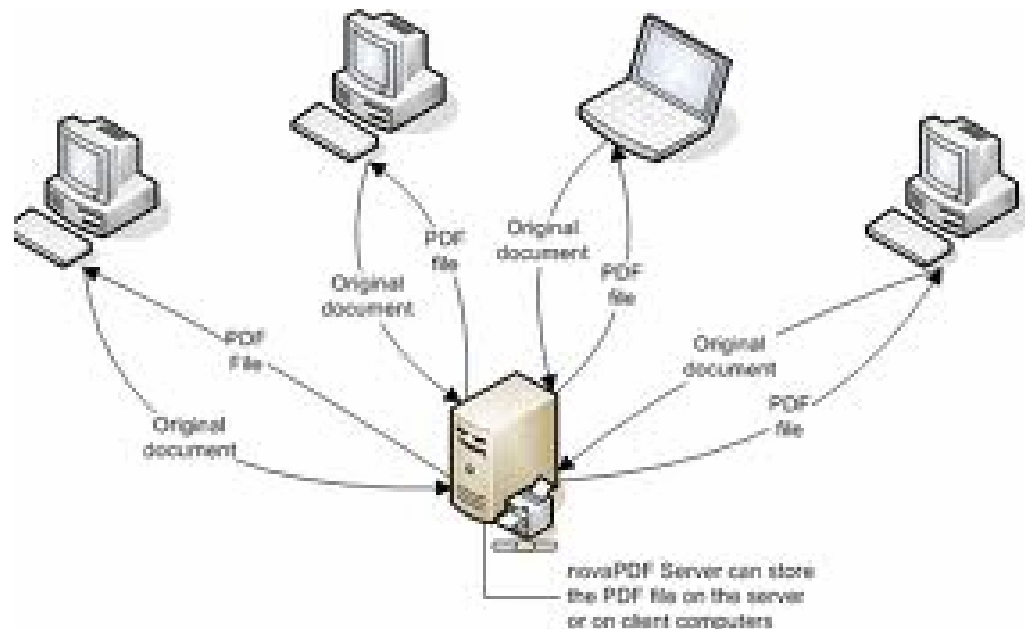- Built in LCD screen
- Pointing device (touchpad)

Palmtop

- Portable, hand held, battery powered
- Touch screen
- Limited memory
- Limited processing power

Network

- Two or more computers linked together

- Server – controls the running of the network

Input Devices

- Mouse
- Keyboard
- Scanner
- digital camera
- Microphone
- digital video camera

Output Devices

- Printer (laser and inkjet)
- Monitor (including CRT and flat screen)
- Speakers

Backing Storage

- CD Drives (CD-ROM, CD-R, CD-RW)
- Hard disk drive
- Floppy disk drive
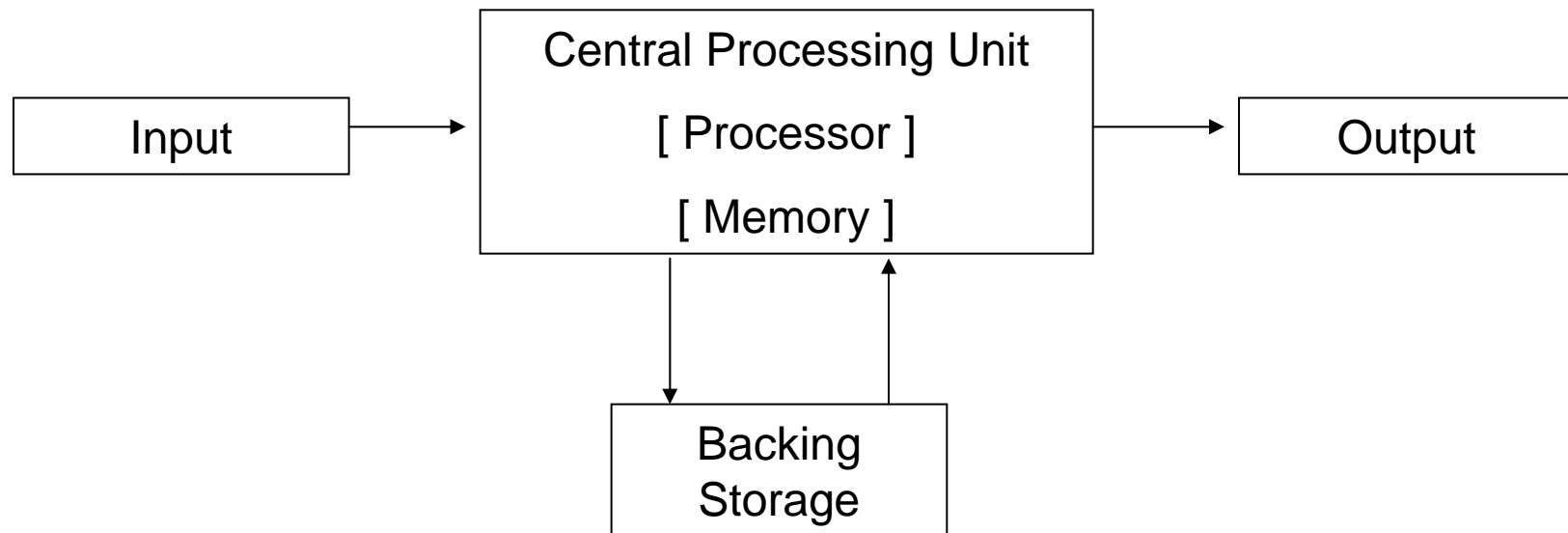- DVD devices
- USB flash drives

Central Processing Unit

- Processor
- Memory


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                      ┌─────────────────────────┐
                      │ Central Processing Unit  │
┌──────────┐          │                          │          ┌──────────┐
│  Input   │ ───────▶ │      [ Processor ]       │ ───────▶ │  Output  │
└──────────┘          │                          │          └──────────┘
                      │       [ Memory ]         │
                      └──────────┬──────▲────────┘
                                 │      │
                                 ▼      │
                            ┌──────────────┐
                            │   Backing    │
                            │   Storage    │
                            └──────────────┘
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C P U

- Processor
  - Speed measured in GHz
  - Faster is better

- Memory
  - Size measured in MB or GB
  - More memory is better

Sizes

- Bit   (1 or 0)
- Byte   = 8 bits
- Kilobytes   = 1024 bytes
- Megabytes   = 1024 Kb
- Gigabytes   = 1024 Mb
- Terabytes   = 1024 Gb

Memory

- **ROM**

- Read Only Memory
- Cannot be changed
- Holds computer start up information
- Kept when power off

- **RAM**

- Random Access Memory
- Holds users programs and data so changes
- Lost when power off

Other Devices

- Modem – connect to phone line

- Network card – connect to network

- Sound card – to manage sound

- Graphics card – display images on screen

Computer Software

Software

- ## Program file
  - Instructions and commands to tell the processor what to do e.g. MS Word

- ## Data file
  - Information created or needed by the program e.g. your essay

Software

- ## System software
  - Programs which manage the computer e.g. MacOSX, Windows

- ## Application software
  - Word processing
  - Database
  - Spreadsheet
  - Graphics

Selection of Software

- Software can only run if
  - Compatible with operating system
  - Sufficient hard disk capacity
  - Sufficient RAM
  - Fast enough processor speed

Operating System

- Used to
  - create folders
  - organise saved work in folders
  - rename files
  - move/delete files

The Internet

Internet Access

- Computer System – with sufficiently powerful processor and enough RAM
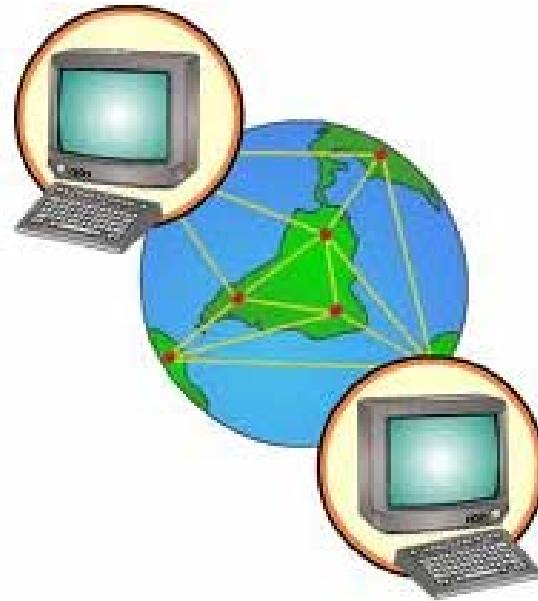
- Modem

- Telephone line / cable / satellite

Internet Access

- **Dial up**
  - Uses phone line
  - Cannot use the phone for calls at the same time
  - Slow speed

- **Broadband**
  - Faster
  - Can use the phone at the same time
  - May be via phone line or via cable or satellite

Internet Costs

- ## Setup costs
  - Computer
  - Software

- ## Running costs
  - ISP Fees
  - Call charges (dial up)
  - Help lines

Communication Software

- Browser
  - To view web pages
  - To view email online (gmail, hotmail)

- E-mail client software
  - To read and write e-mail
  - E.g. Eudora, Thunderbird, Outlook

Security Issues

- Hacking
- Viruses

- Protection
  - User IDs and secret passwords
  - Web filtering – block unwanted websites
  - Anti Virus
  - Firewall to block hackers
  - Secure sites for e-commerce

Software Development Process

- **Analysis**: clarifying what is required
- **Design**: identifying the layout and elements
- **Implementation**: creating the pages
- **Testing**: checking the pages and links look and behave correctly
- **Documentation**: user and technical guide
- **Evaluation**: does it fulfil the specification; could it be improved