FUNDAMENTALS OF s

* INFORMATION:

TOOLS OF DATA PROCESSING

* COMPUTER: A general purpose, programmable device that is used for the production and procession of information
* Capable of calculating and storing results

HOW COMPUTERS PROCESS INFORMATION

* Computer accepts inputs(data)
* The input is translated into binary numbers and “processed”
* The process produces output (information)
* This sequence can repeat endlessly: outputs can be inputs!

COMPONENTS OF A COMPUTER

* Computer systems are made up of
* Hardware – the physical parts
* Software – the instructions or programs that control the hardware
* The Human Being – the brains behind the whole system!

TYPES OF COMPUTERS

* Mainframe computers (programming language is Kobolt)
* Minicomputers
* PCs
* Laptops
* Network computer/servers ( uses two types of terminals

SYSTEM UNIT

The central component of the system houses

* The Processor : corresponds to the CPU
* Memory: RAM/ROM
* Storage: Hard Disk, Removeable storage

THE PROCESSOR

* Types of processors include Intel Pentium Series, Celerion, AMD Athlon
* Chip at the heart of the computer – does the calculation
* Spead is very important- measured in Megahertz (MHz) the faster the processor the more calculations performed per second.

MEMORY

* A computer must be able to sort its calculations and programs
* Two types of memory: “volatile and permanent
* Measured in bytes
* One byte = 8 bits

RANDOM ACCESS MEMORY (RAM)

* Used by the computer as the working area
* Holds the working program, the data being processed and the interim results
* Volatile – contents are erased if power is lost
* Can be accesd randomly
* Faster than permanent memory

STORAGE – HARD DISK

* Permanent Memory – records and stores all programs and data/ information magnetically
* Larger than Ram – average 256, 500, 1T
* Slower – involves mechanical movement (read/write)

OTHER STORAGES

* Floppy disk
* CD/DVD ROM
* Zip Drive
* Magnetic Tape

INPUT DEVICES

* Keybord, Mouse, trackballs, light pens, touch screens

OUPUT DEVICES

* Monitors: VDU
* Printers: laser, inkjet, impact

SOFTWARE

Generic name of all programs

* Made up of code interpreted by the hardware
* Written in programming langrages – JAVA, PYTHON, C++, PERL
* Types of software
* - System
* -Application

SYSTEM SOFTWARE

* Concerned with the computer itself: devices files and storage amangement, error correction
* Main piece of SS: Operating System (OS)
* OS: the driving program of the computer
* Communicates between all programs and the hardware
* Controls timing and sequence of events
* Manages data to ensure security and integrity
* Examples: Windows, Mac OS, Unix/Linux(most servers runs in linux)

APPLICATION SOFTWARE

* Concerned with the world outside the computer
* Gives the computer its general purpose
* Used for things you want the computer to do
* Examples: word, excel, chrome, zoom

HOW SOFTWARE IS MADE?

* Involves a cycle of research , analysis, development and testing
* System Analyst- study the business processes and design the software
* Programmers – develops the software

PROBLEM WITH SOFTWARE

* Software is complex
* Difficult to test comprehensively
* Can have bugs: these can be trivial or major

THE GRAPHICAL USER INTERFACE (GUI)