JSS 1

COMPUTER SCIENCE

FIRST TERM

TABLE OF CONTENT

Week 1

Topic: Technology OF Different Information Age

(Age early counting devices)

The counting of figures and other simple arithmetic operation are of the greatest challenges man has ever had before the invention of the computer. The counting move is done using different parts or the body such as finger and toes. Objects like stones, pebbles, sticks, and drawing of lines of marks on the surface were also used for counting.

Technology of information ages can be grouped into four stages and these are:

1. **Stone Age (primitive period)**: stones were used for making tools and weapon of the primate period. In this era, stones were stricken together to make fire. Clay was also used for making pot, jug, and pottery etc.
2. **Iron age (12A century BC)**: as human, life gradual attention begins to shift on iron. The iron such as steel and bronze were used for making tools and weapons for war e.g. hoe, knife, and cutlass was made from iron and was meant for human usage.
3. **Industrial age (late 18th or early 19 century)**: industrial age is known as the industrial revolution age. There were rapid revolution changes in agriculture, transportation, manufacturing and mining sector across the globe in this era. In this period, machine was produced and used to perform tedious and manual production of goods. In man's history, this period was a turning point because road, ships, railways, electricity etc. were developed in this era.
4. **Electronic age (late 19th century)**: This is the invention of electronic machine over the stage in this era of information age. It a period during which the concept of electromagnetism, electrostatic, electric current and above all silicon technology were fully harnessed together for human and social advantages. It is the period that computer was developed and it is used interchangeably with the present information age.

Assessment

1. Technology of information ages can be grouped into ____ stages
2. List the stages of technology information ages
3. At what stage was electronic machine invented

Answer

1. 4 stages
2.

- stone age
- iron age
- industrial age
- electronic age

3. Electronic age

Week 2

Topic: History Of Computer

Before the invention of computer, counting of figures was done with finger, and also the use of toe. Then later on man shifted to the use of stones. The stones often became problem sometimes, then another means were cropped up until mechanic and electronic devices were discovered.

Development of computer mechanical devices are these devices that porter their task without making use of electricity. Examples are

1. **Abacus:** Abacus was developed in china. It is a wooden frame with string on which colorful beads are stung on.
2. **Slide Rule:** Slide rule is used for performing calculation which involves multiplication and division. The use of slide rule is only accurate to 3 or 4 of decimal place. It is also used for operation that involves raising number to a given power 2^3

Electronic Devices

These are devices that used low voltage to power, supply and also to perform their task. Such as

1. **Napier Logarithm** (Napier Bones): in the 1617, John Napier (a mathematician) invented a device called Napier bones. He used it to simplify lengthy calculation by first reducing them to addition and also simplifies them.
2. **Pascal Line:** in 1642 blasé Pascal invented the first true adding machine. He invented it to reduce the numerical labour involved in his father work. This devices is basically use for arithmetic operation such as adding and subtraction.
3. **Charles Babbage Analytic Machine:** in 1832, Sir Charles Babbage built a machine call DIFFERENCE ENGINE. He later designs another machine called ANALYTIC MACHINE IN 1833. He invented this machine (analytical machine) for more complex calculation bur he died and could not complete the task. His friend ADA LOVE LAC E showed how the machine could be used to do some particular calculation. It is often thought that sir Charles Babbage is the inventor of the computer, while ADA LOVE LACE is the first programmer. This machine has four parts.

- A mill for calculating
- A store for holding instructors, immediate and final results
- An operator for carrying out instructions

- A device for reading and writing date on punch card.

Assessment

1. List 2 examples of a computer mechanical device
2. Define electronic device
3. Napier Logarithm is a mechanical device, True/False
4. List 2 electronic devices you know
5. The Charles Analytic Machine has ___ parts

Answers

1. Abacus and Slide Rule
2. Electronic device are device that use low voltage to power, supply and also to perform their task.
3. false
4. Pascal line and Charles Babbage Analytic Machine
5. 4 parts

Week 3

Topic: Generation of Computer

There are five generation of computer which are:

1. **First Generation:** The first generations of computer were developed between 1939-1945. The major component of this generation of computer was vacuum tubes. These computers were very heavy in size, they generate lots of heats and noise, and they are very slow in speed less reliable and efficient.
2. **Second Generation of Computer:** The second generations of computers were developed between 1955-1964. The major component of this computer was transistors. They were not as big as the first generation of computer. They generate less energy and noise, they work faster, and they are more reliable and more efficient.
3. **Third Generation Of Computer:** The third generation of computer was developed between 1964-1971. The major component of this computer was integrated circuits. These computers are smaller in size and they generate less energy and noise. They are relatively fast in speed and are relatively more reliable and more efficient.
4. **Fourth Generation Of Computer:** The fourth generation of computer were developed between 1971-1780. The major component of this computer were large scale integrated circuits (L.S.I.C) they are smaller in size and work very fast. They are highly reliable and generate lesser heat.
5. **Fifth Generation Of Computer:** The fifth generations of computers were developed between 1980- till date. The major component this computer is Ultra-large-scale integrated circuit Microchip. These computers can perform many functions such as ass diagnosing diseases, locating mineral deposits etc. This generation of computer exhibits a kind of artificial intelligence.

Assessment

1. How many generations of computer are there
2. The first generation of computer was developed in what year
3. The major component of the Fifth Generation Computer is _____
4. The major component of the Fourth Generation Computer is _____

Answer

1. 5
2. 1939-1945

3. Ultra-large-scale integrated circuit Microchip
4. large scale integrated circuits (L.S.I.C)

Week 4

Topic: Basic Computer Concept

Definition of a Computer

A computer can be described as a machine or a device that accept data under the control of a stored program in a prescribed form, process data and supply the result as information in a specific form. It performs three major functions such as:

1. It accepts data
2. It process data
3. It supply information (output)

Parts of Computer

These are parts of a computer:

Monitor: The monitor is an output device. It displays the information on the screen for the user to see what he/she is doing. The information is displayed on the screen is called **Soft copy**. The monitor comes in different sizes such 12 inches,14 inches, 21 inches e.t.c

Keyboard: The Keyboard is an input device. It is used to send data into the computer system for processing. The keyboard is used to communicate with the computer. It is used to enter data into the computer in form of digits, alphabets, symbols. The keyboard has five different sections. Such as

- function keys
- alphanumerical keys
- control keys
- numerical keys
- speed keys

System Unit: System unit is a metallic box that contains the major components of the computer. It contains the heart of the computer system called the central processing unit (CPU). The central processing unit is where all the processing function takes place on the computer system.

Mouse: The Mouse is a pointing device that moves an object on the screen of the monitor. The mouse also can be used to give simple C command to the computer. The mouse work in conjunction with the keyboard.

Speaker: Speaker is an output the project out the sound of what we do with the computer.

Printer: The printer is an output device that transforms out the soft copy works we have on the computer on a printed paper.

Component of the System Unit

1. **Internal power supply:** The system unit draws power from the alternate circuit/current (AC) through a power protecting device. The power is supplied directly to an internal power supply which converts the alternate into direct/current (DC) of 5 and 12 volts. Internal power supply (SMP) it provides cable connectors to supply the required voltage to the other internal component like the floppy disk drive, hard disk drive, the boot and external device like a keyboard. The off/on of the system unit is part of switch mode power supply (SMP)
2. **Exhaust Fan:** exhaust fan is a small fan attached to the switch mode power supply to cool it. The fan rotates as long as the computer is on
3. **Speaker**: speaker is an output the project out the sound of what we do with the computer.
4. **Mother Board:** mother board is a large board that contains numbers of tiny electronic circuit and other components. It is popularly referred to as BORAD its components are;

- **Micro Processor:** The micro processor, processes data and produces out a result. The means it accepts data, perform arithmetic and logic operation and then send out the result. It responds to request for the peripheral devices e.g. printer signal can indicate when it has paper run out of paper. micro processor consists of a control unit, arithmetic, and logic unit and register, during the arithmetic and logic unit operation, the micro processor chip hold it intermediate resulting register.
- **The Register**: The registers are part of microprocessor chip meant for storage and are not accessible to the programmer.

Assessment

1. ……. can be described as a machine or a device that accept data under the control of a stored program in a prescribed form, process data and supply the result as information in a specific form.
2. Mention 4 components of the system unit
3. Mention 3 parts of a Computer

4. What are the major functions of a computer

Answers

1. Computer

2. (i) Internal Power Supply (ii) Exhaust Fan (iii) Speaker (iv) Mother Board

3. (i) Monitor (ii) Keyboard (iii) Mouse

4. (i) It accepts data (ii) It process data (iii) It supply information (output)

Week 5

Topic: Classification of Means of Transmitting Information

- There are various ways of transmitting information and these can be classified into two which are as follows.

Electronic Means

- Print out copies
- Telephone
- Radio
- Television
- Internet
- Telex
- Satellite
- S.M

Non-Electronic Means

- Oral
- Beaten drums
- Town crier
- Whistling
- Drawing diagrams
- Making representation

Mode of Receiving Information

Information can be received through the following means

1. **Audio**: Audio information can be received in a sound form, e.g music. Broadcasting, voice recording, audio tape.

2. **Visual**: Visual information can be received in form of text, picture, and chart. E.g newspaper, magazines, journals, billboards.
3. **Audio Visual Form**: Audio visual information can be received in both sound and picture. E.g. movies, music videos, etc.

Assessment

1. Name three electronic means of transmitting information

2. List four non-electronic means of transmitting information

3. What are the modes of receiving information

Answers

1. (i) Internet (ii) Telephone (iii) Radio

2. (i) Town crier (ii) Whistling (iii) Making diagrams (iv) Making representation

3. (i) Audio (ii) Visual (iii) Audio Visual Form

Week 6

Topic: Data and Information

Introduction

"Data" comes from a singular Latin word, *datum*, which originally meant "something given." Its early usage dates back to the 1600s. Over time "data" has become the plural of *datum*.

"Information" is an older word that dates back to the 1300s and has Old French and Middle English origins. It has always referred to "the act of informing," usually in regard to education, instruction, or other knowledge communication.

Data

Data can be defined as a raw fact, data is a raw material which information is produced. *Data* is a set of values of qualitative or quantitative variables. Data is information in raw or unorganized form (such as alphabets, numbers, or symbols) that refer to, or represent, conditions, ideas, or objects. Data is limitless and present everywhere in the universe. In computing, data is information that has been translated into a form that is more convenient to move or process. Relative to today's computers and transmission media, data is information converted into binary digital form.

Data can be defined as a representation of facts, concepts or instructions in a formalized manner which should be suitable for communication, interpretation, or processing by human or electronic machine. Data is represented with the help of characters like alphabets (A-Z,a-z), digits (0-9) or special characters(+,-,/,*,<,>,= etc.).

Examples of Data

- **Student Data on Admission Forms:** When students get admission in a college. They fill admission form. This form contains raw facts (data of student) like name, father's name, address of student etc.
- **Survey Data:** Different companies collect data by survey to know the opinion of people about their product.
- **Data of Citizens:** During census, raw facts of all citizens is collected.
- **Students Examination Data:** In examination data about obtained marks of different subjects for all students is collected.

Information

Information is a data which has been processed to a meaningful and useful to the person who received it. Data as a general concept refers to the fact that some existing information or

knowledge is represented *or coded* in some form suitable for better usage or processing. **Information** is stimuli that has meaning in some context for its receiver. When **information** is entered into and stored in a **computer**, it is generally referred to as data. After processing (such as formatting and printing), output data can again be perceived as **information**. *Information* is the summarization of data. Technically, data are raw facts and figures that are processed into *information*, such as summaries and totals.

Information is organised or classified data which has some meaningful values for the receiver.

Information is the processed data on which decisions and actions are based.

For the decision to be meaningful, the processed data must qualify for the following characteristics:

- **Timely –** Information should be available when required.
- **Accuracy –** Information should be accurate.
- **Completeness –** Information should be complete.

Examples Of Information

- **Student Address Labels:** Stored data of students can be used to print address labels of students.
- **Result Cards of Individual Students:** In examination system collected data (obtained marks in each subject) is processed to get total obtained marks of a student. Total obtained marks are Information. It is also used to prepare result card of a student.
- **Census Report:** Census data is used to get report/information about total population of a country and literacy rate etc.
- **Survey Reports and Results:** Survey data is summarized into reports/information to present to management of the company.

Sources Of Data

Data can be sourced from the following:

1. Student performance in both text and exam
2. Patient files at the hospital
3. Company's database about each employees
4. Printed Books
5. Internet

6. Electronic Sources etc.

Examples of Data and Information

Name : Akingade Job

Class: S S 2A

State of Origin: Ondo state

Sex: Male

Date of birth: 16TH September 1999

How data is processed into information

- Data could be listen to, store, deleted, removed or merged together
- Data processing involves some process which includes, calculating, sorting, classifying, and summarizing etc.
- Data processing simply means how data is being converted into meaning information.

Quality of Good Information

1. **Accuracy:** information must be accurate and should not misled the user in making the right decision
2. **Meaningful:** A good information must be meaningful i.e must e able to be interpreted
3. **Timely:** A good information must be communicated when it is needed
4. **Comprehensive:** A good information must be expressed in a way that can understand it
5. **Suitable**: A good information must be good enough to serve it purpose
6. **Relevant:** A good information must not ease more that it worth.

Differences between Data and Information

- Data is the input language for a computer and information is the output language for human.
- Data is unprocessed facts or mere figures but information is processed data which has been made sense of.
- Data does not depend on information but information depends on data and without it, information cannot be processed.

- Data is not specific but information is specific enough to generate meaning.
- Data is the raw material that is collected but information is a detailed meaning generated from the data.

Assessment

1. Data can be defined as___
2. Differentiate between Data and information
3. A meaningful decision must contain the following characteristics except

(a) Timely

(b)Decentralization

(c) Complete

(d) Accurate

4. Data can be sourced from the internet True/False

5. Timeliness is a quality of a good information True/False

Answer

1. Data can be defined as a raw fact, data is a raw material which information is produced.
2. Data is a raw fact while information is a processed information
3. b
4. True
5. True

Week 7

Topic: Information Transmission

Information transmission can be referred to as the various ways or more of spreading or passing information from one place to another.

Ways of transmitting Information

1. **Ancient Method:** The various ways of transmitting information in the ancient time are,

- oral
- beaten drums
- town crier
- whistling
- drawing diagrams
- making representation

2. **Modern Method:** Information was able to be passed easily with concept of modernized form within a short period of time. Examples are

- Print out copies
- Telephone
- Radio
- television
- internet
- telex
- satellite
- S.M

Classification or means of transmitting information

There are various ways of transmitting information and these can be classified into two which are as follows.

Electronic Means

- Print out copies
- Telephone
- Radio
- television
- internet
- telex
- satellite
- S.M

Non Electronic Means

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- town crier
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Mode of Receiving Information

Information can be received through the following means

1. **Audio**: Audio information can be received in a sound form, e.g. music. Broadcasting, voice recording, audio tape.
2. **Visual**: Visual information can be received in form of text, picture, and chart. e.g. newspaper, magazines, journals, billboards.
3. **Audio Visual Form**: Audio visual information can be received in both sound and picture. e.g. movies, music videos, etc.

Assessment

1. ___ is a way of spreading or passing information from one place to another

2. These are the Modern Methods of passing information except

(a) oral

(b) Radio

(c) Television

(d) Telephone

3. Information can be received through the following except

(a) audio

(b) Audio visual

(c) visual

(d) Whistling

Answer

1. Information Transmission
2. a
3. d

Week 8

Topic: Information Evolution And Communication

1. **Invention Of Printing:** Printing and paper were invented in china in 1940, a German Johannes Gutenberg developed moveable printer machine which was used to replace hand printed text.
2. **Invention of Television:** An American photo Taylor Tran worth invented Cathode ray tube (CRT) used in picture production. The first television was invented by Williams Crooks in 1878 (Black and white)
3. **Invention Of Radio:** James Clerk Maxwell and Heinrich Harte develop theory of dectro magnetic wave in 1873
4. **Invention Of Computer:** computer took several stages before it come into existence. From the early counting devices such as finger, stick, stones, pebbles, to mechanical counting devices such as Abacus, slide rule, Napier bones, pascal calculating machine e.t.c

Information Communication Technology (I.C.T)

Information communication technology is often used as an extended synonyms for information technology (IT) but it is a more specific term that stresses the role of unified communication and integrated Tele communication (Telephone line and wireless signals).

Computer as well as necessary enterprises software, middleware, storage and audio-visual system, which enable user to access, store, transmit and manipulate information

Uses of Information Communication Technology

1. **Communication**: Communication has been made so easy a way that people in a global village can communicate with one another across the world, e.g. chat rooms, (yahoo mess anger, face book, twitter, etc.
2. **Timing and control**: People can communicate with other in different countries using technologies such as instant messaging voice over IP and video conferencing.
3. **Information Processing and Management**: Information and communication technology allows the processing and management of data through the use of computer accurate and reliable result.

Information Communication Technology and the Society

In past few decades, information communication technology had great impact on the society. Such as

1. Education
2. Health sector
3. Banking sector
4. Business sector etc.

Assessment

1. Who invented the television and what year?
2. State two uses of Information communication technology
3. Name three parts of the society information communication technology has impacted

Answer

1. Williams Crooks in 1878
2. **(i) Communication**: Communication has been made so easy a way that people in a global village can communicate with one another across the world. (ii)**Information Processing and Management**: Information and communication technology allows the processing and management of data through the use of computer accurate and reliable result.
3. (i) Education (ii) Health (iii) Banking

Week 9 & 10

Topic: ICT Application in Everyday Life

Information Communication Technology (I.C.T)

Information communication technology is often used as an extended synonym for information technology (IT) but it is a more specific term that stresses the role of unified communication and integrated Telecommunication (Telephone line and wireless signals).

Computer as well as necessary enterprises software, middleware, storage and audio-visual system, which enable a user to access, store, transmit and manipulate information

ICT is beneficial to our everyday lives as the world is fast becoming a global city.

Health and medical sciences, education, communication, entrepreneurship etc. but our main focus are on Education.

ICT In Education

Educational technology is the effective use of technological tools in learning. As a concept, it concerns an array of tools, such as media, machines and networking hardware, as well as considering underlying theoretical perspectives for their effective application.

Educational technology is not restricted to high technology. Nonetheless, electronic educational technology, also called **e-learning**, has become an important part of society today, comprising an extensive array of digitization approaches, components, and delivery methods.

Benefits To Teachers

- ICT facilitates the sharing of resources, expertise, and advice
- Greater flexibility in when and where tasks are carried out
- Gains in ICT literacy skills, confidence, and enthusiasm.
- Easier planning and preparation of lessons and designing materials
- Access to an up-to-date pupil and school data, anytime, anywhere.
- Enhancement of professional image projected to colleagues.
- Students are generally more ‘on task’ and express more positive feelings when they use computers than when they are given other tasks to do.
- Computer use during lessons motivates students to continue learning outside school hours.

Benefits To Students

- Higher quality lessons through greater collaboration between teachers in planning and preparation resources.
- More focused teaching, tailored to students' strengths and weaknesses, through better analysis of attainment data
- Improved pastoral care and behaviour management through better tracking of students
- Gains in understanding and analytical skills, including improvements in reading
- Comprehension.
- Development of writing skills (including spelling, grammar, punctuation, editing and re-drafting), also fluency, originality, and elaboration.
- Encouragement of independent and active learning, and self-responsibility for learning.
- Development of higher-level learning styles.
- Students who used educational technology in school felt more successful in school, were more motivated to learn and have increased self-confidence and self-esteem
- Students found learning in a technology-enhanced setting are more vast than students in a traditional classroom.
- Broadband technology supports the reliable and uninterrupted downloading of web-hosted educational multimedia resources
- Opportunities to address their work to an external audience
- Opportunities to collaborate on assignments with people outside or inside the school

Benefits To Parents

- Easier communication with teachers
- Higher quality student reports – more legible, more detailed, better presented
- Greater access to more accurate attendance and attainment information
- Increased involvement in education for parents and, in some cases, improved self-esteem
- Increased knowledge of children's learning and capabilities, owing to an increase in learning activity being situated in the home
- Parents are more likely to be engaged in the school community

- You will see that ICT can have a positive impact across a very wide range of aspects of school life.

Uses of Information Communication Technology

1. **Communication**: Communication has been made so easy a way that people in a global village can communicate with one another across the world, e.g. chat rooms, (yahoo mess anger, Facebook, twitter, etc.)
2. **Timing and control**: People can communicate with others in different countries using technologies such as instant messaging voice over IP and video conferencing.
3. **Information Processing and Management**: Information and communication technology allows the processing and management of data through the use of computer accurate and reliable result.

Information Communication Technology and the Society

In the past few decades, information communication technology had a great impact on society. Such as

1. Education
2. Health sector
3. Banking sector
4. Business sector e.t.c

Assessment

1. What is Educational technology
2. What is the usefulness of ICT to the society?
3. State four benefits of ICT to students
4. State four benefits fo ICT to teachers

Answer

1. Educational technology is the effective use of technological tools in learning.
2. (i) Communication: Communication has been made so easy a way that people in a global village can communicate with one another across the world, e.g chat rooms, (yahoo mess anger, facebook, twitter, e.t.c (ii) Timing and control: People can communicate with others in different countries using technologies such as instant messaging voice over IP and video conferencing (iii) Information Processing and

Management: Information and communication technology allows the processing and management of data through the use of computer accurate and reliable result.

3. (i) Students who used educational technology in school felt more successful in school, were more motivated to learn and have increased self-confidence and self-esteem (ii) Students found learning in a technology-enhanced setting are more vast than students in a traditional classroom. (iii) Broadband technology supports the reliable and uninterrupted downloading of web-hosted educational multimedia resources (iv) Opportunities to address their work to an external audience

4. (i) ICT facilitates the sharing of resources, expertise, and advice (ii) Greater flexibility in when and where tasks are carried out (iii) Gains in ICT literacy skills, confidence, and enthusiasm. (iv)Easier planning and preparation of lessons and designing materials

JSS 1

COMPUTER SCIENCE

SECOND TERM

TABLE OF CONTENT

Week 1

Topic: The Monitor

The monitor is the part of a computer that helps to output or bring out information from the computer system. It is an output device that displays what the user of a computer is typing through the keyboard. The monitor displays the computer's user interface and open programs, allowing the user to interact with the computer, typically using the keyboard and mouse.

The output produce by the monitor is known as a soft copy because it can only be read by user on the screen.

Types of Monitors

There are two (2) types of monitor

1. Monochrome Monitor: Monochrome monitor is the types that displays information and images in only one colour. It is like a black and white television.
2. Colour Monitor: Colour monitor is the types that displays information and images in colours. This type of monitor is the one commonly used in today's computer world.

Form of Monitor

The common forms of monitors are

1. **The Cathode Ray Tube (CRT)**: Cathode ray tube is forms of monitors that is heavy and large in size and also consume a lot of electricity.
2. **Liquid Crystal Display (LCD)**: Liquid crystal display is forms of monitors that is flat, lighter and consume less electricity.
3. **Prompt**: Prompt is a symbol which shows that the computer is working on an instruction or command.
4. **Cursor**: Cursor normally appears like dash or a small line on the screen. It always bleak, it show where text or graphic will be entered or delete.

ASSESSMENT

1. Define monitor
2. List the two types of monitor
3. Highlight four forms of monitor

Week 2

Topic: The System Unit

System unit is metallic box that contain the major components of the computer. It contains the heart of the computer system called the central processing unit (CPU). The central processing unit is where all the processing function takes place on the computer system.

A system unit is the part of a computer that houses the primary devices that perform operations and produce results for complex calculations. It includes the motherboard, CPU, RAM and other components, as well as the case in which these devices are housed. This unit performs the majority of the functions that a computer is required to do.

The term system unit is generally used to differentiate between the computers itself and its peripheral devices, such as the keyboard, mouse and monitor.

(CPU) The central processing unit is the brain of the computer system. It is responsible for all processing activities that take place within the computer system. It is also responsible for processing data given meaningful information.

Component Of the CPU

The CPU consist of the three components

1. The Control.
2. The arithmetic and logic unit: this is the unit responsible for carrying out arithmetic operation such as addition, subtraction, multiplication and division on data. It also carries out logical operation such as comparing two items (e.g >, <, =, etc)
3. Main memory: this is the unit that supervises, control and coordinates the execution of the program in a correct order.

It ensures the smooth operation of the hardware components fetches and interprets instruction to the unit responsible for executing the instructions.

Main Memory: this is the part or the CPU that stores data to be processed well as the instruction for processing them. Data must be stored inside the main memory before they can be processed into information. It can also be called the main storage and primary storage.

External Features Of System Unit

1. Power button: Power button is used to turn on or turn off the computer system

2. Power light: Power light show the status of the system by coming up when the system if turn on and also it turn off when the system if being turned off.
3. The Rest Button: The rest button is used for restarting of the computer system
4. The Drive: The drives are the point where storage devices like floppy disk, compact disk are being inserted.
5. The Ports: The ports are the point at the back of the system unit where external devices such as mouse, keyboard, e.t.c are being connected.

ASSESSMENT

1. Define System Unit
2. The three components of a CPU are
3. List three external features of System unit

Week 3

Topic: The Keyboard

Definition of Keyboard

The Keyboard is an input device. It is used to send data into the computer system for processing. The keyboard is used to communicate with the computer. It is used to enter data into the computer in form of digits, alphabets, symbols. A **computer keyboard** is an input device used to enter characters and functions into the computer system by pressing buttons, or **keys**. It is the primary device used to enter text. A keyboard typically contains keys for individual letters, numbers and special characters, as well as keys for specific functions. A keyboard is connected to a computer system using a cable or a wireless connection.

Types of Keyboard

There are two major types of keyboard which are

1. Standard Keyboard: The standard keyboard has less than 100 keys. It has 10 function keys labeled f1, f2, f3 —— f10 arranged vertically on the right side of the keyboard.
2. Enhanced Keyboard: An enhanced keyboard contain about 101/102 keys. It has twelve function key labeled f1, f2 ——— f12 arranged horizontally at the top of the keyboard.

Sections of the Keyboard

The keyboard has five different sections. Such as

1. Function Keys: This is the section that is used to perform specific function and short cut. It is label f1, f2, f3 —- f12.
2. Alphanumerical Keys: This is the section on the keypad that contain the alphanumerical character (A-Z) numerical character (0-9) punctuation mark (,")
3. Control Keys: These are keys used to control the movement of the cursor on the monitor when performing operation
4. Numerical Keys: These are section of keys that contain numerical character and arithmetic operation
5. Special Keys: These are keys that contain the key that are used to perform special operation. The special keys are ALT, SHIFT, INSERT, WINDOW, and CTRL KEYS.

Keyboard

Key/Symbol	Explanation
Windows	PC keyboards have a Windows key, which looks like a four-pane window
Command	Apple Mac computers have a command key.
Esc	Esc (Escape) key
F1 – F12	Information about the F1 through F12 keyboard keys.
F13 – F24	Information about the F13 through F24 keyboard keys.
Tab	Tab key
Caps lock	Caps lock key
Shift	Shift key
Ctrl	Ctrl (Control) key
Fn	Fn (Function) key
Alt	Alt (Alternate) key (PC Only; Mac users have Option key)
Spacebar	Spacebar key
Arrows	Up, Down, Left, Right Arrow keys
Back Space	Back space (or Backspace) key
Delete	Delete or Del key
Enter	Enter key
Prt Scrn	Print screen key
Scroll lock	Scroll lock key
Pause	Pause key
Break	Break key
Insert	Insert key
Home	Home key
Page up	Page up or pg up key
Page down	Page down or pg dn key
End	End key
Num Lock	Num Lock key
~	Tilde
`	Acute, Back quote, grave, grave accent, left quote, open quote, or a push
!	Exclamation mark, Exclamation point, or Bang
@	Ampersat, Arobase, Asperand, At, or At symbol
#	Octothorpe, Number, Pound, sharp, or Hash
£	Pounds Sterling or Pound symbol
€	Euro
$	Dollar sign or generic currency
¢	Cent sign
¥	Chinese Yuan
§	Micro or Section
%	Percent
°	Degree
^	Caret or Circumflex
&	Ampersand, Epershand, or And
*	Asterisk and sometimes referred to as star.
(	Open parenthesis
)	Close parenthesis
–	Hyphen, Minus or Dash

_	Underscore
+	Plus
=	Equals
{	Open Brace, squiggly brackets, or curly bracket
}	Close Brace, squiggly brackets, or curly bracket
[	Open bracket
]	Close bracket
|	Pipe, Or, or Vertical bar
\	Backslash or Reverse Solidus
/	Forward slash, Solidus, Virgule, or Whack
:	Colon
;	Semicolon
“	Quote, Quotation mark, or Inverted commas
‘	Apostrophe or Single Quote
<	Less Than or Angle brackets
>	Greater Than or Angle brackets
,	Comma
.	Period, dot or Full Stop
?	Question Mark

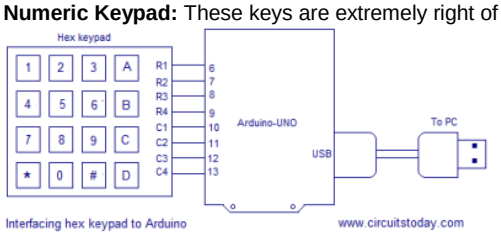
The keyboard

- Ctrl A – select all
- Ctrl B – bold
- Ctrl C – copy
- Ctrl D – duplicate
- Ctrl E – align to the centre
- Ctrl F – find
- Ctrl G – go to
- Ctrl I – italics
- Ctrl J – justify
- Ctrl K – insert
- Ctrl L – align to the left
- Ctrl M – increase indent
- Ctrl N – open new document
- Ctrl O – open
- Ctrl P – print
- Ctrl R – align to the right
- Ctrl S – save
- Ctrl T – increase indent of a line
- Ctrl U – underline
- Ctrl V – paste
- Ctrl W – close
- Ctrl X – cut
- Ctrl Y – redo
- Ctrl Z – undo.

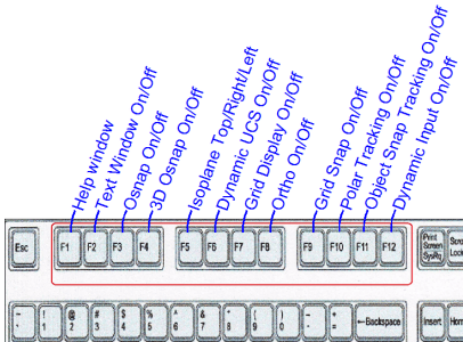
The computer keyboard is basically divided into five sections made up of different keys that perform specific function, i.e.

- **Alphanumeric keys sections**: These are used to type alphabets and numbers (Aa-Zz) and (0-9). It contains symbols and special characters too.

- **Numeric Keypad:** These keys are extremely right of all modern computer keyboards.



- **Function Keys:** These are twelve in number F_1-F_2 and are located horizontally on the first row of computer keyboard.



- Control Keys: They are used together with other keys to instruct the computer to perform special task they are **Ctrl, Del, Esc** and
- **Cursor control keys or cursor manipulation key:** This allows the user of a computer keyboard to move the cursor to the left, right, up one life and down one.

They are also called **arrow keys.**

ASSESSMENT

1. Define Keyboard
2. List the two types of Keyboard

Week 4

Topic: Computer Ethics

Computer ethics can be defined as a set of moral principle that requires the use of computer. It deals with how computer professional should make decision regarding professionals and social conduct.

Computer Room Management Ethics

For the effective operation and performance of a computer system. Vital thing needed to be considered when installing a computer and they are stated as follows.

1. **Proper Ventilation**: There should be ventilation in order to prevent congestion where people works with computer (computer room)
2. **Neat Environment**: The computer room must be kept neat, tidy, and free from dust and dirts. This is important because dirts and dust can cause damage to the computer hardware equipment.
3. **Access to Computer Room**: The computer room should be restricted to authorized users or staff, for instance staff may e given an access card that will be slot into open the door when entering
4. **Appropriate Illumination**: Computer room needs appropriate light for people to see clearly, florescent bulb should be based to make the room suitable for operation.

Laboratory Rules and Regulation

1. The computer room must be kept neat and clean
2. The computer room must be swept everyday
3. The computer room must not be wet at all
4. The computer is not a place where we eat
5. Always cover the computer with a jacket after use
6. Always switch off all the appliances after use
7. Unauthorized user must be restricted from the computer
8. The computer room must e dust free environment
9. The computer room should be kept cool with air condition

Assessment

Mention 5 Laboratory rules and regulations

Week 5 &6

Topic: Word Processing

Word Processing

Word processing package are application software used in typing and editing document such as letter, memo, reports.. These programs provide facilities to correcting and editing document without user nee to retype the entire document. It also provide facilities for moving or copying text from one place to another in document.

Word processing includes a number of tools to format your pages. For example, you can organize your text into columns, add page numbers, insert illustrations, etc. However, word processing does not give you complete control over the look and feel of your document. When design becomes important, you may need to use desktop publishing software to give you more control over the layout of your pages.

Word processing software typically also contains features to make it easier for you to perform repetitive tasks. For example, let's say you need to send a letter to all your customers regarding a new policy. The letter is the same for all customers except for the name and address at the top of the letter. A mail merge function allows you to produce all the letters using one template document and a table with customer names and addresses in the database.

A **word processor** is an electronic device or computer software application that performs the task of composing, editing, formatting, and printing of documents.

Activities in Word Processing

Some activities that can be carried using the word processing package are

1. Creating Document: Creating document is the act of typing document for the first time using the computer
2. Editing Document: Editing document is the act of editing or amending an existing document by inserting or deleting text and also correcting spelling error.
3. Saving Document: Saving document is the act saving your document in the computer for future uses. It is also enable you to name your document.
4. Formatting Document: Formatting document is the act of enhancing the appearance of your document such as Bold, Italic, changing font type, size, or font colour.
5. Printing Document: Printing document is the act of printing out document you have on your computer on a paper. The printed document is called hard copy
6. Retrieving Document: Retrieving document is the act of uploading and already saved document.

Features of Standard Word Processor

Word processors that support only these features (and maybe a few others) are called *text editors*. Most word processors, however, support additional features that enable you to manipulate and format documents in more sophisticated ways. These more advanced word processors are sometimes called *full-featured word processors.* Full-featured word processors usually support the following features:

- **File management**: Many word processors contain file management capabilities that allow you to create, delete, move, and search for files.
- **Font specifications:** Allows you to change fonts within a document. For example, you can specify bold, italics, and underlining. Most word processors also let you change the font size and even the typeface.
- **Footnotes and cross-references:** Automates the numbering and placement of footnotes and enables you to easily cross-reference other sections of the document.
- **Graphics:** Allows you to embed illustrations and graphs into a document. Some word processors let you create the illustrations within the word processor; others let you insert an illustration produced by a different program.
- **Headers**, **footers, and page numbering:** Allows you to specify customized headers and footers that the word processor will put at the top and bottom of every page. The word processor automatically keeps track of page numbers so that the correct number appears on each page.
- **Layout**: Allows you to specify different margins within a single document and to specify various methods for indenting paragraphs.
- **Macros**: A *macro* is a character or word that represents a series of keystrokes. The keystrokes can represent text or commands. The ability to define macros allows you to save yourself a lot of time by replacing common combinations of keystrokes.
- **Merges:** Allows you to merge text from one file into another file. This is particularly useful for generating many files that have the same format but different data. Generating mailing labels is the classic example of using merges.
- **Spell checker**: A utility that allows you to check the spelling of words. It will highlight any words that it does not recognize.
- **Tables of contents and indexes:** Allows you to automatically create a table of contents and index based on special codes that you insert in the document.
- **Thesaurus:** A built-in thesaurus that allows you to search for synonyms without leaving the word processor.
- **Windows**: Allows you to edit two or more documents at the same time. Each document appears in a separate *window*. This is particularly valuable when working on a large project that consists of several different files.

WYSIWYG (what you see is what you get): With WYSIWYG, a document appears on the display screen exactly as it will look when printed.

The line dividing word processors from desktop publishing systems is constantly shifting. In general, though, desktop publishing applications support finer control over layout, and more support for full-color documents.

More advanced features found in recent word processors include:

- Collaborative editing, allowing multiple users to work on the same document.
- Indexing assistance. (True indexing, as performed by a professional human indexer, is far beyond current technology, for the same reasons that fully automated, literary-quality machine translation is.)
- Creation of tables of contents.
- Management, editing, and positioning of visual material (illustrations, diagrams), and sometimes sound files.
- Automatically managed (updated) cross-references to pages or notes.
- Version control of a document, permitting reconstruction of its evolution.
- Non-printing comments and annotations.
- Generation of document statistics (characters, words, readability level, time spent editing by each user).
- “Styles”, which automate consistent formatting of text body, titles, subtitles, highlighted text, and so on.

Examples of Word Processors

1. Microsoft word
2. Google doc
3. Word Pad
4. Apache Open Office
5. Spell Checker
6. Word Perfect
7. Text Edit
8. Jarte

Assessment

Identify some of the features on your word processor

Week 7 & 8

Topic: Data Processing

Data processing refers to the transformation of raw data into meaningful output. **Data processing** is, generally, “the collection and manipulation of items of data to produce meaningful information.” In this sense it can be considered a subset of information processing, “the change (processing) of information in any manner detectable by an observer.

Data processing is simply the conversion of raw data to meaningful information through a process. Data is manipulated to produce results that lead to a resolution of a problem or improvement of an existing situation. Similar to a production process, it follows a cycle where inputs (raw data) are fed to a process (computer systems, software, etc.) to produce output (information and insights).

Data processing is the conversion of data into usable and desired form. This conversion or “processing” is carried out using a predefined sequence of operations either manually or automatically. Most of the data processing is done by using computers and thus done automatically. The output or “processed” data can be obtained in different forms like image, graph, table, vector file, audio, charts or any other desired format depending on the software or method of data processing used.

Generally, organizations employ computer systems to carry out a series of operations on the data in order to present, interpret, or obtain information. The process includes activities like data entry, summary, calculation, storage, etc. Useful and informative output is presented in various appropriate forms such as diagrams, reports, graphics, etc

Data can be done manually using a pen and paper, mechanically using simple devices eg typewriter or electronically using modern data processing tools eg computers

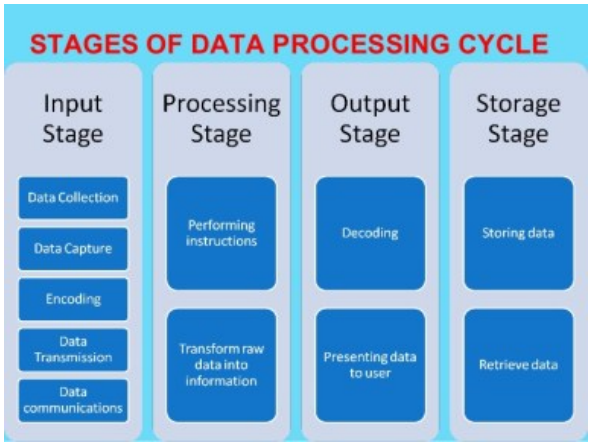
Data collection involves getting the data/facts needed for processing from the point of its origin to the computer

Data processing may involve various processes, including:

- Validation – Ensuring that supplied data is correct and relevant.
- Sorting – “arranging items in some sequence and/or in different sets.”
- Summarization – reducing detail data to its main points.
- Aggregation – combining multiple pieces of data.
- Analysis – the “collection, organization, analysis, interpretation and presentation of data.”
- Reporting – list detail or summary data or computed information.

- Classification – separates data into various categories.

Data Processing Cycle



Data Input- the collected data is converted into machine-readable form by an input device, and send into the machine.

Processing is the transformation of the input data to a more meaningful form (information) in the CPU

Output is the production of the required information, which may be input in future.

Stages of Data Processing Cycle

1) Collection is the first stage of the cycle, and is very crucial, since the quality of data collected will impact heavily on the output. The collection process needs to ensure that the data gathered are both defined and accurate, so that subsequent decisions based on the findings are valid. This stage provides both the baseline from which to measure, and a target on what to improve.

Some types of data collection include census (data collection about everything in a group or statistical population), sample survey (collection method that includes only part of the total population), and administrative by-product (data collection is a byproduct of an organization's day-to-day operations).

2) Preparation is the manipulation of data into a form suitable for further analysis and processing. Raw data cannot be processed and must be checked for accuracy. Preparation is about constructing a data set from one or more data sources to be used for further exploration and processing. Analyzing data that has not been carefully screened for problems can produce highly misleading results that are heavily dependent on the quality of data prepared.

3) Input is the task where verified data is coded or converted into machine readable form so that it can be processed through a computer. Data entry is done through the use of a keyboard, digitizer, scanner, or data entry from an existing source. This time-consuming process requires speed and accuracy. Most data need to follow a formal and strict syntax since a great deal of processing power is required to breakdown the complex data at this stage. Due to the costs, many businesses are resorting to outsource this stage.

4) Processing is when the data is subjected to various means and methods of manipulation, the point where a computer program is being executed, and it contains the program code and its current activity. The process may be made up of multiple threads of execution that simultaneously execute instructions, depending on the operating system. While a computer program is a passive collection of instructions, a process is the actual execution of those instructions. Many software programs are available for processing large volumes of data within very short periods.

5) Output and interpretation is the stage where processed information is now transmitted to the user. Output is presented to users in various report formats like printed report, audio, video, or on monitor. Output need to be interpreted so that it can provide meaningful information that will guide future decisions of the company.

6) Storage is the last stage in the data processing cycle, where data, instruction and information are held for future use. The importance of this cycle is that it allows quick access and retrieval of the processed information, allowing it to be passed on to the next stage directly, when needed. Every computer uses storage to hold system and application software.

Types of Data Processing

Manual data processing: In this method data is processed manually without use of machine or electronic device. This methods might be accompanied with automatic method for completion of the data processing.

Mechanical data processing – Data processing is done by use of mechanical device or very simple electronic devices like calculator and type writers. When the need for processing is simple this method can be adopted.

Electronic data processing – This is the fastest and best available method with highest reliability and accuracy. Technology used is latest as this method uses computers and employed in most of the agencies. The use of software forms the part of this type of data processing.

Data Processing Methods

Manual Data Processing – data is processed manually without using any machine or tool to get required results. In manual data processing, all the calculations and logical operations are performed manually on the data.

Mechanical Data Processing – data is processed by using different devices like typewriters, mechanical printers or other mechanical devices.

Electronic Data Processing is the modern technique to process data. The data is processed through computer; Data and set of instructions are given to the computer as input and the computer automatically processes the data according to the given set of instructions. The computer is also known as electronic data processing machine.

ASSESSMENT

1. What is Data Processing
2. Highlight the stages of data processing
3. State the three data processing methods

Week 9

Topic: Features of a Computer

The increasing popularity of computer has proved that it is very powerful and useful machine. The power and usefulness of this popular machine is mainly due to the following features:-

a) Speed
b) Accuracy
c) Diligence
d) Versatile
e) Storage
f) Automatic
g) Reliability

a) **Speed: –** Computer can work at a very high speed. The time taken by the computer to execute instruction is very fast. Its processing speed is measured in a fraction of a second. CPU of a computer can perform more than 10 million operations per second. All the instructions are executed in accordance with a clock, whose frequency is measured in Mhz.
Millisecond (KHZ) – a thousandth of a second. (Kilo Hertz)
Microsecond (MHZ) – a millionth of a second. (Mega Hertz)
Nanosecond (GHZ) – a billionth of a second. (Giga Hertz)
Pico second (THZ) – a trillionth of a second. (Tera Hertz)
b) **Accuracy: –** Though the computer does its work with a very high speed, it does not make any mistake unless the user gives it a wrong instruction. Computers are 100% accurate. But if we feed wrong data to the computer, it returns the same wrong output or information called GIGO (Garbage in garbage out).
c) **Diligence: –** Computers can work for many hours continuously without taking any rest and without decreasing its speed, accuracy and efficiency. It is free from tiredness, lack of concentration, fatigue etc.
d) **Versatility: –** Computer is a versatile machine which can do varieties of task such as simple calculation to a complex and logical operation. It is used in various fields for various purposes. Computers are capable of performing almost task provided the task can be reduced to a series of logical steps so that an appropriate program in a suitable language can be fed to a computer memory.
e) **Storage: –** Computer has mass storage section where we can store large volume of data for future work. The speed with which computers can process large quantities of data/ Information, the size of input so also the output is quite large. The size of information to be stored further increases due to graphic applications. Such data are easily recall from the secondary storage devices like floppy disk (FDD), hard disk (HDD), compact disk (CD) etc.
f) **Automatic: –** Once the instruction to do any work is given to the computer, the computer does its work automatically by itself.
g) **Reliability: –** Since computer can do its work very fast, without making any mistake and

without taking rest and is able to store data for future use, it is a very reliable or trustworthy machine.

ASSESSMENT

1. Highlight FIVE features of a computer

JSS 1

COMPUTER SCIENCE

THIRD TERM

TABLE OF CONTENT

Week 1

Topic: Revision of Last Term's Work

Students and Teachers are to do a revision of the previous term's work.

ASSESSMENT

Summarize last term's work

Week 2

Topic: Important Tool For Processing Data

Data are raw fact given to the system to process in order to obtain information. Data are referred to as unprocessed information

Information is the result to obtain from a processed data. Information is referred to as PROCESSED DATA. Although data and information are used interchangeable but there are still differences.

Data are input into the computer system while information is displayed or painted out of the computer system.

However, many tools such as finger, abacus, and Napier logarithms e.t.c can be used to process data into information computer system is the best of all these tools because of the following reasons

1. Accuracy: Computer has high degree of accuracy. Therefore any data processed with computer system is being processed with high degree of accuracy.
2. Reality: Computers are the most reliable machine that has ever. Exist in human history therefore any information obtained from computer processed data is highly reliable.
3. Fastest Machine: computers perform operation in micro seconds. There data processed using computer system is done at a very fast rate which other machine cannot.
4. Easy to Operate: Computer requires little energy for operation on like other machine.
5. Efficiency: Although the efficient of machine can never be 100% percent, but computer has as much as 99.9% percent efficient.

Assessment

1. Mention 3 examples of data processing tools
2. What are the reasons for using these tools?
3. What is the accepted percentage for a computer's efficiency?

Week 3

Topic: The Device

A device is any machine or tools used for a particular purpose. It is a tool used to perform a specific function.

It is an object, machine, or piece of equipment that has been made for some special purpose. In the context of computer technology, a device is a unit of hardware , outside or inside the case or housing for the essential computer (processor, memory, and data paths) that is capable of providing input to the essential computer or of receiving output or of both. When the term is used generally (as in *computer devices*), it can include keyboards, mouse, display monitors, hard disk drives, CD-ROM players, printers, audio speakers and microphones, and other hardware units. Some devices such as a hard disk drive or a CD-ROM drive, while physically inside the computer housing, are considered devices because they are separately installable and replaceable. With notebook and smaller computers, devices tend to be more physically integrated with the “non-device” part of the computer.

Commented [SJ1]:

Classes Of Device

Devices can be classified into any of following

1. Early Counting Device: Early counting devices are devices that were used by man for counting during the primitive era. E.g. finger, stone, marbles. etc.
2. Mechanical Devices: Mechanical devices are devices that were used to perform mechanical function before the invention of the more sophisticated computer system. E.g. abacus. Slide rule etc. they perform the function without making use of electricity.
3. Electronic Devices: Electronic devices are devices that make use of high voltage electricity. E.g. electric grinding machine, printing machine.
4. Electronic Devices: Electronic devices on these parts are devices that use relatively low voltage supply. E.g. computer system, home appliances such as television, radio, and also office appliances.

Input Devices:

1. Graphics Tablets
2. Cameras
3. Video Capture Hardware
4. Trackballs
5. Barcode reader

6. Digital camera
7. Gamepad
8. Joystick
9. Keyboard
10. Microphone
11. Mouse (pointing device)
12. Scanner
13. Webcam
14. Touchpads
15. Pen Input
16. Microphone
17. Electronic Whiteboard
18. Magnetic Tape Drive

Output Devices:

1. Monitor (LED, LCD, CRT etc.)
2. Printers (all types)
3. Plotters
4. Projector
5. LCD Projection Panels
6. Computer Output Microfilm (COM)
7. Speaker(s)
8. Head Phone
9. Visual Display Unit
10. Film Recorder
11. Microfiche

Both Input–Output Devices:

1. Modems
2. Network cards
3. Touch Screen
4. Headsets (Headset consists of Speakers and Microphone. Speaker act as Output Device and Microphone act as Input device)
5. Facsimile (FAX) (It has scanner to scan the document and also have printer to Print the document)
6. Audio Cards / Sound Card

Assessment

List 5 input and output devices.

Week 4

Topic: Types and Uses Of Computer

Types of Computer

1. Analog Computer: Analog computers are computer that operate on value represented in form of continuous variables. That is, they are used for measuring physical condition, such as temperature, speed, pressure, e.t.c example are thermometer, barometer, volt meter, speedometer.
2. Digital Computer: Digital computers are computer that operate on data that represented in the form of discrete values. i.e they operate on digits or number. They are used for performing mathematical and logical operation on data. E.g. digital computer, programmable calculator, digital wrist watches, score board
3. Hybrid Computer: Hybrid computers are computer that combine they operation of analog and digital computer. That is they are used for both measurement and calculations. They are used in a specialized area such as scientific and technical application as well as researched institute. E.g. dispenser, exploration machine, weather forecast equipment.

Uses and Application Of Computer

Computer system has wide area of application ranging from schools, banks, hospital, government, parastatals, scientific research.

Uses Of Computer In School

1. It is used in keeping record and files of student and the entire school and staff
2. It is used for preparing examination question
3. It is used for preparing student result
4. It is used for classroom learning
5. It is used by teachers and student for making research.

Uses Of Computer In Hospital

1. It is used for keeping patient records
2. It is used for diagnosis of patients ailment
3. It is used for measure body temperature
4. Analog computer is used to measure body pressure

Uses Of Computer In Banks

1. It is used to calculate loan and money withdraw or deposit
2. Computer is used for keeping staff record
3. Computer is used to keep customers record
4. Computer is used to carryout daily banking transaction.
5. Computer is used for money transfer

Advantages Of Computer

1. Computer makes work to be easy, fast and accurate
2. Computer can store large volume of data
3. Computer can be used to provide security to document
4. Computer can perform more than one task at a time
5. Computer can be used to send electronic mails to friend.

Disadvantages Of Computer

1. Computer is very expensive
2. Computer depends on electricity mostly
3. Computer cannot operate on it own without human effort i.e. it is an electronic idiot
4. Computer can be used for fraud.

Assessment

Mention 2 uses of computer in the following places

1. School
2. Bank
3. Office
4. Auto-mechanic
5. Typist

Answers

3. Office – To save documents, To keep inventory and stock, To keep account

4. Auto-mechanic – To diagnose the problem of a faulty car, To save information about clients and car issues

5. Typist – To type document, To save document and information

Week 5

Topic: Fundamental Computer Operation

System start-up (switching on a computer). All computer component, cable and devices must be connected together, before switching on a computer system. To switch on the computer, simply press the power button on the system unit

When you switch on your computer system, the computer verifies its entire component in order to make it ready for performing operation. This process is called booting

Types Of Booting

There are two types of booting

1. Cold Booting: Cold booting is the process of turning on the computer system for the first time. This is done by pressing the power button on the system unit and monitor.
2. Warm Booting: warm booting is the process of re-booting the already booted system without switching of the computer; the short cut is CRT, ALT + DEL keys to be pressed.

System Shut Down

When you're done with what you are doing with the computer, it is very important you short down the computer do no form the habit of turning it on and off all the time you use it this may cause serious problem to compute system. Make sure all running applications and being saved and closed to avoid loss of files

Steps to Shut Down the Computer

1. Save and close all running application
2. Click on the start button on desktop
3. Click on turn off
4. Select turn off from the option displayed
5. Click ok and wait for minute while window is shorting down
6. Switch of the plug from the sockets.

Assessment

How can A Computer be shut down?

Week 6

Topic: Internal Features of the System Unit

(CPU)The central processing unit is the brain of the computer system. It is responsible for all processing activities that take place within the computer system. It is also responsible for processing data given meaningful information.

Components of the CPU

The CPU consist of the three components

1. The Control.
2. The arithmetic and logic unit: this is the unit responsible for carrying out arithmetic operation such as addition, subtraction, multiplication and division on data. It also carries out logical operation such as comparing two items (e.g >, <, =, etc)
3. Main memory: this is the unit that supervise, control and coordinates the execution of the program in a correct order.

It ensures the smooth operation of the hardware components, fetches and interprets instruction to the unit responsible for executing the instructions.

Main Memory: This is the part or the CPU that stores data to be processed well as the instruction for processing them. Data must be stored inside the main memory before they can be processed into information. It can also be called the main storage and primary storage.

ASSESSMENT

1. The CPU consists of the three components, HIGHLIGHT them?

Week 7

Topic: Screen Pointing Devices

A pointing device can be define as any hardware component that allows the user to input spatial data into the computer using physical gesture such as point click and drag.

Types of Pointing Devices

There are several pointing devices which are

1. **Mouse**: Mouse is an input device that is used for controlling the cursor on the computer monitor in order to point and select object or give command on the computer screen. It is usually placed on a mouse pad.

Two Types of Mouse
the most popular types of mouse are as follows:

(i) Mechanical Mouse: It has a small ball at the bottom. The ball rotates as the mouse is rolled over a flat surface. Usually, a rectangular rubber pad (known as mouse pad) is used as flat surface. As the mouse is rolled over the flat surface, the pointer moves in the same direction on the screen.

(ii) Optical Mouse: It has no ball at the bottom. It uses the laser technology to detect the mouse movement. Nowadays, it is commonly used in personal computers (PCs).

Functions of the Mouse

1. Clicking
2. Pointing
3. Double clicking

4. Right clicking.

2. Touch Pad

Touch Pad is a pressure-sensitive pointing device. Touch pad is also known as track pad. It is also stationary device like trackball but it has no moving parts. It is a small, flat surface (or sensitive pad) over which a user slides fingertip to move the pointer on the screen.

Touch Pad also has one or two buttons. These buttons are located near the pad. These buttons work like mouse buttons. Touch Pad is normally used with laptops. Nowadays, it is also available as separate input device. It is fixed on separate keyboard.

3. **Trackball**
A trackball is a pointing input device. It performs functions like a mouse but it is a stationary device. It has move-able ball on its top. The ball is rotated or rolled with fingers (or palm of the hand) to move the pointer on the screen. Like mouse, a trackball also has buttons used to send the commands to computer.

The trackball is usually available laptop computer. It is fixed on its keyboard. It is also available as separate input device.

ASSESSMENT

1. Define a pointing device?
2. List THREE types of pointing device?

Week 8

Topic: Mastery of the Keyboard

Definition of Keyboard

The Keyboard is an input device. It is used to send data into the computer system for processing. The keyboard is used to communicate with the computer. It is used to enter data into the computer in form of digits, alphabets, symbols. A **computer keyboard** is an input device used to enter characters and functions into the computer system by pressing buttons, or **keys**. It is the primary device used to enter text. A keyboard typically contains keys for individual letters, numbers and special characters, as well as keys for specific functions. A keyboard is connected to a computer system using a cable or a wireless connection.

Types of Keyboard

There are two major types of keyboard which are

1. Standard Keyboard: The standard keyboard has less than 100 keys. It has 10 function keys labeled f1, f2, f3 —— f10 arranged vertically on the right side of the keyboard.
2. Enhanced Keyboard: An enhanced keyboard contain about 101/102 keys. It has twelve function key labeled f1, f2 ——— f12 arranged horizontally at the top of the keyboard.

Sections of the Keyboard

The keyboard has five different sections. Such as

1. Function Keys: This is the section that is used to perform specific function and short cut. It is label f1, f2, f3 —- f12.
2. Alphanumerical Keys: This is the section on the keypad that contain the alphanumerical character (A-Z) numerical character (0-9) punctuation mark (,")
3. Control Keys: These are keys used to control the movement of the cursor on the monitor when performing operation
4. Numerical Keys: These are section of keys that contain numerical character and arithmetic operation
5. Special Keys: These are keys that contain the key that are used to perform special operation. The special keys are ALT, SHIFT, INSERT, WINDOW, and CTRL KEYS.

Keyboard

Key/Symbol	Explanation
Windows	PC keyboards have a Windows key, which looks like a four-pane window
Command	Apple Mac computers have a command key.
Esc	Esc (Escape) key
F1 – F12	Information about the F1 through F12 keyboard keys.
F13 – F24	Information about the F13 through F24 keyboard keys.
Tab	Tab key
Caps lock	Caps lock key
Shift	Shift key
Ctrl	Ctrl (Control) key
Fn	Fn (Function) key
Alt	Alt (Alternate) key (PC Only; Mac users have Option key)
Spacebar	Spacebar key
Arrows	Up, Down, Left, Right Arrow keys
Back Space	Back space (or Backspace) key
Delete	Delete or Del key
Enter	Enter key
Prt Scrn	Print screen key
Scroll lock	Scroll lock key

Pause	Pause key
Break	Break key
Insert	Insert key
Home	Home key
Page up	Page up or pg up key
Page down	Page down or pg dn key
End	End key
Num Lock	Num Lock key
~	Tilde
`	Acute, Back quote, grave, grave accent, left quote, open quote, or a push
!	Exclamation mark, Exclamation point, or Bang
@	Ampersat, Arobase, Asperand, At, or At symbol
#	Octothorpe, Number, Pound, sharp, or Hash
£	Pounds Sterling or Pound symbol
€	Euro
$	Dollar sign or generic currency
¢	Cent sign
¥	Chinese Yuan
§	Micro or Section
%	Percent
°	Degree
^	Caret or Circumflex
&	Ampersand, Epershand, or And

*	Asterisk and sometimes referred to as star.
(	Open parenthesis
)	Close parenthesis
–	Hyphen, Minus or Dash
_	Underscore
+	Plus
=	Equals
{	Open Brace, squiggly brackets, or curly bracket
}	Close Brace, squiggly brackets, or curly bracket
[	Open bracket
]	Close bracket
|	Pipe, Or, or Vertical bar
\	Backslash or Reverse Solidus
/	Forward slash, Solidus, Virgule, or Whack
:	Colon
;	Semicolon
“	Quote, Quotation mark, or Inverted commas
‘	Apostrophe or Single Quote
<	Less Than or Angle brackets
>	Greater Than or Angle brackets
,	Comma
.	Period, dot or Full Stop
?	Question Mark

The keyboard

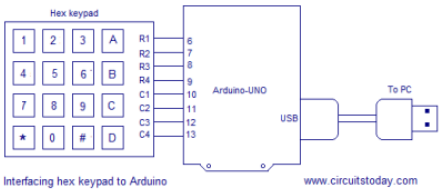
- Ctrl A – select all

- Ctrl B – bold
- Ctrl C – copy
- Ctrl D – duplicate
- Ctrl E – align to the centre
- Ctrl F – find
- Ctrl G – go to
- Ctrl I – italics
- Ctrl J – justify
- Ctrl K – insert
- Ctrl L – align to the left
- Ctrl M – increase indent
- Ctrl N – open new document
- Ctrl O – open
- Ctrl P – print
- Ctrl R – align to the right
- Ctrl S – save
- Ctrl T – increase indent of a line
- Ctrl U – underline
- Ctrl V – paste
- Ctrl W – close
- Ctrl X – cut
- Ctrl Y – redo
- Ctrl Z – undo.

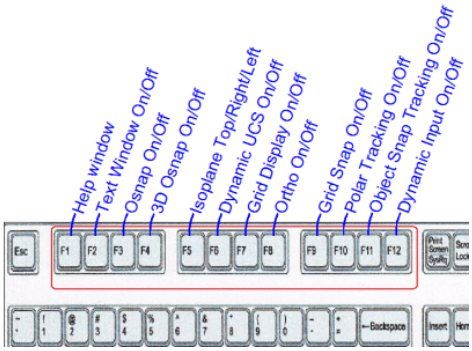
The computer keyboard is basically divided into five sections made up of different keys that perform specific function, i.e.

- **Alphanumeric keys sections**: These are used to type alphabets and numbers (Aa-Zz) and (0-9). It contains symbols and special characters too.

- **Numeric Keypad:** These keys are extremely right of all modern computer keyboards.



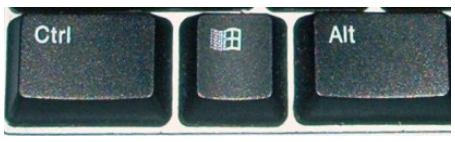
- **Function Keys:** These are twelve in number F_1-F_2 and are located horizontally on the first row of computer keyboard.



- Control Keys: They are used together with other keys to instruct the computer to perform special task they are **Ctrl, Del, Esc** and

- **Cursor control keys or cursor manipulation key:** This allows the user of a computer keyboard to move the cursor to the left, right, up one life and down one.

They are also called **arrow keys.**



Assessment

What keys do you use to perform the following functions

1. To undo an error ……..
2. To paste a copied content ……..
3. To cut a content
4. To do a central alignment of Text
5. To open a new document
6. To underline
7. To close a document
8. To align to the Left

Answers

1. Ctrl Z
2. Ctrl V
3. Ctrl X
4. Ctrl E
5. Ctrl N
6. Ctrl U
7. Ctrl W
8. Ctrl L