BHARATI COLLEGE OF EDUCATION

KANDRI MORE MANDER, RANCHI

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Assignment on

EPC-3

CRITICAL UNDERSTANDING OF ICT

EXTERNAL

1. Computer
2. Methods of Computer
3. Satellite

Guided by

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Certificate

This is to certify that this project – "EPC – 3" has been performed by Mr Satish Kumar of B. Ed 1st year .

This project has been successfully completed by the candidate under the supervision and guidance of Prof Manoj Kumar Gupta . He has taken proper care and shown almost sincerity in the completion of this project . I certify that this project is upto my expectations and as per the guidelines.

I wish him a bright and successful future ahead .

Guided by

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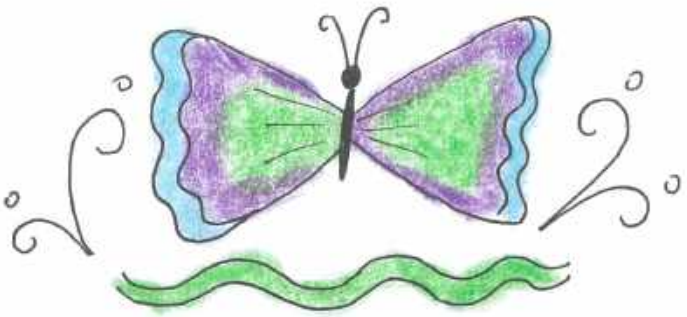
INDEX

EPC-3

S.no	Topic	Page no.	Sign
I.	Computer :-	1-21	
1.	Introduction	1-5	
2.	History	6-9	
3.	Types of computer	10-13	
4.	Characteristics	14-20	
5.	Conclusion	21	
II.	Methods of computer :-	22-47	
1.	Phase of computer	22-24	



S no.	Topic	Page no.	Sign
2.	Generations of computer	25-46	
3.	Conclusion.	47	
III.	Satellite :-		
1.	Introduction of satellite	48-53	
2.	History	54-58	
3.	Types	59-60	
4.	Conclusion	61	

Computer

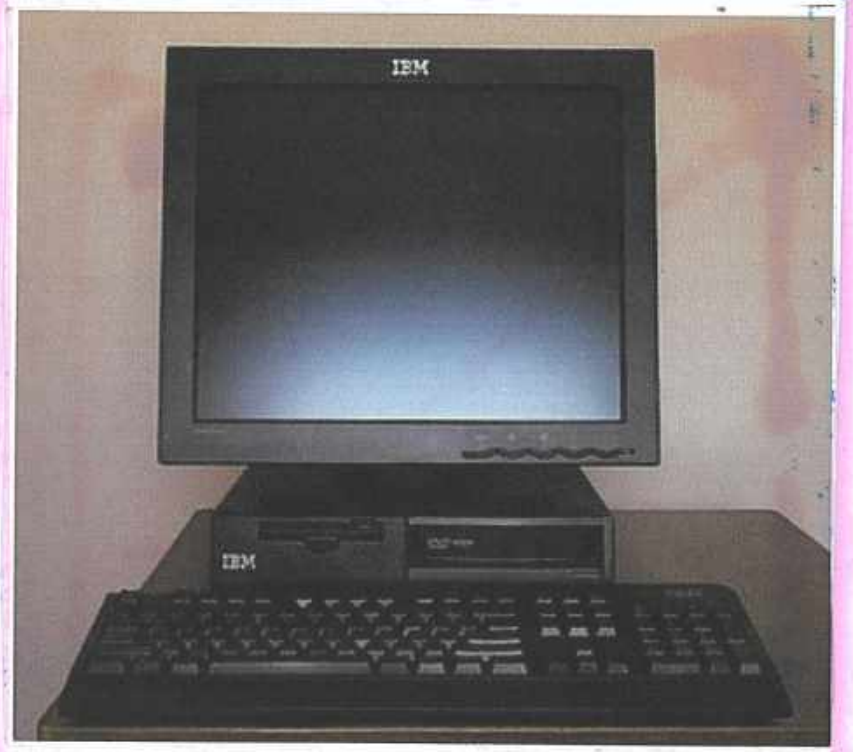
INTRODUTION OF COMPUTER

Oooo

• A Computer is a machine that can be programmed to carry out Squence of arthemetic or logical operation auto matically. Mordern digital electronic Computer can prefrom generic set of operation known as program these program enable Computer to prefrom a wide range of task. A Computer System is a nomially Comp-lete Computer that include the hardware Operating System and pheripheral equip-ment needed and Used for full oper-ation. this term may also refer to a group of Computer that are linked and

A board range of industrial and consumer product use computer as control systems. Special purpose devices like microwaves ovens and remote controls are included as are factory divices like Industrail roots and computer aided design as well as general purpose divices like smartphones. Computer power the Internet which link billions of other computer and users. Early Computer were meant tobe used only for calculations. Simple Internet like the obacus have aided people in doing Calculations. Since ancient times.

Early in the Industrail and Consumer product use computer as control system simple purpose divices like microwaves oven and remote control are included as are factory.


IBM
IBM

Definations of Computers:-

∴ The computer is an electronic system that has the ability to manipulate data quickly and accurately as well as designed and organized to automatically receive and store input data, processes it, and produces output under the supervision of a step by step instruction program which is stored in the computer.

By: Sanders.

Computer is an electronic divices which has the ability to do some tele coms like accept input, input processing, storing commands and provide output.

By:- Robert Blissmer

the Computer is an electronic calculating machine that quickly and can receive digital input information then processing it in accordance with a program stored in memory generate output information.

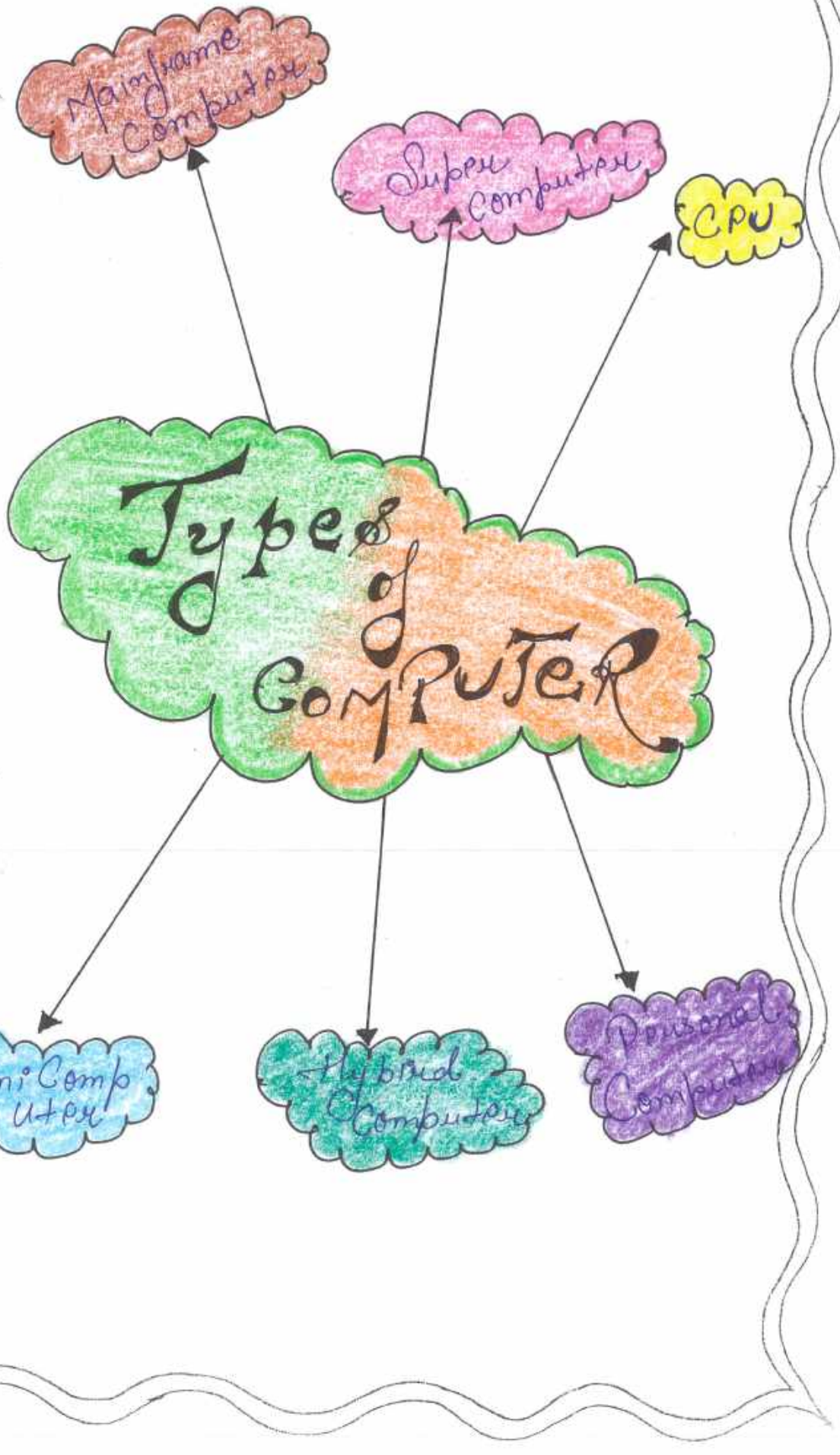
History of Computer Hardware

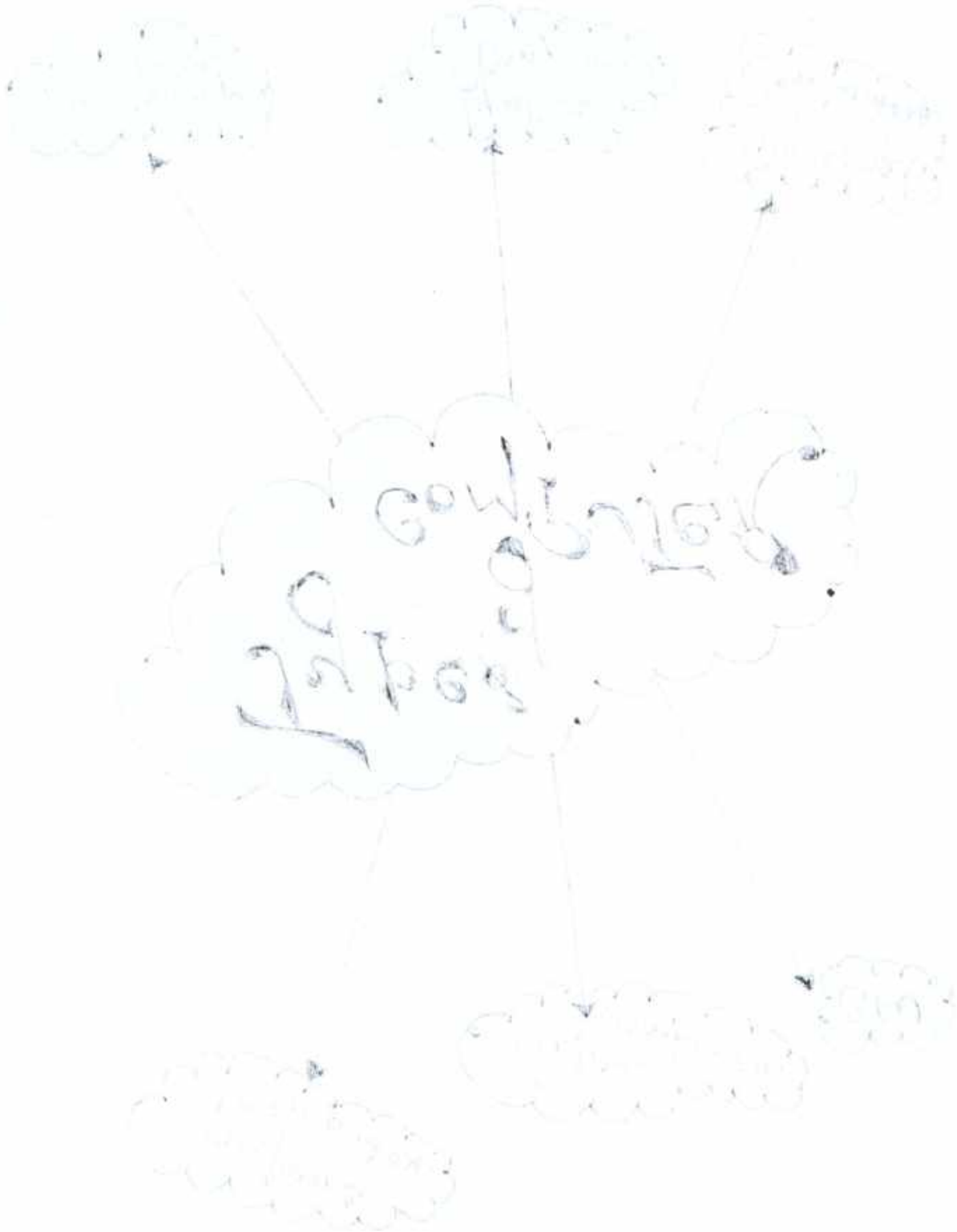
∴ Divices have been Used to aid Computation for thousand of years. mostly one to one Crosspondence with fingers. the earliest Counting divices was most likely a form of tally tast stick Later record keeping aid throught out the Fertile Crescent Calculi which represented Counts of Items, likely livestock & grains, sealed in hallows Unbaked clay Containers The abacus was initailly used for arithmetic tasks the Roman abascus was developed from divices Useding Babylonia early as 2400 BCE. Since then many other form of reckoning boards or table have been inxented. In medival European Counting house a checkered cloth would be placed on a table and maker moved around

around it according to Certain rules as an aid to Calculating Sum of money. The Slide ruled was invented around 1620-1630 by the English clergy man William Oughtred, Shortly after the publication of the Concept of the Logarithm. It is hand operated along Computer for doing multiplication and divisions. As slide rule development progressed, added Scales provided reciprocal Square and Square roots. Cubes and Cube roots as well as transcendental functions such as Logarithms and exponentails, Circular and hyperbolic trigonmetry and other functions. Slide rules with Special Scales are still Used for Quick performance of routine Calculation. Such as the Circular slide rules Used for time and Distance Calculation on light aircraft The differentail analyser, mechanical analog Computer designed to solve different

intel
Core 2 Duo

equations by integration, used wheel-and disc mechanisms to perform the integration. In 1876 Sir William Thomson had already discussed the possible construction of such as Calculator but he had been stymied by the limit output torque of the ball-and disk integrator. In different analyzer the output of one integrator drove the input of the next Integrator and graphic output. the torque amplifier was the advanced that allowed these machines to work. In 1890 the Spanish engineer Leonardo Torres Quevedo began to develop a Series of advanced analog machines that Could Solved real and Complex root of polynomials. After working on his different engine he announced his invention in 1822. in a paper to the 1823 he realized much more Graphical Design.


Mainframe Computer
Super Computer
CPU
Types of COMPUTER
Mini Comp Uter
Hybrid Computers
Personal Computer



∴ **Mainframe Computers :-** Computers used by Large Organisation to manage bulk data are are called Mainframe Computers Mainframe Computers include managing Customers Statistics, Census and other heavy data Single divices for example :- the System Used at Trading Companies.

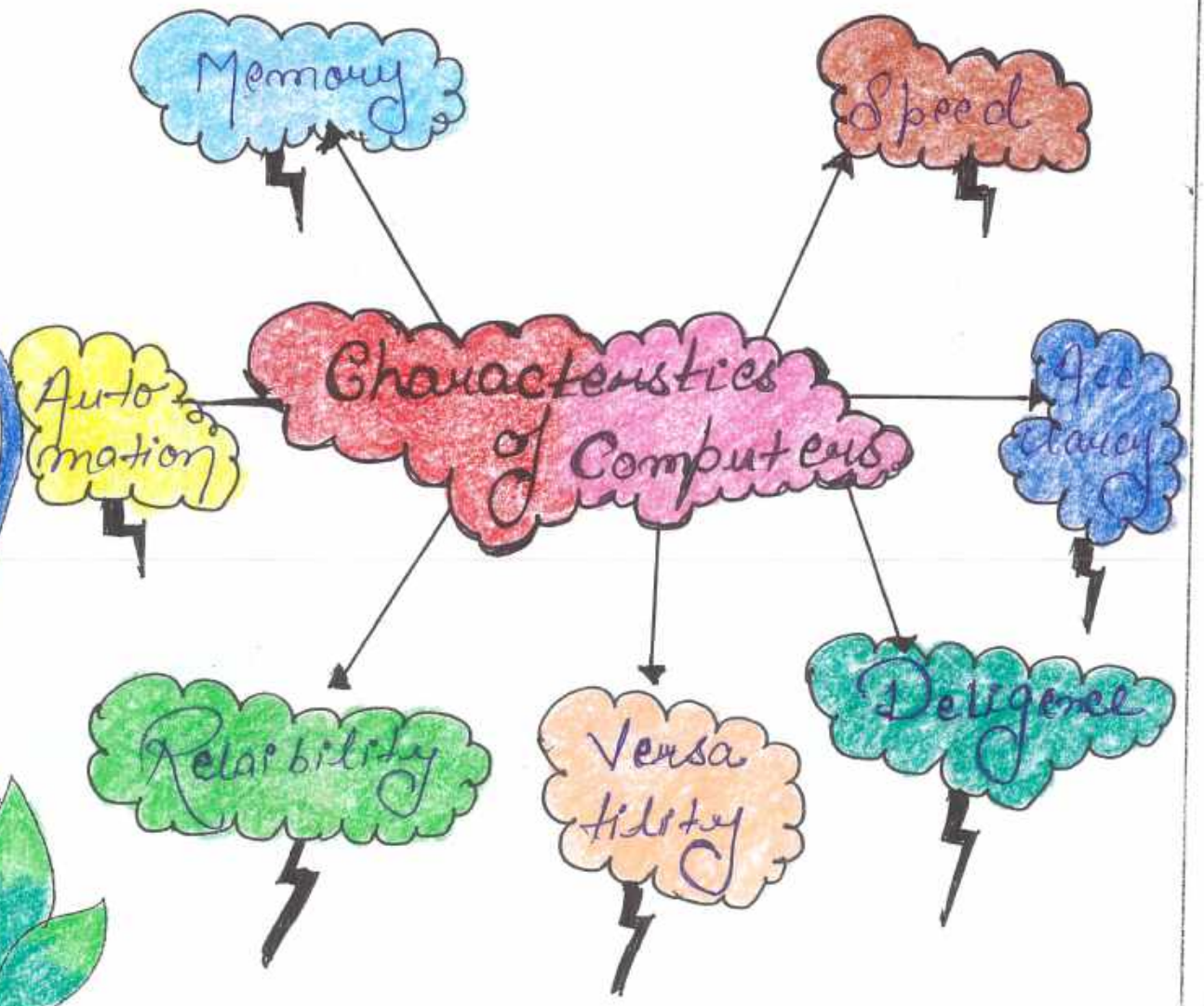
• **Super Computers :-** Computers used at Organisation dealing with Weather forecasting Quatum Mechanics climate research etc. where high level of preformance has to Justified are called as Super Computers

∴ **CPU :-** CPU Stands from Central Processing Unit. CPU appeard in the small CPU. RAM and memory clip. It is Usefull to the word processing. accounting, desktop management.

∴ **Mini Computers:-** Developed in the mid 1960. Mini Computers are Comparatively Smaller than mainframe Computers. They were developed keeping in classroom. They were developed keeping Consisderation human Interaction, Control instrument and ware Cost- effective for example Smart phone iPad etc.

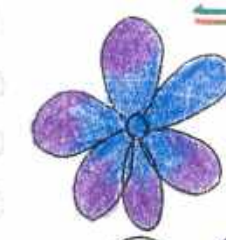
∴ **Hybrid Computers:-** Computers that exhibit feature of both analog and Digital Computers are Called Hybrid Computers The logical operations are Solved by the digital aspect and the differentail equation are solved using the analog features. few important examples of Hybrid Computers include Space flight food processing plants, etc.

∴ **Personal Computer** :- A personal Computer has one user who may also be the owner Calthough the term has also come also mean any Computer hard ware some what like the Original IBM PC, ...



16:35

∴ **Speed :-** A Computer work with higher Speed and accuracy Compared to human while performing mathematical Calculation Computer can process millions (1000,000) of instruction per Second. The time taken by Computer for these operation is micro-Seconds and nano Seconds.



∴ **Accuracy :-** Computer perform Calculation with 100% accuracy. Error may occur due to data inConsistency or inaccuracy.

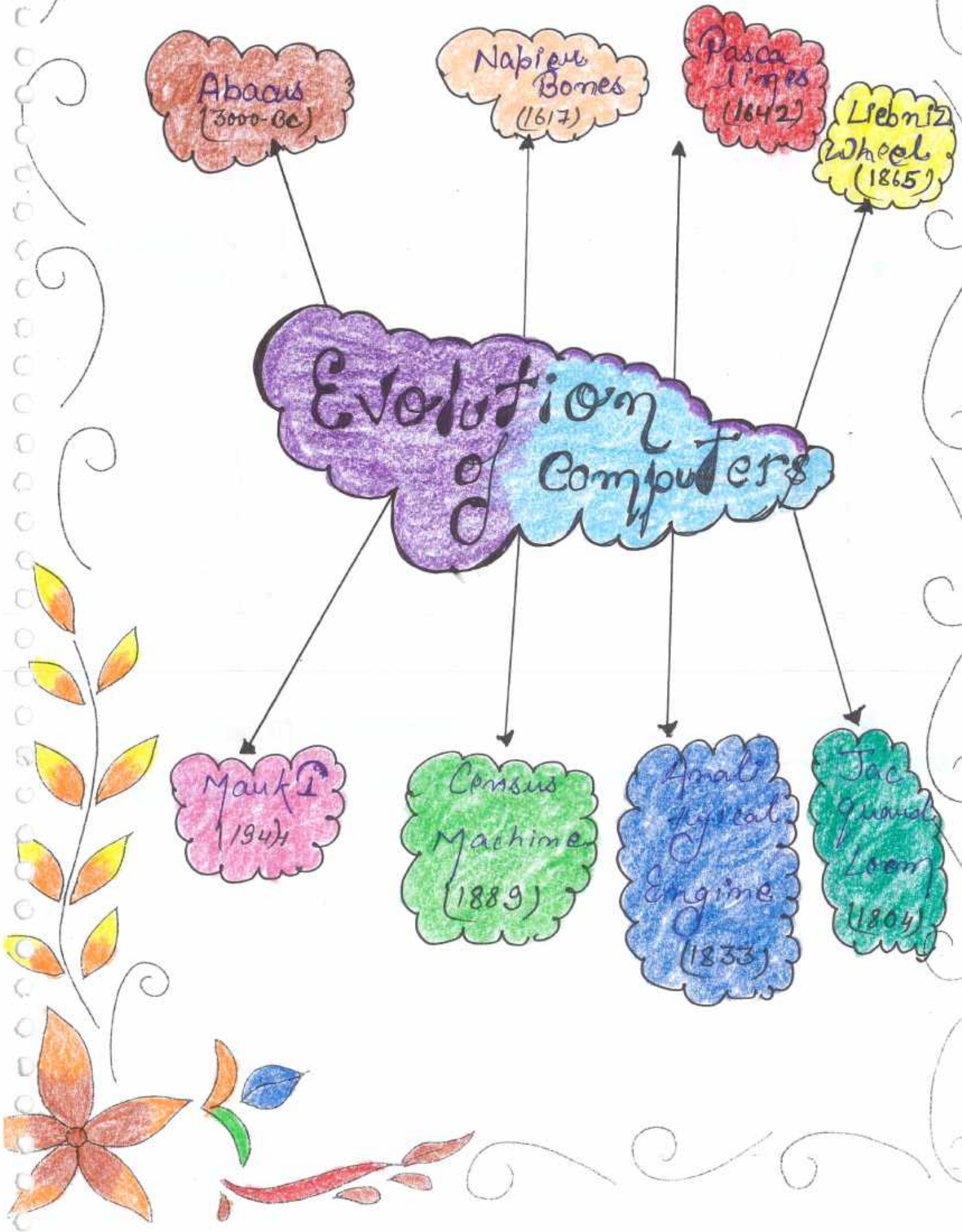
∴ **Diligence :-** A Computer can perform million of task or Calculation with the same Consistency and accuracy It doesn't feel any fatigue or lack of Concentration It memory also make it Superior to that of human beings.

∴ **Versatility :-** Versatility refers to the capabilities of a computer to perform different kinds of work with same accuracy and efficiency.

∴ **Reliability :-** A computer is reliable as it gives consistent result for similar set data ie if we give same set of input any number of times, we will get the same result.

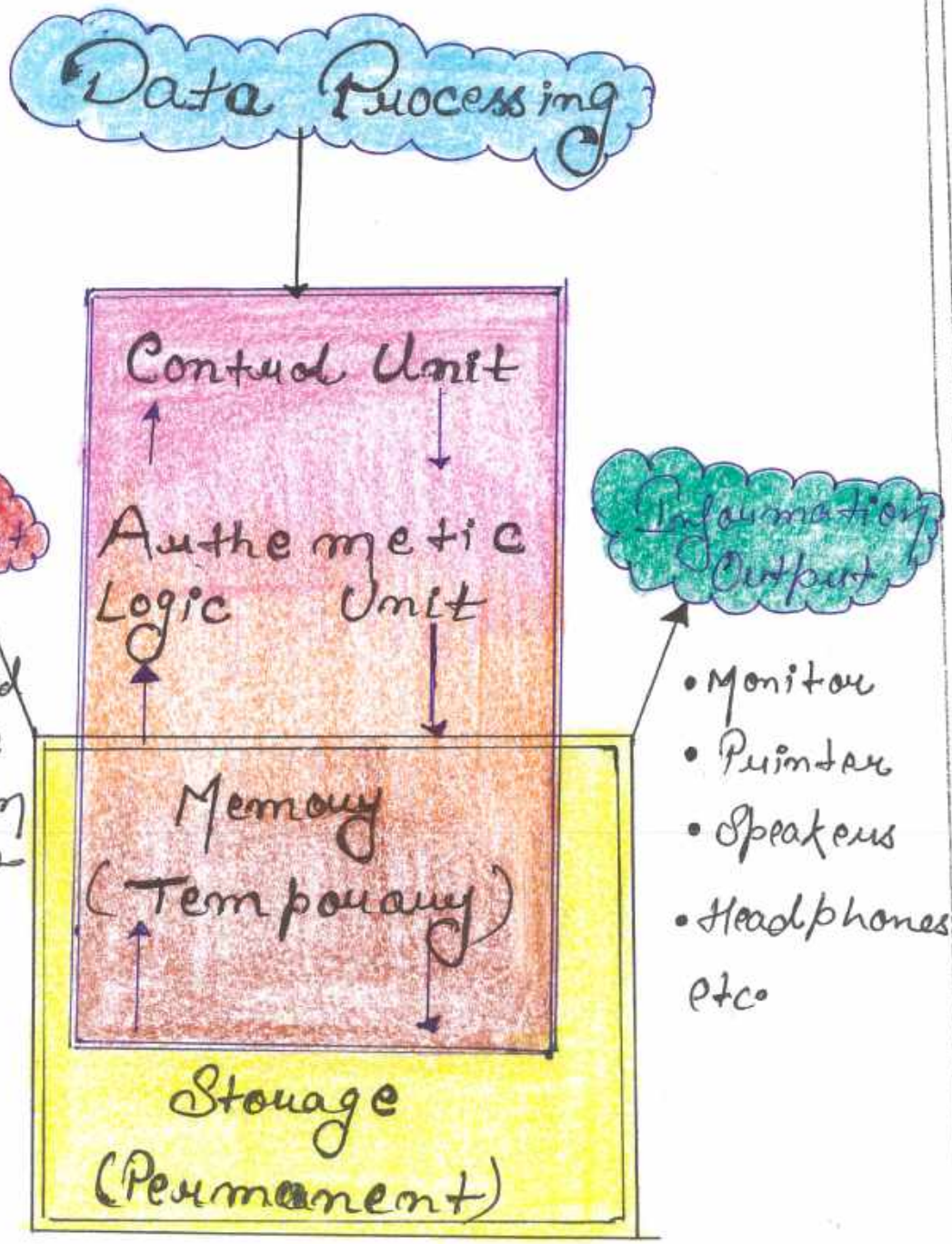
∴ **Automation :-** Computer has built in memory called primary memory where it store data secondary storage are removal divices suchas CD's pen.

∴ **Memory :-** A computer has primary as the fast where it store data secondary storage are removal divices suchas CD's pen drives which are also store data.


Evolution of Computers
Abacus (3000 BC)
Napier Bones (1617)
Pascaline (1642)
Leibniz Wheel (1865)
Mark I (1941)
Census Machine (1889)
Analytical Engine (1833)
Jacquard Loom (1804)

growth
information

Function of Computers....



CONCLUSION....

- As a result of the various improvement to the development of the Computer we have seen the Computer being used in all areas of life. It is a very useful tool that will continue to experience new development as time passes.
- Computers are used in various area of life Education, entertainment sport, advertisement, medicines, Science and engineering Government office and home are some of the application areas of Computer.

Conclusion

Methods of Computer...

IBM

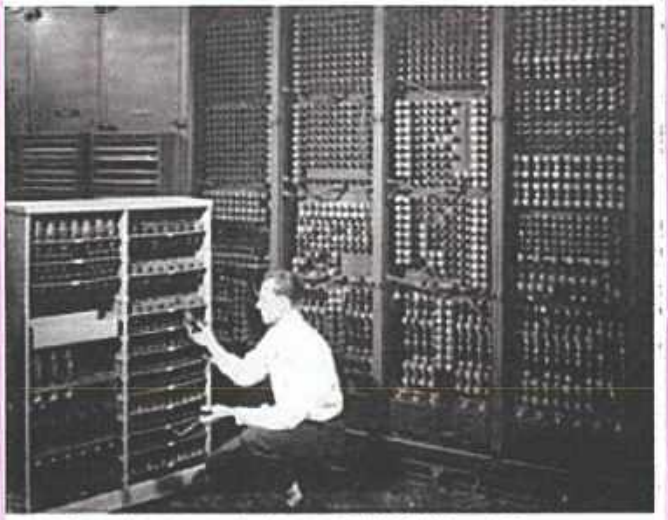
Phases of Computer Generations ....

- First Generation Computers :- (1940 - 1956)
- Second Generation Computers :- (1956 - 1963)
- Third Generation Computers :- (1964 - 1971)
- Fourth Generation Method :- (1971 - Present)
- Fifth Generation Computers :- (Present and Beyond)

Generation of Computer	Time Period	Evolving Hardware
∴ First Generation	1940 - 1950s	Vacuum Tube based
∴ Second Generation	1950s - 1960s -	Transistor Based
∴ Third Generation	1960s - 1970s	Integrated Circuit based
∴ Fourth Generation	1970s - Present	Microprocessor
∴ Fifth Generation	Present + Future	Artificial Intelligence Based

First Generation Computer :-

- The technology behind the primary Generation Computer was a fragile Glass divices which was called a Vaccum tube. These Computer were very heavy and large. These were not very reliable and programing on them was a tedious task as they used low-level programing language and used no OS. First-Generation Computer used for Calculation, Storage and Control. The period of first Generation was from 1946-1959. The Computer of first Generation used vaccum tubes as they basic Component for memory and Circuitary for CPU (Central processing Unit). These tubes like electric bulb, produced a lot of heat and the installation used free frequently



Replacing a bad tube meant checking among ENIAC's 19,000 possibilities.

Therefore they were very expensive and only large organization were able to afford it. In this Generation, mainly batch processing operating System was used Punch Cards, paper tape, and magnetic tape was used as input and output divices.

∴ The Main features of the first Generation are:-

- Vaccum tube technology.
- Unreliable.
- Supported machine language only.
- Very Costly.
- Generated a lot of heat.
- Slow input and Output divices.
- Need of AC
- Non-Portable

Some Computers of this Generation are:-

- ENIAC • EDVAC • UNIVAC • IBM-701
- IBM-650.

∴ Some Examples of First-Generation Computers are:-

∴ **ENIAC:-** Electronic Numerical Integrator and Computer built by J.J Presper Eckert and V. Mauchly was a General Purpose Computer. It had been Cumbersome, and large and Contained 18000 Vaccum tubes.

∴ **EDAVAC:-** Electronic Discrete Variable Automatic Computer was designed by Von-Nueman It could store data also and instruction and thus speed was enhanced.

∴ **UNIVAC:-** Universal Automatic Computer was developed in 1952 by Eckert and Mauchly.

Second Generation Computer

∴ Second Generation Computer used the technology of transistors rather than bulky vaccum tube Another feature was the core storage A transistor may be a device composed a semiconductor material that amplifies a sign or opened or closes a circuit.

Transistor were invented in Bell labs The uses of transistors made it possible to process powerfully and with due speed It reduced the dimensions and price was generated by vaccum tubes Central Processing Unit memory, programming language and input and output units also came into the force Second Generation

Second Generation Computer

The period of second Question was from 1959- 1965. In this Generation, transistor were used that were cheaper, Consumed less Power, more Compact in size, more reliable and faster than the first Generation machines made up of Vaccum tubes In this Generation, magnetic Cores were used as the primary memory and magnetic tape and magnetic disks as Secondary Storage drives
• In this Generation assembly language and high level language programing like FORTRAN, COBOL were Used the Computers used batch processing and multiprogramming operating System.

:: The main features of second Generation are :-

summit
IBM
OAK RIDGE

- Use of transistors
- Reliable in Comparison to first Generation Computers.
- Smaller Size as Compared to first Generation Computers.
- Generated less heat as Compared to first Generated Computers
- Consumed less electricity as Compared to first Generation Computers.
- Faster than first Generation Computers.
- Still very Costly.
- AC required.
- Supported machine and assembly language.
  - IBM 1620
  - IBM 7094
  - CDC 1604
  - CDC 3600
  - UNIVAC 1108

THIRD - GENERATION COMPUTER :-

During the third generation, technology envisaged a shift from huge transistor to integrated Circuits also referred to as IC. Here a variety of transistor were placed on Silicon chips called Semi Conductor. The most feature was speed and reliability. IC was made from Silicon and also called as Silicon Chips. A Single IC has many transistors, registers and Capicitors built on one this slice of Silicon. The Value Size was reduced and memory space and dealing efficiency were Increased during this Generation. The period of third Generation was from 1965 - 1971. The Computers of third Generation used Integrated Circuits (IC's)

in place of transistors resistors and capacitors along with associated circuitry. The IC was Invented by Jack Kilby The development made Computer Smaller in size reliable and efficient. In this Generation remote processing, time-sharing, multi programming operating system were Used. High level language (FORTRAN -II to IV, COBOL, PASCAL PL/1, BASIC ALGOL-68 etc) were Used during this Generation.

- This main feature of this Generation are:-
  - IC used
  - More reliable in Comparison to Previous two Generation
  - Smaller Size
  - Generated less Heat.
  - Fastest.

- Lesser Maintance.
- Costly.
- AC Required.
- Consumed Lesser Electricity.
- Supported high level language.

Some Computers of this Generation:-

- IBM 360 Series
- Honey well - 6000 Series
- PDP (Personal Data Processor)
- IBM - 370/168
- IDC - 316

∴ Fourth Generation Computer....

• In 1971 first microprocessor were used the large-scale of Integration LSI Circuits built on one chip called microprocessor. The advantage of this technique is that one microprocessor can contain all the circuits required to perform arithmetic, logic and control function on one chip.

The Computer using microchip were called micro-computer. This Generation Provided very Smaller Size of Computer with larger Capacities. These is not enough then very large scale Integrated (VLSI) Circuit replaced LSI Circuit. The Intel 4004 chip develop in 1971.

Located all the Component of PC. from the Central processing Unit and memory to input output Control. The period of fourth Generation was from 1971-1980. Computers of Fourth Generation used very large scale Integrated VSLI Circuits having about 5000 transistor and other circuit on a Single chip made it possible to have micro-Computers of fourth Generation Fourth Generation Computers become more Powerfull, Compact, reliable and affordable. As a result it gave rises to Personal Computer, time Sharing, real time ing network, distributed operating System were used. All the high level languages Like C, C++ DBASE etc were used in this Generation.

∴ The main feature of Fourth Generation are:-

- VLSI technology Used.
- Very cheap.
- Portable and reliable.
- Use of PCs.
- Very small size.
- Pipline processing.
- No AC required.
- Concept of Internet was Introduced.
- Great development in the field of networks.
- Computers become easily available.

Some Computers of this Generation were:-

- DEC 10.
- STAR 1000.
- PDP 11.
- CRAY -1 (Super Computer).
- Cray-X-MP (Super Computer.

∴ Fifth Generation Computers :-

The technology behind the fifth generation of computers. It alway computers to behave like Human. It is often seen in program like voice Recognition area of medicines and entertainment within the field of Games playing also it is shown remarkable performance where Computers are capable of beating human competitors.

The Speed as the highest size is the smallest and area of use has remarkably Increased. within the fifth Generation Computers. Though not a hundred percent AI has achived to data but keeping the sight to that this dream also will become

a reality soon.

∴ The Period of fifth Generation VSLI technology become ULSI (Ultra large Scale Integration) technology, resulting in the production of microprocessor Chips having ten million electronic This Generation is based on parallel Processing hardware and AI (Artificial Intelligence) Software AI is an emerging branch in Computer Science which interpt the means and method of making Computers think like Human beings. All high level language like C and C++ Java .Net etc. are Used Generation.

Some Computer of this Generation are:-

(a) Desktop
(b) Laptop
(c) Note book
(d) Ultra Book
(e) Chrome book

The main features of 5th Generation :-

- ULSI technology.
- Development of true artificial Intelligence.
- Development of Natural language Processing.
- Advancement in Parallel processing
- Advancement in Superconductor technology.
- More User-friendly interfaces with multimedia features.
- Availability of very powerful and compact Computers at Cheaper rates.

CONCLUSIONS .....

- The first Generation was developed from 1940 - 1956 followed by the second Generation from 1956 - 1963 the third Generation from 1964 - 1971 the fourth Generation from 1971 Until the present and the fifth Generation are still being developed.

The Computers made in the fifth Generation used ULSI technology Advacement in Super Conductor technology at parallel processing Development a lauge with artificial Intelligence.

Conclusion .....

Satellite

INTRODUCTION OF SATELLITE

- Satellite Communication is a system of transporting from one place to another using a communication. Satellites is orbit around the Earth.

A Communication Satellites is an artificial Satellites that transmits the signal via a transponder by riding the reciver at different locations

Telephone, Radio, Television on internet and Military application use Satellites Communication.

Introduction of Sculpture

There are different ways to Communicate and the propagation and Sky wave Propagation are the two ways Communication takes places for a certain distance. The Maximum distance covered by them ie 1500 km, which was over come by Satellities Communication

The Satellities Communication are Similar to the Space mirror that help us bounce Signals Such as Radio, Internet Data and Television from one Side of Earth to another Place.

Most of the Satellite Communication are in geostationary orbit 22300 Miles (35,900 km) above the equator, So that the Satellitips appear Satellite appear Stationary at Same point in the Sky.

∴ Purpose of Satellites Communication :-

∴ The purpose of Communication Satellites is to relay the Signal around the curve of the Earth allowing Communication between widely Separated geographical Points.

A Communication Satellitis use a wide range of radio and microwave frequencies. To avoid Signal interferences, International organisation have regulation for which frequency ranges or 'bands' certain organisation are allowed to use. This allocation of bands minimize the risk of Signal interference. Satellites are Specially made for mobile application such as Communication to Ships, vechicles Planes, handset etc.

History of Satellites Communication:-

∴ In October 1945 Arthur C. Clarke Published on articles title "Extra terrestrial Relays" in the British Magazine Wireless world. The articles described the fundamental behind the deployment of artificial Satellities in Geostationary orbit for the purpose of relaying radio Signals.

Arthur C clarke is quoted as being the inventor of the Concept of Communication. Satellities and the term clarke Belt is employed as a deprciation of the orbit.

The first artificial Earth Satellites was Sputnik 1 which was equipped with an onboard radio. transmitter that worked on two frequencies of 20.005 MHz and

and 40.002 Mhz on 7 and 15 metres wavelength.

The Satellites was not placed in orbit for the purpose of sending data from one point on Earth to another, the radio transmitter was meant to study the properties of radio transmitter was meant to study the properties of radio wave distribution through out atmosphere.

The launch of Sputnik 1 was a major step in the exploration of space and rocket development and mark the beginning of the Space age.

:- How Satellites Communication Work:-

• Satellities Communication Similar to Mirror that bounce Signals Such as radio, internet data and television from one Side of earth to another. The Stage are involved which explained the working of Satellities Communication.

:- The Satellities Communication Work:-

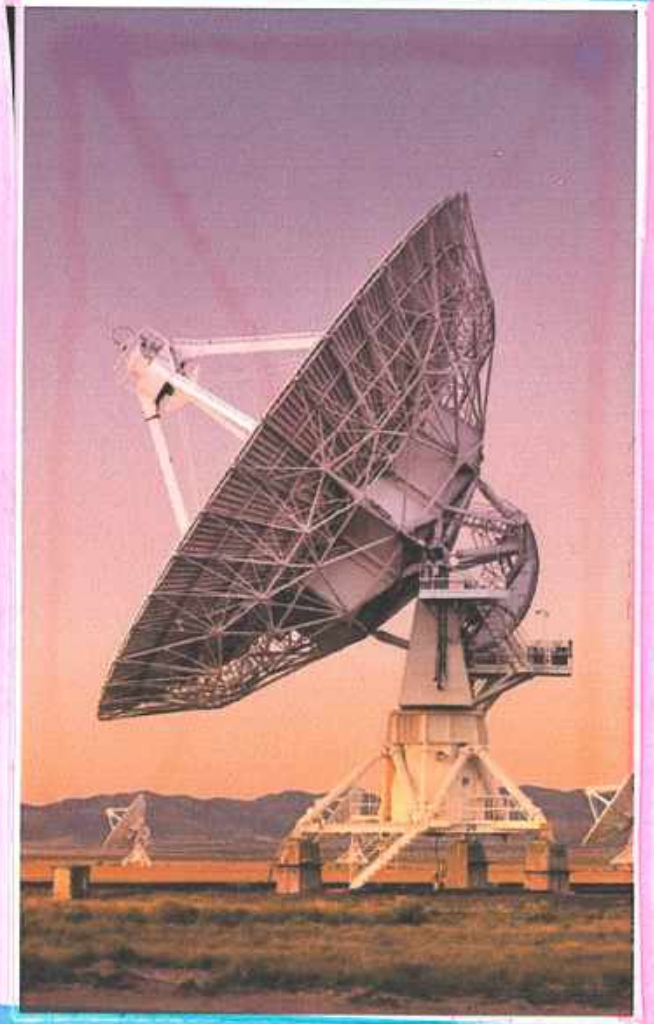
=> The are three Stages in which Satellites Communication process in work And those are:-

★ UPLINK
★ TRANSPONDER
★ DOWN LINK

UPLINK :- Let Consider an ~~exp~~ examples of Signal from a television In the the first stage. The Signal from the television board Cast on other Side of the Earth is first beamed up to Satellites from the Ground Station on the Earth. The process Known as Uplink.

- **Transponder :-** The Second Stage involves transponder Such as radio recivers, amplifiers and trans mitter. The transponder boost the incomming Signal and change its frequency so that the outgoing Signal Cane not altered.

- **Downlink :-** The final Stage involves a downlink in which the data is Sent to the another and of the recivers on the Earth.



Types of Satellite Communication

The Satellites Communication can be classified into three types which Includes the fallowing

(a) Fixed Satellites :-

The System aid in the data transmitting accross the would throughout Permanent point on the Surface of the Earth. Fixed Satellites Services (FSS) mean the use of specific radio frequencies by Satellites to deliver Communication fixed on the Earth.

(b.) Mobile Satellites :-

The System used in Connecting aircraft, Ships at remote areas Mobile Stattelite Services between mobile Earth station and one

or more space station or between space station used by this services by mean of one or more space station.

Reasearch Statellities:-

=> Reasearch Satellities or Scientific carrier Instrument to obtain data on magnetic field, space radiation earth and its atmosphere the seen or others start planet or any scientific Reasearch.

Depending upon thier measurement objectives, research satellities primarly fly in one of the orbits A near polar sun sy Leronous orbit to allow thier sensor to observe the entire Gobal at same solar time each day or a mid inclination.

CONCLUSION .....

- Satellities Communication System has become an essentail part of the world's tele communication infrastructure, serving billion of people with Internet telephone.

- Statellites service have shifted away from telephone to vedio and data delivery with television boardcasting and Internet services with latest application.

- There are some advantages of satellities communication that it is flexible and easy to put in circuit and user control the system.

Sudhanjani
External Sign