GENERATIONS OF COMPUTER

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First Generation (1940-1956)

- Used vacuum tubes for electronic signals.
- Vacuum tube is a fragile glass device which used filament as a source of electronics and could control and amplify signals.
- Few examples of first generation computer are;
  ENIAC
  EDVAC
  UNIVAC 1

Characteristics of 1st Generation

- Vacuume tube technology
- Used punched cards for input
- Instructions were written in machine language
- using only 0,1 for instructions
- They solved on problem at a time.
- They were fast computers of their time.
- Their computation time was in milli-seconds.

Drawbacks of 1st Generation

- Lot of heat is generated by using vacuum tubes.
- Required proper air-conditioning
- Vacuum tube filament has limited life hence are unreliable causing frequent hardware failure.
- Consumed lot of electricity
- Very costly
- Very huge in size so non portable

Second generation(1956-1963)

- Used transistors for electronic switching
- Transistors were proved to be better electronic device as compare to vacuum tubes
- They were more reliable, cheaper and smaller hence causing frequent hardware failure
- Some examples of second generation computers are
  - Honeywell 400
  - IBM 7030
  - CDC 1604

Characteristics of 2nd Generation

- Were smaller, cheaper and more reliable than first generation
- Worked ten times faster
- consumed less power
- Computation time was in micro seconds
- Used punched cards for input

Characteristics cont..

- Dissipated less heat but still air-conditioning was required
- Used magnetic tapes and disks for secondary storage
- Could store instructions in computer memory
- Used assembly language and were easier to program
- Generated lots of heat and required maintenance
- Occupied lots of physical space

Third Generation (1964-1975)

- The computers of third generation used Integrated Circuits (ICs) in place of transistors.
- A single IC has many transistors.
- ICs were small, less expensive to produce and were more reliable
- Third generation computer used small scale integration (SSI) and medium scale integration (MMI)
- The computation time of 3rd generation was in Nano-seconds.

Characteristics of 3rd Generations

- Used keyboards and monitors
- Had Operating systems that allowed different program to run at the same time
- Used high-level programming languages and hence programming became easier
- Dissipated less heat hence required no or minimum airconditioning
- For storage magnetic tapes and disks were used.

Characteristics cont..

- More powerful
- Faster
- Less expensive
- More reliable
- Smaller in size
- Consumed lesser electricity
- Generate less heat

Examples of 3rd generation

- IBM 360/370
- PDP-11
- CDC 6600

Fourth Generation (1975-1989)

- Used IC chips with large scale integration (LSI) and very large scale integration (VLSI)
- Thousands of small transistors were integrated on a small chip
- Semiconductor memory was replacedby magnetic corememory
- Computation time was in pico-seconds
- The concept of internet emerged
- GUI and pointing devices like mouse were introduced

Characteristics of 4th Generation

- Fourth generation computers were small and less expensive
- No air-conditioning wasrequired
- Were more reliable and less prone to hardware failure
- Had faster and larger primary and secondary storage
- Used high-level programming languages
- Application for office and personal use were introduced
- Computers became more affordable by individuals

Examples

- IBM PC
- Apple II
- TRS-80
- VAX 9000

Fifth Generation (1989-present)

- Use IC chips with Ultra large scale integration
- Speed of micro-processorincreased
- Large primary and secondary storage
- Optical disks wereintroduced
- Email service and www (world wide web) were introduced

Characteristics of 5th Generation

- Air conditioning was required for more powerful systems
- Smaller computers of fifth generation like desktops, notebooks, laptops and tablets didn't required air-conditioning
- Has more user friendly interface
- Has more applications both for personal and official use

Examples

- Pentium PCs
- SUN workstations
- IBM notebooks

*Cloud Computing

* Cloud computing, or something being in the cloud, is an expression used to describe a variety of different types of computing concepts that involve a large number of computers connected through a real-time communication network such as the Internet.
* Cloud providers claim that computing costs reduce.
* Device and location independence enable users to access systems using a web browser regardless of their location or what device they use.
* Virtualization technology allows sharing of servers and storage devices and increased utilization.

Google glass

Google glass

- http://www.youtube.com/watch?v=v1uyQZNg2vE&feature=c4-overview-vl&list=PLyR4fvjGTgA65BkrjbVHAWT9IuPIExw5_

Galaxy Gear Smartwatch

Sixth Sense by Pranav Mistry

- http://www.youtube.com/watch?v=YrtANPtnhyg

Bibliography

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summary

Generations	Basic component	Input	Language
1st generation	Vacuum tubes	Punched cards	Machine language
2nd generation	transistors	Punched cards	Assembly language,FORTRAN etc
3rd generation	IC chips with SSI and MSI	keyboard	COBOL,BASIC
4th generation	IC chips with LSI and VLSI	Keyboard and mouse	C,C++,SQL
5th generation	IC chips with ULSI	Keyboard, mouse and advance input devices	Visual Basic,JAVA,.NET etc