SECOND GENERATION COMPUTERS

During the period of 1956 to 1963 second generation of computers were developed. The second generation computers emerged with development of Transistors. The transistor was invented in 1947 by three scientists J. Bardeen, H.W. Brattain and W. Shockley. A transistor is a small device made up of semiconductor material like germanium and silicon. Even though the Transistor were developed in 1947 but was not widely used until the end of 50s. The transistor made the second generation computers faster, smaller, cheaper, more energy-efficient and more reliable than their first-generation computers. Even though the transistor used in the computer generated enormous amount of heat which ultimately would lead to the damage of the computers but was far better than vacuum tubes. Second generation computers used the low level language i.e. machine level language and assembly language which made the programmers easier to specify the instructions. Later on High level language programming were introduced such as COBOL and FORTRAN. Magnetic core was used as primary storage. Second generation computer has faster input /output devices which thus brought improvement in the computer.

CHARACTERISTICS

1) Transistors were used in place of vacuum tubes.
2) Second generation computers were smaller in comparison with the first generation computers.
3) They were faster in comparison with the first generation computers.
4) They generated less heat and were less prone to failure.
5) They took comparatively less computational time.
6) Assembly language was used for programming.
7) Second generation computers has faster input/output devices.

IBM 7000, NCR 304, IBM 650, IBM 1401, ATLAS and Mark III are the examples of second generation computers.

Transistors Used in Computers; IBM 7000 Series

TheÂ IBM 7000 seriesÂ was developed throughout the 1950s and early 1960s. They were labeled as computers for â€œlarge scale scientific and technological applications.â€ These computers were much more compatible compared to the IBM 700 series because of their use of transistors. They had higher input/ output speed, using disk and tape. Languages supported by the computersâ€™ operating systems included FORTRAN, COBOL, SORT/MERGE, etc.

Other Transistorized Computers; CDC Computers

Designed by Seymour Cray and others at Control Data Corporation, theÂ CDC 1604Â is credited as one of the first successfully transistorized computers. In 1960, the first 1604 was delivered to the US Navy, and by 1964 more than fifty were built. They used 48-bit words of magnetic core memory, and each 48-bit contained 24-bit instructions.Â Â In 1604, theÂ CDC 3000 seriesÂ succeeded the 1604. All second generation CDC computers used core memory

UNIVAC 1107

The new UNIVAC series began withÂ UNIVAC 1107Â made my Sperry Rand in 1962. The second generation computer UNIVAC was still quite massive, but very quiet. Its central processor was 36-bitÂ architecture, which was able

to perform arithmetic equations in one 4- microsecond cycle time. It printed cards 600 lines per minute but was known for jamming. All executions were started by reading punch cards. Memory access time was eight microseconds per word. Soon cameÂ theÂ UNIVAC 1108, which would mark the start of the third generation.