The an open architecture so that it could

The desk-sized Alto, and its commercialized descendant the Xerox Star, were the first GUI-based computers. In 1981, IBM, then into manufacturing high-end mainframes, made a foray into the PC industry. Despite its weaknesses, the IBM PC was based on an open architecture so that it could grow into the future, and this proved to be a critical success factor. This strategy, combined with IBM's huge influence and the release of Lotus 1-2-3 a year later, made the PC and its descendants to dominate the computing industry.

In 1982, a year after the huge success of the VIC-20, Commodore introduced the Commodore 64. This was the machine that brought computers to the masses. The market for PC clones was created by Compaq through its portable offerings. Compaq's portable almost single handedly created the PC clone market. Columbia Data Products just preceded Compaq that year with the first true IBM PC clone, but they didn't survive for long. In January 1984, the introduction of Apple's Macintosh computer, with its GUI, generated even more excitement than the IBM PC had three years earlier.

Apple's Research and Development (R&D) was inspired by the critical ideas developed at Xerox PARC. However Apple programmers also added many of their own ideas to create the final polished Macintosh product. It was this polished product that changed the way people used computers. The Macintosh (Mac) featured a small built-in high-resolution monochrome display, the Macintosh operating system with its GUI, and a single button mouse. Building on the strength of the PC (1981) and PC/XT (1983), the IBM PC/ AT was a major increase in performance and storage capacity.

Although it looked like the original PC, Intel's fast 80286 processor running at 6 MHz, combined with 16-bit bus architecture, made the AT several times faster than the original PC. AT systems also came with much more RAM, usually 512 or 640 KB, and new high-density 1. 2 MB floppy disk drives (FDD). In 1985, Commodore through its Amiga introduced the world to multimedia. Unfortunately, the Amiga was so far ahead of its time that almost nobody-including Commodore-really understood what it was. Today, it is obvious that the Amiga was the first multimedia computer, but in those days it was viewed largely as a games machine because few people grasped the importance of advanced graphics and sound combined with a multitasking operating system with a graphical user interface.

In the early 1990's, the availability of high-powered 3D graphics workstations from vendors such as Silicon Graphics allowed all sorts of interesting uses for interactive 3D graphics to be developed. Computer Aided Design (CAD) and 3D animations for special effects were two relatively obvious uses, but a more interesting and exciting use was the concept of Virtual Reality (VR). Virtual reality allowed a user to be placed within a virtual world, which he or she could explore from an arbitrary point of view.

These were some of the pioneering developments that shaped the world of computing as it stands today. The key points are enumerated in the following sections: First generation: Vacuum tubes: a. This generation spanned the years 1946 – 1958 b. The development of the first computer took place in the year 1946, named ENIAC, which was as large as a room and contained 18, 000 vacuum tubes.

c. This was replaced in the year 1950 by UNIVAC, which was a significant improvement over its predecessor. d. This was followed by the era of Mainframes. Second generation: Transistors: a. This generation spanned the years 1958 – 1964 b. The invention of transistors brought about a revolution in the electronic industry and paved the way for significant advancements in the field of Analog Electronics. Third generation: Integrated circuits: a.

This generation spanned the years 1964 – 1990 b. This era witnessed the development of the first IC using multiple transistors on a single chip. c. This led to the development of IBM 360 that was the first mainframe to use Integrated Circuits (IC). d.

This was followed by the development of the first minicomputer DEC PDP-11 and the first microcomputer Altair 8800. e. The most significant development in this era was the introduction of the PC by IBM, which brought the computing power within reach of Medium/Small Organizations and the common man. f. This period witnessed the transition from the mainframe era through the mini frame era and finally to the era of Personal Computing. Fourth generation and the future: a.

This generation started in the year 1990 b. This era brought' forward new technologies like multimedia, the integration of voice, video and data, video conferencing technologies and saw the explosion of the internet and IT which broke down distance barriers and brought the world closer than ever before. c. This period also brought about focus on the end user computing and enabled the development of distributed computing models.