Personal Computers

- Computers cheap enough for individual use – a major departure from previous computers.

- Many new companies – Apple, Commodore, Sun etc.

- Apple Computers.

- IBM PC and clones.

- Workstations.

History of the Personal Computer

- The history of personal computers began in the 1970s.

- A personal computer is one intended for individual use, as opposed to a mainframe computer or a time sharing system.

- After the development of the microprocessor, individual personal computers were low enough in cost that they eventually became affordable consumer goods.

- Early personal computers – generally called microcomputers – were sold often in electronic kit form and in limited numbers, and were of interest mostly to hobbyists and technicians.

History of the Personal Computer

- Some Early Pioneers
  - Xerox Alto and Star – not a commercial success.
    - The Xerox Alto, developed at Xerox PARC in 1973, was the first computer to use a mouse, the desktop metaphor, and a graphical user interface.
    - In 1981, Xerox Corporation introduced the Xerox Star workstation, including a bit-mapped display, a windows-based graphical user interface, icons, folders, mouse, Ethernet networking, file servers, print servers and e-mail.
  - The Altair from 1975 was sold in kit form, although a relatively complex one consisting of four circuit boards and many parts; sold thousands of machines.

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Xerox Alto

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Altair 8800

http://en.wikipedia.org/wiki/File:Altair_8800_Computer.jpg

History of the Personal Computer

- By 1976 there were several firms racing to introduce the first truly successful commercial personal computers.

- Three machines, the Apple II, PET 2001 and TRS-80 were all released in 1977, eventually selling millions of machines.

- Byte magazine later referred to their launch as the "1977 Trinity".

History of the Personal Computer

- Commodore PET (short for Personal Electronic Transactor) was built around MOS 6502 processor.

- It was essentially a single-board computer with a new display chip (the MOS 6545) driving a small built-in monochrome monitor with 40×25 character graphics.

- The processor card, keyboard, monitor and cassette drive were all mounted in a single metal case.

Commodore PET 2001

http://en.wikipedia.org/wiki/File:Commodore_2001_Series-IMG_0448b.jpg

History of the Personal Computer

- Apple Computers announced the Apple II as a complete computer in 1977.

- It had color graphics, a full QWERTY keyboard, and internal slots for expansion, which were mounted in a high quality streamlined plastic case.

- The monitor and I/O devices were sold separately.

- More than 4 million Apple IIs were shipped by the end of its production in 1993.

Apple II

History of the Personal Computer

- Tandy Corporation introduced the TRS-80, retroactively known as the Model I as improved models were introduced.

- The Model I used a Zilog Z80 processor clocked at 1.77 MHz.

- The basic model originally shipped with 4 kB of RAM, and later 16 kB.

- Its other strong features were its full stroke QWERTY keyboard, small size, well written Floating BASIC and inclusion of a monitor and tape deck

TRS-80 Model - I

http://en.wikipedia.org/wiki/File:TRS-80_Model_I_-_Rechnermuseum_Cropped.jpg

History of the Personal Computer

- Success of the trinity machines led to the development of low cost home computers by many computers.

- Prominent models include:

  - Atari 400/800

  - TI-99

  - VIC-20 and Commodore 64 (The best selling computer of all time – 17 million units)

  - BBC Micro

- Fierce price wars shook the market and most players exited the market

Commodore 64

http://en.wikipedia.org/wiki/File:Commodore-64-Computer.jpg

History of the Personal Computer

- IBM responded to the success of the Apple II with the IBM PC, released in August, 1981.

- It was based on an open, card-based architecture, which allowed third parties to develop for it.

- It used the Intel 8088 CPU running at 4.77 MHz, containing 29,000 transistors.

- The IBM PC typically came with PC-DOS.

IBM PC 5150

http://en.wikipedia.org/wiki/File:Ibm_pc_5150.jpg

History of the Personal Computer

- PC-DOS was sold as MS-DOS by Microsoft without any hardware.

- The IBM PC was based on relatively standard integrated circuits, and the basic card-slot design was not patented, the key portion of that hardware was actually the BIOS software embedded in read-only memory.

- This critical element got reverse engineered, and that opened the floodgates to the market for IBM PC imitators, which were dubbed "PC clones".
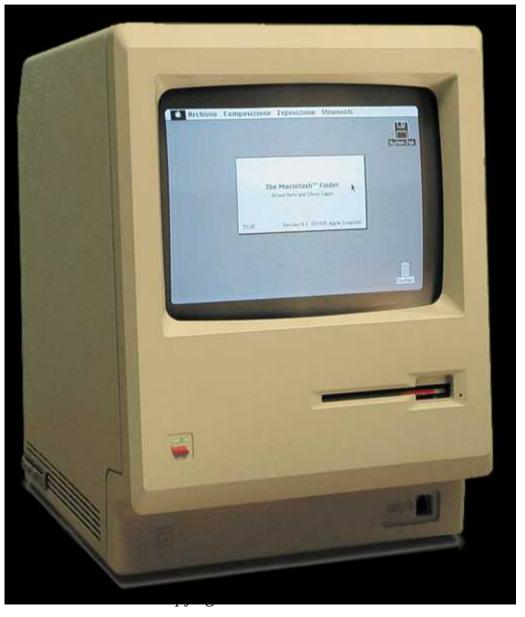
History of the Personal Computer

- IBM's biggest role in the evolution of the personal computer was to establish the de facto standard for hardware architecture amongst a wide range of manufacturers.

- IBM's pricing was undercut to the point where IBM was no longer the significant force in development, leaving only the PC standard they had established.

- Emerging as the dominant force was Microsoft that provided the operating system and utilities to all PC's across the board, whether authentic IBM machines or the PC clones.

History of the Personal Computer

- In 1983 Apple Computer introduced the first mass-marketed microcomputer with a graphical user interface, the Lisa.

  - Not successful due to its high cost ($10,000)

- In 1984 Apple launched the Macintosh.

- The Mac was the first successful mouse-driven computer with a graphical user interface or 'WIMP' (Windows, Icons, Menus, and Pointers).

- Success particularly due to the introduction of desktop publishing

Apple Macintosh

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Thank You.