Lecture 2: Hardware, Continued
Wednesday, 27 September 2006

David J. Malan
malan@post.harvard.edu
Agenda

- Secondary Storage
  - Floppy Disks
  - Hard Disks (PATA and SATA)
  - CDs
  - DVDs
- Virtual Memory
- Expansion Buses and Cards
  - AGP
  - ISA
  - PCI
  - PCI Express
  - SCSI
- Ports
- I/O Devices
- Peripherals
- How to Shop for a Computer
- History
Secondary Storage

Floppy Disks

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Secondary Storage

Hard Disks

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Hard Disks

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Hard Disks

Image from http://www.winntmag.com/Articles/Index.cfm?ArticleID=8276.
Secondary Storage

CD-ROM Discs

Secondary Storage

DVD-ROM Discs

Secondary Storage

Recordable and Rewriteable Discs

Expansion Buses and Cards

Ports

Images adapted from http://www.masterflex.com/reference/pwrcords.asp;
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<table>
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**I/O Devices**
How to Shop for a Computer
When the Mark I was completed in 1943, it had a number of specific functions: addition, subtraction, multiplication and division plus logarithms and trigonometric functions and had an accuracy of 23 decimal place numbers. It measured 51 feet long, 8 feet high and 2 feet wide and weighed over 5 tons. It was a relay computer, like Zuse’s, with output on an electric typewriter. Speed was about three calculations per second. The Mark I was used for both industrial and military purposes. It was even used in a Concordance program: providing an alphabetical list of all words of the Bible plus a statement of places and citation of the texts. That program did not work. Mark I served until 1959! Today, the Mark I has been split up and was divided between Harvard (Science Center), the Smithsonian Institute and IBM (Historical Collection).” Image and text from http://www.digidome.nl/howard_h__aiken.htm, copyright © DIGIDOME.
“Grace Murray Hopper, working in a temporary World War I building at Harvard University on the Mark II computer, found the first computer bug beaten to death in the jaws of a relay. She glued it into the logbook of the computer and thereafter when the machine stops (frequently) they tell Howard Aiken that they are “debugging” the computer. The very first bug still exists in the National Museum of American History of the Smithsonian Institution. Edison had used the word bug and the concept of debugging previously but this was probably the first verification that the concept applied to computers.” Image and text from http://www.lewhill.com/firstcomputerbug.html, copyright © IEEE, Inc.
History

1975

Image from http://www.computermuseum.20m.com/popelectronics.htm.
History

1975

Photo courtesy of Microsoft Archives.

History

1977

Steve Wozniak e Steve Jobs con la scheda dell'Apple I

Image from http://www2.polito.it/didattica/polymath/ICT/Htmls/Studenti/Università/Tesi-DAlessandro/Cap2.htm
History

1977

Image from http://www.spiegel.de/wissenschaft/mensch/0,1518,grossbild-141673-164435,00.html.
### History

#### 1979

![Spreadsheet Image](http://www.hodgy.net/computer_history/page_2/page_2%20spreadsheets.htm)

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Image from [http://www.hodgy.net/computer_history/page_2/page_2%20spreadsheets.htm](http://www.hodgy.net/computer_history/page_2/page_2%20spreadsheets.htm)
History

1981

History

1984

Introducing Macintosh. For the rest of us.

In the olden days, before 1984, not very many people used computers for a very good reason. There was a particularly bright day in Cupertino, California, when the gold Rush for personal computers was about to start. So many new machines flooded the market. Most were powered by a simple chip called the Z80. They were expensive, not very flexible, and not very friendly.

What we needed was a personal computer that was easy to use, inexpensive, and could do it all. That's what the Macintosh brought to the world. It had a simple, easy-to-use interface. People could learn to use it in a few minutes. It was revolutionary.

We imagined a computer that was so easy to use, so intuitive, that anyone could learn to use it in minutes. We called it the Macintosh. It was introduced to the world on this day in 1984. It changed the way we interact with computers forever.

History

Operating Systems

Source of image unknown.
History

Pirates of Silicon Valley

“The revolution came when we weren’t looking. It happened in a garage. In a dorm room. In countless hours of effort, imagining and intrigue. Apple® co-founder Steve Jobs and Microsoft® co-founder Bill Gates were changing the way the world works, lives and communicates.

The event-packed saga of the quirky visionaries who jump-started the future unfolds with exhilarating, cutting-edge style in Pirates of Silicon Valley. Noah Wyle (ER) portrays Jobs and Anthony Michael Hall (The Breakfast Club) portrays Gates in this chronicle of the fierce and often personal computer empire. ‘The story is almost Shakespearean—it’s a tale of lust, greed, ambition, love and hate,’ writer/director Martyn Burke reflects. And it’s a success story unlike any other.”
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