Acknowledgments
Thanks to the following web site for the images used in this presentation:

- Wikipedia
  - http://microsoft.toddverbeek.com
  - http://www.webopedia.com
  - http://www.engin.umd.umich.edu/
  - http://www.dell.com
  - http://www.intel.com
  - http://www.apple.com
  - http://www.ibm.com
  - http://homepages.feis.herts.ac.uk/~msc_ice/unit2/
  - http://www.howstuffworks.com

Computer Layers
Hardware
BIOS
Operating System
Software
Programming languages
Computers come in different shapes and sizes, from small laptops (notebooks), desktops to mainframe computers. They all share however the same internal architecture!
The motherboard: backbone of the computer

Slot for memory: RAM
Slot for CPU
Hard drive connectors
Input/Output: Keyboard, Mouse...
Extension cards: Video, sound, internet...

The Central Process Unit (CPU): The “brain” of the computer

CPUs are getting smaller, and can include more than one "core" (or processors).
CPU’s get hot, as their internal components dissipate heat: it is important to add a heat sink and fans to keep them cool.

Memory: Working Space

ROM - Read Only Memory
- PROM - Programmable Read Only Memory
- EPROM - Erasable Programmable Read Only Memory
- EEPROM - Electrically Erasable Programmable Read Only Memory
RAM - Random Access Memory
- SRAM - Static RAM
- DRAM - Dynamic RAM
CACHE - (L1, L2, L3)
Storage

Hard drive
Floppy disk
CD or DVD
USB key

Communicating with a computer

Screen
Keyboard
Mouse
Some Input/Output Interfaces

Video cards

Sound card

Ethernet card

Hardware communication: buses

The memory bus:

- a 16-bit bus

Communication between the CPU and the RAM is defined by:
- the CPU speed
- the RAM speed
- the number of bits transferred per cycle

Other buses:
- USB, Firewire, PCI Express, …