

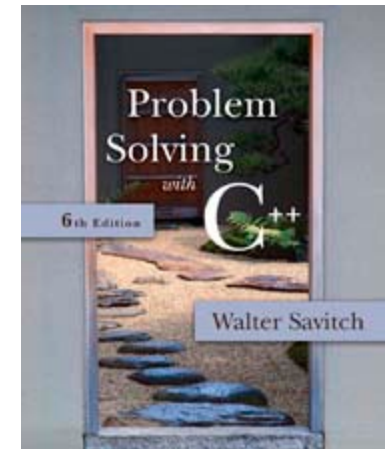
APS105: Lecture 2

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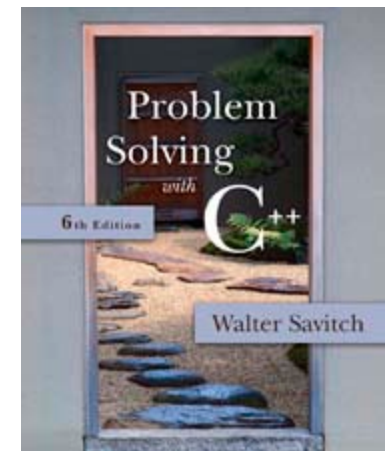
<http://ccnet3.utoronto.ca/20079/aps105h1f/>

Acknowledgement: These slides are a modified version of the text book slides as supplied by Addison Wesley



Chapter 1

Introduction to Computers and C++ Programming



Overview

1.1 Computer Systems

1.2 Programming and Problem Solving

1.3 Introduction to C++

1.4 Testing and Debugging

Computer Systems

- A computer program is...
 - A set of instructions for a computer to follow
- Computer software is ...
 - The collection of programs used by a computer
 - Includes:
 - Editors
 - Translators
 - System Managers

Secondary Memory

- Main memory stores instructions and data while a program is running.
- Secondary memory
 - Stores instructions and data between sessions
 - A file stores data or instructions in secondary memory

Secondary Memory Media

- A computer might have any of these types of secondary memory
 - Hard disk
 - Fast
 - Fixed in the computer and not normally removed
 - Floppy disk
 - Slow
 - Easily shared with other computers
 - Compact disk
 - Slower than hard disks
 - Easily shared with other computers
 - Can be read only or re-writable

Memory Access

- Random Access
 - Usually called RAM
 - Computer can directly access any memory location
- Sequential Access
 - Data is generally found by searching through other items first
 - More common in secondary memory



The Processor

- Typically called the CPU
 - Central Processing Unit
 - Follows program instructions
 - Typical capabilities of CPU include:

add

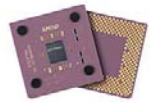
subtract

multiply

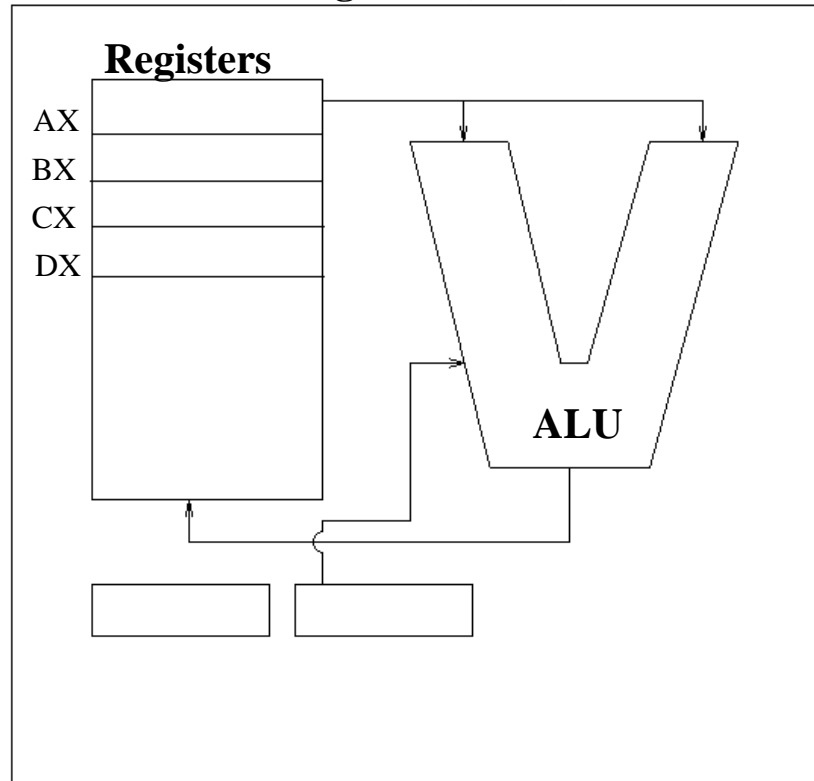
divide

move data from location to location

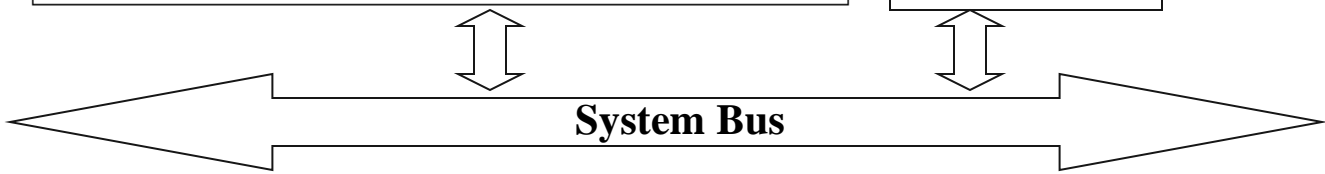
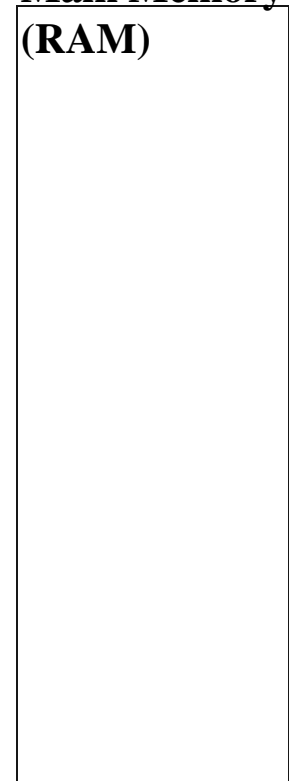
The Processor



Central Processing Unit (CPU)



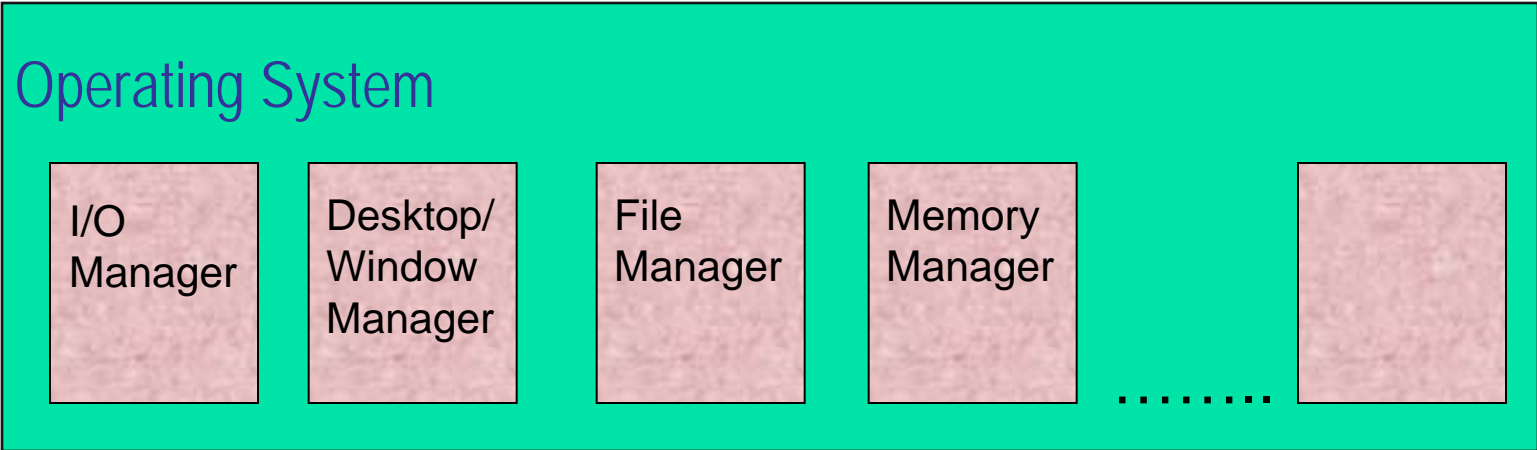
Main Memory (RAM)



Computer Software

- The operating system
 - Allows us to communicate with the computer
 - Is a program
 - Allocates the computer's resources
 - Responds to user requests to run other programs
- Common operating systems include...
 - UNIX Linux DOS
 - Windows Macintosh VMS

Operating System



Operating System

