

A.I.S. Class 24: Outline

- Learning Objectives for Chapter 3
- Hardware
- Software
- Systems Configuration
- Group Work for Chapter 3
- XML & XBRL

Learning Objectives for Chapter 3

- After studying this chapter you should be able to:
 - ◆ describe various information technologies used for data input
 - ◆ explain in some technical detail the components of a computer system
 - ◆ explain the technologies used to process data
 - ◆ describe alternative computer output technologies
 - ◆ distinguish between systems software and applications software

Learning Objectives for Chapter 3

- After studying this chapter you should be able to:
 - ◆ describe the categories and functions of systems software
 - ◆ describe the categories and functions of applications software
 - ◆ briefly describe the issues surrounding systems configurations.

Hardware

- Input Technology
- Processor Technology
- Storage Technology
- Output Technology

Input Devices

- Keying devices (on-line or off-line)
- Mouse (trackball, trackpad, trackpoint)
- Light pens
- Touch screens
- Audio & video input
- Bar code scanners, OCR & MICR
- POS devices
- Scanners

Processor Technology

- CPU (registers, control unit, ALU)
- Clock
- Cache memory
- Data bus, address bus, control bus
- ISA, PCI, USB, FireWire, Blue Tooth
- Processors
 - ◆ 8088, 8086, 80186, 80286, 80386, 80486 DX & SX
 - ◆ Pentium, Pentium Pro, Pentium MMX, Pentium II, Pentium II Xeon, Celeron, Pentium III, Pentium 4 (3.4 GHz)
 - ◆ AMD Athlon XP, AMD Duron, Motorola PowerPC G4 (RISC)

Storage Technology

- ROM, RAM, DRAM, SDRAM, ECC, RDRAM, DDR SDRAM, SRAM, Cache
- Magnetic tape
- Hard disks, floppy disks
- EIDE (Ultra ATA), Ultra2 SCSI
- Iomega ZIP drives
- USB drives (micro, pen, flash drives)
- CD-ROM, CD-R, CD-RW
- DVD, DVD-R/W, DVD+RW, DVD-RAM

Output Technology

■ Printers

- ◆ Dot matrix
- ◆ Ink jet
- ◆ Laser

■ Video display

- ◆ PCI v AGP
- ◆ VGA (640 x 480)
- ◆ SVGA (800 x 600)
- ◆ XGA (1024 x 768) etc.
- ◆ TFT

■ Sound cards, MIDI interfaces

Software

- Systems Software
- Programming Languages
- Application Software
 - ★ General Purpose
 - ★ Special Purpose

Systems Software

■ Operating systems

- ★ multitasking, multiprogramming, multiprocessing
- ★ DOS, WINDOWS 3.1, 95, 98, ME, NT, 2000, XP, OS/2 Warp 4, Mac OS X, Unix, Linux
- ★ GUIs (as opposed to CUI)

■ Utilities (e.g., virus-scans, disk formatters)

■ Language translators

- ★ assemblers, compilers, interpreters

Programming Languages

- First, second, third, fourth generation
- Object-oriented programming languages (JAVA, C++)
 - ★ encapsulation
 - ★ polymorphism
 - ★ inheritance

Application Software

- General purpose
 - ★ word processing
 - ★ spreadsheets
 - ★ presentation graphics
 - ★ flowcharting
 - ★ databases
 - ★ communication
 - ★ organizers

Application Software

■ Special purpose

★ low-end accounting packages

- ◆ Quicken, Quickbooks Pro, Microsoft Money, PEACHTREE

★ mid-range packages

- ◆ Great Plains Dynamics (now Microsoft), ACCPAC Pro, Platinum

★ high-end packages

- ◆ SAP, Oracle, PeopleSoft, JD Edwards (now PeopleSoft), BAAN (now SSA Global)

Systems Configurations

- Supercomputers
- Mainframes
- Minicomputers
- Servers
- Workstations
- Desktops
- Laptops (notebooks)
- Palmtops (PDAs)

Group Work for Chapter 3

- Discussion Questions
- Problems and Exercises 3

XML & XBRL

■ SGML

- ★ HTML - format
- ★ XML - content
 - ◆ XBRL – financial community

■ XBRL

- ★ Fast, accurate searches
- ★ Drill-down
- ★ Less data re-entry
- ★ User choice for disclosure

■ Microsoft's .NET initiative

XML Documents

- Hierarchical
- Self-describing
- Directly usable over the Internet
- Do not replace HTML
- Standards promulgated by W3C
- Convert to HTML, spreadsheet, etc. via XSLT
- XML Schema – a new standard for defining consistent structure

XBRL

- XML-based taxonomy
- Common business semantics
- Variable output format
- Currently:
 - ★ Financial reporting taxonomies
 - ★ General ledger taxonomies
- Promulgated by XBRL International, created by AICPA, www.XBRL.org
- Specification 2.1 issued December 2003 (revised November 2004)