CS105:
Computing Fundamentals I

Prof. Harry Porter

Syllabus (1)

Bookmark the class website / syllabus

(This URL is on HW 1.)

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web.cecs.pdx.edu/~harry/cs105/syllabus.html
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Weekly Homeworks

2 Midterm Exams and a Final Exam

Cancelled Class (Last Tuesday in January)

Syllabus (2)

Goals for this course

Gain general "computer literacy".

Learn basic concepts.

Get familiar with the most important

professional applications:

Microsoft Word – for creating documents

Microsoft Excel – for creating spreadsheets

Microsoft PowerPoint – presentations like this

Microsoft Access – for maintaining "databases"

Syllabus (3)

A computer is required.

(There are computers in the PSU Library)

- Mac or Windows
- Microsoft Office

Word, Excel, PowerPoint, …

- Need ability to print.

Get an "Odin" account at PSU.

Add yourself to the class mailing list.

Syllabus (4)

Textbooks

Computing Essentials 2008

We'll cover all of this book.

Read chapters 1 and 2 for next week.

Microsoft Office 2007

1400 pages; We'll cover a lot of it.

Windows XP

For students who use Windows XP.

Syllabus (5)

Homework #1

- Read chapters 1 and 2, *Computing Essentials*

  Take online "quizzes" and e-mail me results

- Read chapter 1 from *Office 2007*

- Create a simple document

  Print it out and hand it in.

- The full homework will be handed out today

  (or download from the class website)

Syllabus (6)

Grading (Tentative)

25% - Homeworks

20% - Midterm Exam #1

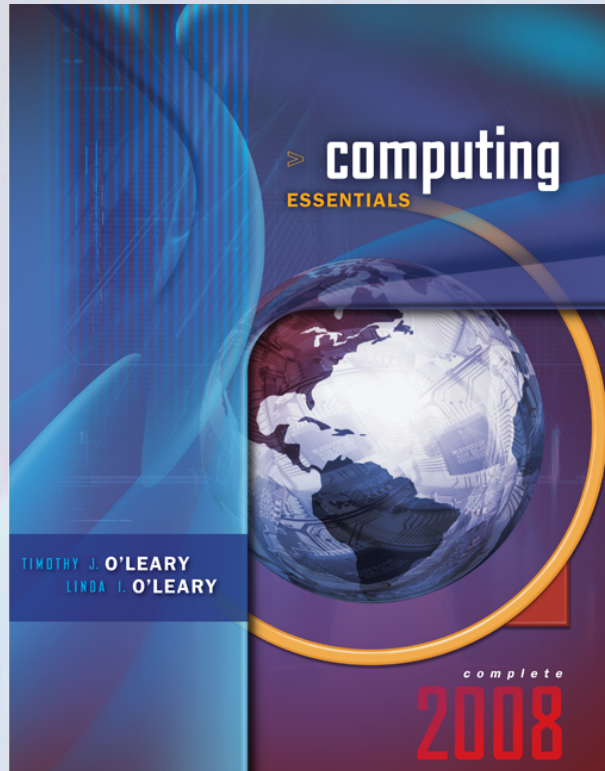20% - Midterm Exam #2

30% - Final

5% - Attendance

Syllabus (7)

To succeed in this class:

- Read all assigned material *before* it is discussed.
- Attend all classes.

   Attendance will be counted.

- Don't do other stuff during class time.
- Plan to spend about 6 hours / week

   (not including class time)

Chapter 1

Information Technology, The Internet, and You

Competencies (Page 1 of 2)

- **Explain the five parts of an information system: people, procedures, software, hardware, and data.**

- **Distinguish between system software and application software.**

- **Discuss the three kinds of system software programs.**

- **Distinguish between basic and specialized application software.**

- **Identify the four types of computers and the four type of microcomputers.**

Competencies (Page 2 of 2)

- **Describe the different types of computer hardware including the system unit, input, output, storage, and communication devices.**

- **Define data and describe document, worksheet, database, and presentation files.**

- **Explain computer connectivity, the wireless revolution, and the Internet.**

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Introduction

- **Computer competency** refers to acquiring computer-related skills
- Microcomputers are common tools in all areas of life
- New forms of learning have developed
- New ways to communicate, to find people with similar interests, and to buy goods are available.

Five Parts of an Information System

1. People
2. Procedures
3. Software

4. Hardware
5. Data

People
are end users who use computers to make themselves more productive

Software
provides step-by-step instructions for computer hardware

Procedures
specify rules or guidelines for computer operations

Hardware
includes keyboard, mouse, monitor, system unit, and other devices

Data
consists of unprocessed facts including text, numbers, images, and sounds

Connectivity
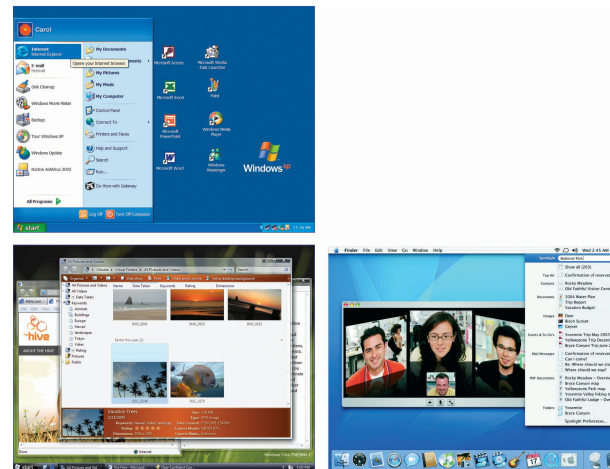allows computers to share information and to connect to the Internet

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People

- **Most important part of any system**
- **Contact is …**
  - **Direct**
  - **Indirect**
- **Computer uses**
  - **Business & Entertainment**
  - **Education & Medicine**

Software

- **AKA Programs**
- **Two major kinds of software**
  - **System Software**
  - **Application Software**

System Software

- **A collection of programs-not a single program**
- **Enables the application software to interact with the hardware**
- **"Background software" that helps the computer manage its own resources**

Return

Application Software

- **End-user software**

- **Two major categories**
  - **Basic Application** **or General purpose**
  - **Specialized applications**

Hardware - Types of Computers

- **Supercomputers**
- **Mainframe computers**
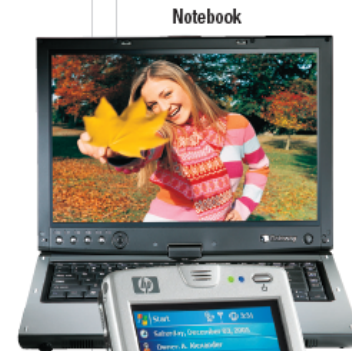- **Minicomputers (also known as mid-range computers)**
- **Microcomputers**

Microcomputer Types

- **Desktop**

- **Notebook or laptop**

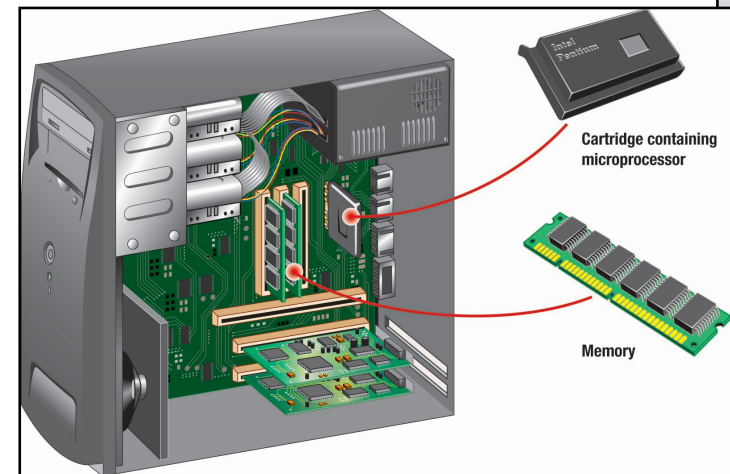- **Tablet PC**

- **Handheld**

Desktop

Notebook

Tablet PC
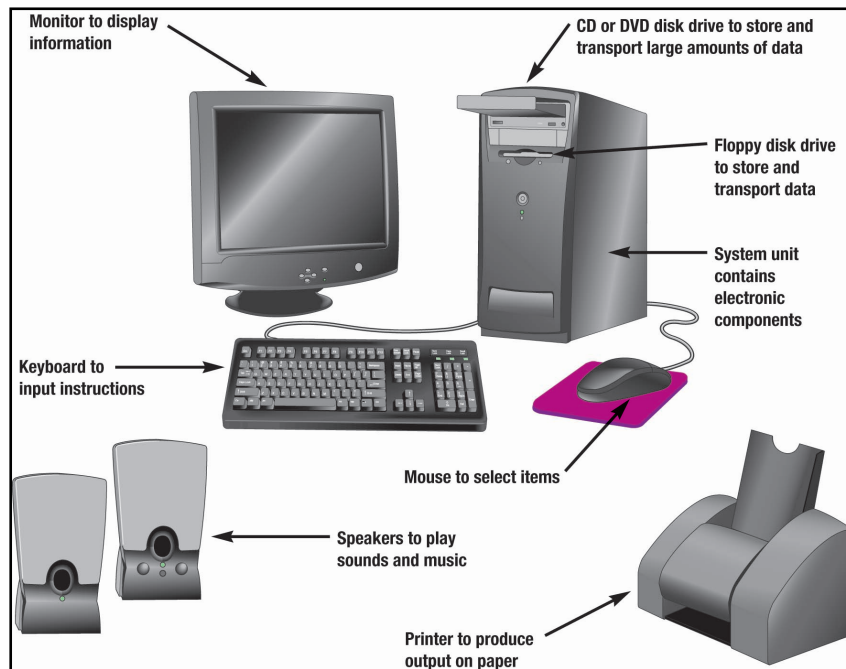
Handheld

Desktop Computers

- **Desktop computers** are small enough to fit on top of or alongside a desk yet are too big to carry around

Monitor to display information

CD or DVD disk drive to store and transport large amounts of data

Floppy disk drive to store and transport data

System unit contains electronic components

Keyboard to input instructions

Mouse to select items

Speakers to play sounds and music

Printer to produce output on paper

Cartridge containing microprocessor

Memory

Notebook or Laptop Computers

- **Notebook computers**, also known as **laptop computers**, are portable, lightweight, and fit into most briefcases

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Tablet PC

- **A tablet PC is a type of notebook computer that accepts your handwriting. This input is digitized and converted to standard text that can be further processed by programs such as a word processor.**
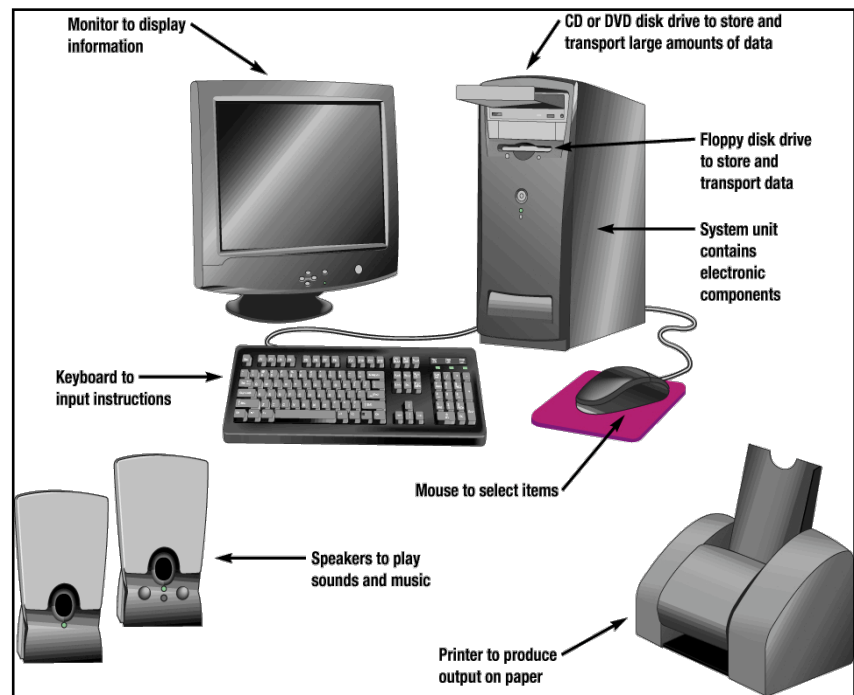

Tablet PC

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Handheld

- **Are the smallest and are also known as palm computers. These systems typically combine pen input, writing recognition, personal organizational tools, and communications capabilities.**

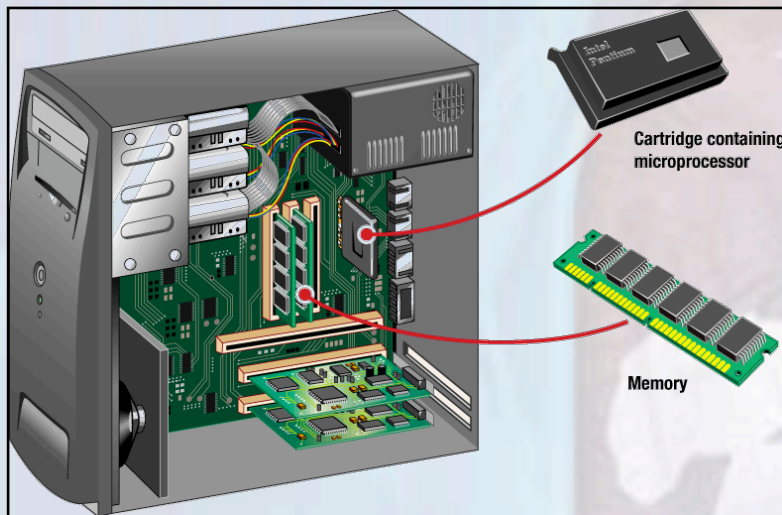- **Personal digital assistants (PDA's) are the most widely used handheld computer.**

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Microcomputer Hardware

- **Four basic categories of equipment:**
  - **System Unit**
  - **Input/Output**
  - **Secondary Storage**
  - **Communication**

Monitor to display information

CD or DVD disk drive to store and transport large amounts of data

Floppy disk drive to store and transport data

System unit contains electronic components

Keyboard to input instructions

Mouse to select items

Speakers to play sounds and music

Printer to produce output on paper

System Unit

Cartridge containing microprocessor

Memory

- **Two important components**
  - **Microprocessor**
  - **Memory**

Input/Output Devices

- **Common input devices are the keyboard and the mouse**
- **Common output devices are printers and monitors**

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Secondary Storage

- Unlike memory, secondary storage holds data and programs even if electrical power is not available
- The most important types of secondary media are **floppy**, **hard**, and **optical disks**

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Communications

- **Communication Devices provide microcomputers with the ability to communicate with other computer systems across the globe**

- **The modem is the most widely used communication device**

- **Modems modify telephone communications into a form that can be processed by a computer**

- **Modems also modify computer output into a form that can be transmitted across standard telephone lines**

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Data

- **Raw, unprocessed facts**

- **Processed data becomes information**

- **Stored electronically in files**
  - **Document files**
  - **Worksheet files**
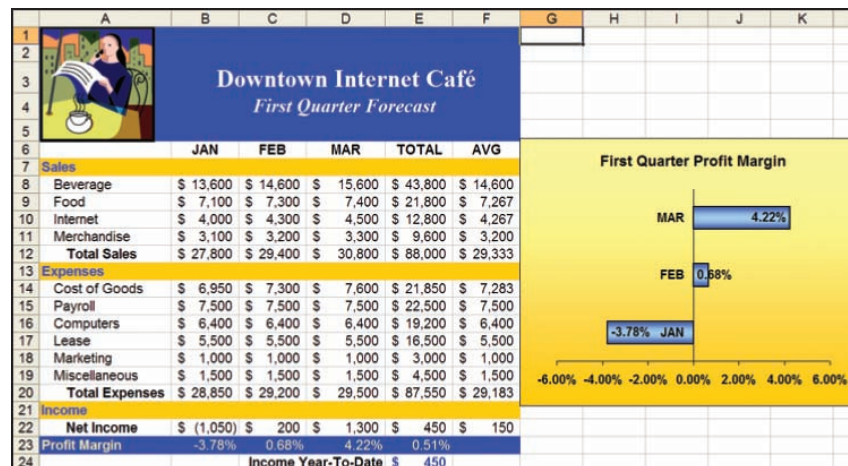 - **Database files**
  - **Presentation files**
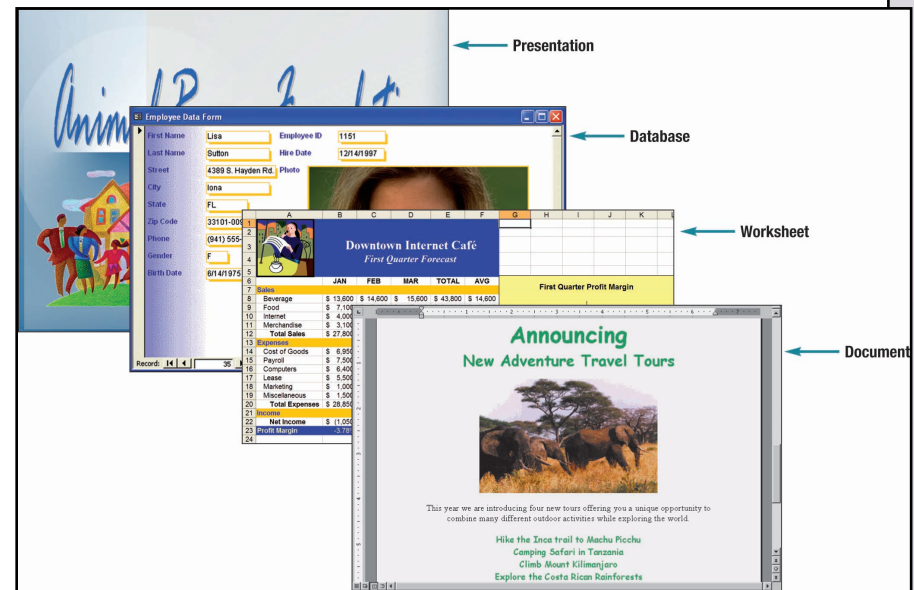
Document Files

- **Created by word processors to save documents such as memos, term papers, and letters**

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Worksheet Files

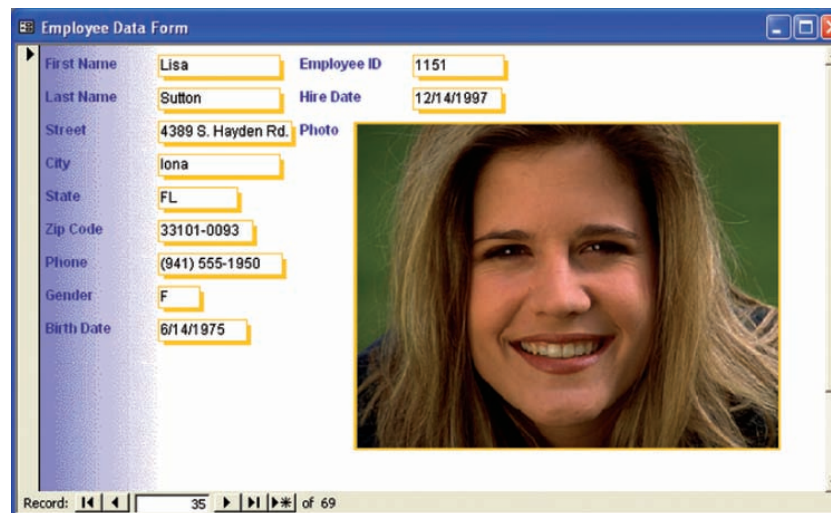- **Created by electronic spreadsheets to analyze things like budgets and to predict sales**

Database Files

- **Typically created by database management programs to contain highly structured and organized data**

Presentation Files

- **Created by presentation graphics programs to save presentation materials. For example, a file might contain audience handouts, speaker notes, and electronic slides.**

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Connectivity, the Wireless Revolution, and the Internet

- **Connectivity**
  - **Sharing of information**
  - **Wireless communication is becoming popular**
- **Computer networks**
  - **Connected communication system of computers**
  - **Largest network is the Internet**

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Careers In IT

Career	Description
Webmaster	Develops and maintains Web sites and Web resources. See page 00.
Computer support specialist	Provides technical support to customers and other users. See page 000.
Technical writer	Prepares instruction manuals, technical reports, and other scientific or technical documents. See page 000.
Software engineer	Analyzes users' needs and creates application software. See page 000.
Network administrator	Creates and maintains computer networks. See page 000.
Database administrator	Uses database management software to determine the most efficient ways to organize and access data. See page 000.
Systems analyst	Plans, designs, and maintains information systems. See page 000.
Programmer	Creates, tests, and troubleshoots computer programs. See page 000.

- **For a complete listing of careers, visit www.computing2008.com keyword: careers**

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A Look to the Future

- **The Internet & Web**
- **Powerful Software**
- **Powerful Hardware**
- **Security & Privacy**
- **Organizations**
- **Changing Times**

Discussion Questions (Page 1 of 2)

- **Explain the five parts of an information system. What part do people play in this system?**

- **What is system software? What kinds of programs are included in system software?**

- **Define and compare basic and specialized application software. Describe some different types of basic applications. Describe some types of specialized applications.**

Discussion Questions (Page 2 of 2)

- **Describe the different types of computers. What is the most common type? What are the types of microcomputers?**

- **What is connectivity? How are the wireless revolution and connectivity related? What is a computer network? What is the Internet? What is the Web?**

The End