Objectives

- Distinguish between operating systems and applications software
- List the various methods by which individuals and businesses acquire software
- List and briefly describe various types of task-oriented software
- Identify the kinds of software available for both large and small businesses
- Discuss ethical issues associated with software
- Describe the functions of various computer professionals
Applications Software

“Applications” Apply to real-world tasks & Solve user problems

vs.

OS that Controls the hardware & Provides services for applications
Applications Software

- Software used to solve a particular problem or perform a particular task
Software Types

- All software is:
  - Written by programmers
  - Takes a lot of time to write and test

- **Custom Software**

- **Commercial or Packaged Software**
Custom Software

- Specifically tailored to an organization’s needs
  - When requirements and specifications are unique
  - Organization hires computer programmers (in-house IT organizations or by contract with SW development organization)
  - They design, write, test, and implement software
- Can be extremely complex and take years to write
Software Types:

*Packaged or Commercial*

- Sold in stores, catalogs, or Web sites
  - Sometimes downloaded from the Internet
- Package contains one or more CDs or DVDs holding the software
  - Typically contains software documentation
- Designed to be user-friendly
- Must be installed
  - Standard or custom installation
  - The setup process copies some or all of the software to the hard disk
  - May require the CD-ROM to be in the drive to run
    - i.e., game software
**PC (Packaged) Software Characteristics**

PC Software tends to be more:

- User-friendly
- Easy
- Intuitive (to a degree)
- Minimum training and documentation needed to use
  - On-line help included with most packages
  - After market books helpful to increase proficiency

Then other kinds of software.
User-Friendly Software

- Easy to use
  - Should be intuitive for even a beginning user
  - Can be used with minimum of training and documentation
Acquiring Software

- **Freeware** -- Author provides it free for all to use
  - Author retains copyright
  - May place restrictions on use
  - May not be altered or redistributed without permission

- **Shareware**
  - Copyrighted but freely distributed for a trial period
    - When the trial period is over it may stop working
  - Pay a nominal fee to register with the author
    - Most authors add free documentation, enhancements, support, and updates to encourage people to register
Acquiring Software

- **Public-domain software**
  - Not copyrighted
  - May be used or altered without permission
  - Generally developed under government grants
  - Common in UNIX systems

- **Open source**
  - Free to all
  - Source code is distributed
  - Others may modify and redistribute (which helps to improve the software and increase the features)
  - Popular under the FreeBSD/LINUX OS
Acquiring Software

- Commercial software
  - Used most often
  - Copyrighted
  - Generally costly
  - May not be copied without permission of the manufacturer
Buying Commercial Software: *Individuals*

- Retail stores
- Mail order
- Electronic software distribution
Purchasing Commercial Software: Site License

- Software installed on some or all computers, depending on license terms
  - Customer keeps track of how many users
    - Number of users cannot exceed number of licenses
  - Customer copies and distributes software and manuals to users

- Some organizations use network licenses
  - Software installed on server
  - License fee based on number of concurrent users
Purchasing Commercial Software: Electronic Software Distribution

- Get software from the Internet
  - Typically freeware and shareware
  - Some commercial software

- Typical scenario:
  - Download software for trial period
  - Software disables itself after trial period unless you register (pay)
Purchasing Commercial Software: Application Service Provider

- Delivers applications to businesses via the Internet
  - ASP maintains software and data on its systems
    - Customers access applications as needed over the Internet
  - Alternative to creating and maintaining custom software or purchasing packaged software
    - “Rent” software, paying based on usage
Task-Oriented Software:
**Productivity Software**

[Image: A screenshot of a software interface with the text "Your Filing Status" and options like "Personal Info" and "About You and Your Family".]
Word Processing

- **Uses**
  - Most widely used personal computer software
  - Create memos, reports, papers
  - Incorporate graphics into documents

- **Functions**
  - Create
  - Edit
  - Format
  - Store
  - Print text and graphics
Desktop Publishing

- **Uses**
  - Newsletters
  - Reports
  - Brochures
  - Posters

- **Functions**
  - Handles high-level publishing needs
Electronic Spreadsheets

- **Uses**
  - Comparing mortgage interest rates
  - Preparing budgets
  - Tracking weight loss
  - Keeping grades for class…

- **Functions**
  - Manipulates numbers in rows and columns
  - Recalculates the results when a number is changed
  - Allows you to explore the “What if?”
Database Management

- Uses
  - Keep track of a large number of related facts
  - Query the data for specific information
  - Retrieve information in a variety of ways

- Functions
  - Store data
  - Update data
  - Manipulate data
  - Retrieve data
  - Print data in many forms
  - Report on data in a variety of ways
Graphics

- **Uses**
  - Maps
  - Graphs
  - Charts

- **Helps to**
  - Compare data
  - Spot trends
  - Make decisions

- **Visual information is more compelling**
  - Human information processing:
    - 80% visual – 15% audio – 5% reading
Presentation Graphics

- Uses
  - Business tool
    - Share reports
    - Discuss business plans
    - Document activities
  - Sales tool
    - Show cost/benefit projections on charts
    - Present audio/video testimonials from satisfied customers
    - Demonstrate a product
  - Teaching 😊...
    - Seminar presentations

- May contain
  - Text
  - Graphics
  - Audio
  - Video
  - Animations
Computer Art

- Use software to
  - Produce art
  - Express ideas

- Graphic artist
  - Artistic ability
  - Computer skills
  - Produces computer art
Communications

- Communicate from home with computer at office
- Access data stored in another computer in another location
- Stock exchange updates
- Remote Weather information
  - REINAS project at UCSC
- Communicate with other people
  - E-mail, IRC, MUDS/MOOS, Mailing lists, Chat rooms
Communications

- Provides method for communicating between computers
- Most likely way to connect is via the Internet
- Use a browser to access the Internet
Other Task Software

- Personal Information Managers
  - Keep track of activities
  - Typically include appointment calendar, address book, and task manager

- Office Suite
  - A group of basic applications that work together
    - Easy to share data among applications
    - Similar look and feel among applications
  - Integrated application
    - A “stripped down” version of the office suite
Business Software

- Custom-written to meet special business needs
- Standard packages
- Combination of custom-written and off-the-shelf
Vertical Market Software

- Written for a particular type of business
  - Dentist’s office
  - Drugstore
  - Auto shop

- Written by companies who have a thorough knowledge of that industry
  - Allows business to easily maintain information on the business, customers, vendors
  - Encompasses many of a business’s activities

- Software may be part of complete package (aka “turnkey”)
  - Hardware
  - Installation
  - Training
  - Support
Software for Workgroups (Groupware)

- Lets a group of people share or track information together
  - Also called collaborative software
  - Often combines electronic mail, networking, scheduling, and database technology
  - Data stored in one central location
- Often used by organizations with remote employees
- Data can be accessed and updated by anyone in the project group
Software for Workgroups

Examples

- Scheduling
- Preparation of proposals by several individuals
- Large team projects:
  - Engineering
  - Sales
Software for a Small Business

- Small Office/Home Office (SOHO)
  - Moderately priced software to perform functions aimed at small business
  - Examples:
    - Accounting software
    - Writing and advertising
    - Customer service
    - Keeping contacts
    - Making sales pitches
Software for Small Business

- Keeping Up and Making Contacts
  - Networking over the Internet

- Making Sales Pitches
  - Graphical presentation software
Small Office, Home Office SOHO

- Moderately priced to solve typical needs
- All-in-one software package
Application Software Ethics

What is legal?
Ethics and Application Software

- Piracy: the acquisition and use of illegal copies of software
- Counterfeiting: copying large numbers of CD-ROMs or DVD-ROMs and packaging them to look like the real thing
- Unauthorized copying of software is stealing
Software Piracy

Examples of piracy

- Copying software from a lab or from a friend
- Buying 2 or 3 copies of software and distributing it to dozens or hundreds of employees
- Buying 1 copy of software and installing it on several computers at home
Copying Software

- Legitimate reasons
  - Backup copy
  - Copy to hard disk

- Illegitimate reasons
  - Obtain software without paying for it
Software Piracy

Why the fuss?
- Very easy to duplicate software vs. a text book
- Software company may lose hundreds of dollars per pirated copy

Prosecution
- Yes: Small-medium sized business who purchase a few copies and distribute to many users
- Yes: Individual users who probably would not have purchased software on their own anyway
Computers and People

Users

- Any individual who operates a computer to accomplish a task
- Home
- Business
Most organizations have some sort of information technology department

- Made up of people who are responsible for the organization’s computer resources
- Maintain data and provide services to end users
Computer Professionals

- Management Information Systems (MIS)
- Computer Information Systems (CIS)
- Computing Services (CS)
- Information Services (IS)
- Information Technology (IT)
- Research and Development (R&D)
- Support
Computer Professionals

- **Data entry operators**
  - key data into a machine-readable format

- **System Administrators (SysAdmin)**
  - monitor the computer

- **Librarians**
  - catalog and keep secure the disks

- **Software Developers or Software Engineers**
  - write, test, implement, and maintain programs

- **Systems analysts**
  - plan and design computer systems
  - Must have knowledge of programming and knowledge of the business

- **Network Administrators**
  - implement and maintain the network

- **Chief information officer (CIO)**
  - department manager; makes strategic decisions relating to the flow of information in the organization