Computer
Fundamentals & Programming

Software

Software

1. Computer Application Software
2. Types of Computer Software
3. Software Licensing
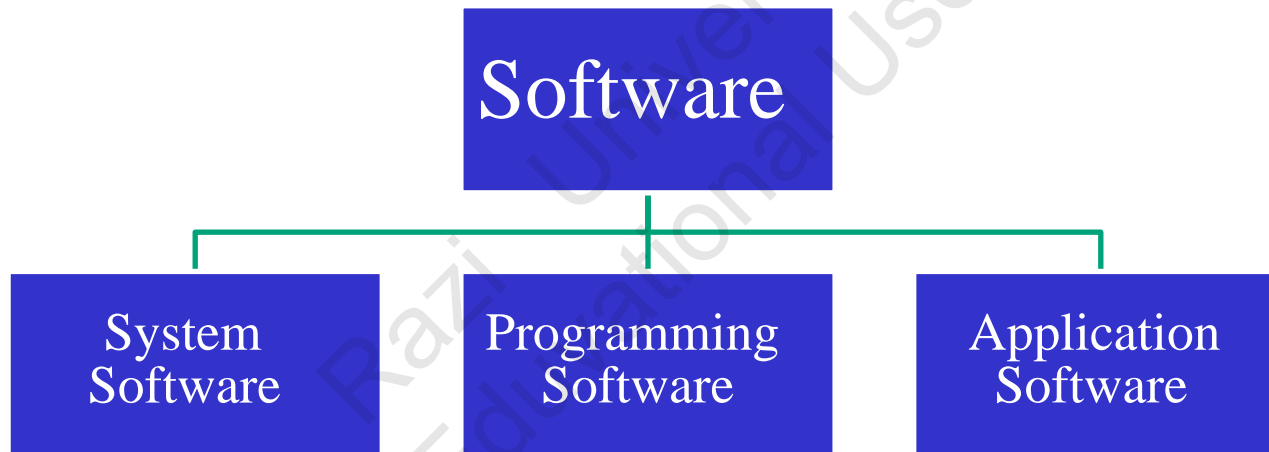4. Types of Software License
5. Software Piracy

Software

Software

- **Computer software**, or just **software**, is a collection of computer programs and related data that provides the instructions for telling a computer what to do and how to do it.

- Any **set of instructions** that guides the hardware and tells it how to accomplish each task.

Software

Software

System Software

- System software is computer software designed to operate the computer hardware to provide basic functionality and to provide a platform for running application software.

- Refers to the operating system and all utility programs that manage computer resources at a low level.
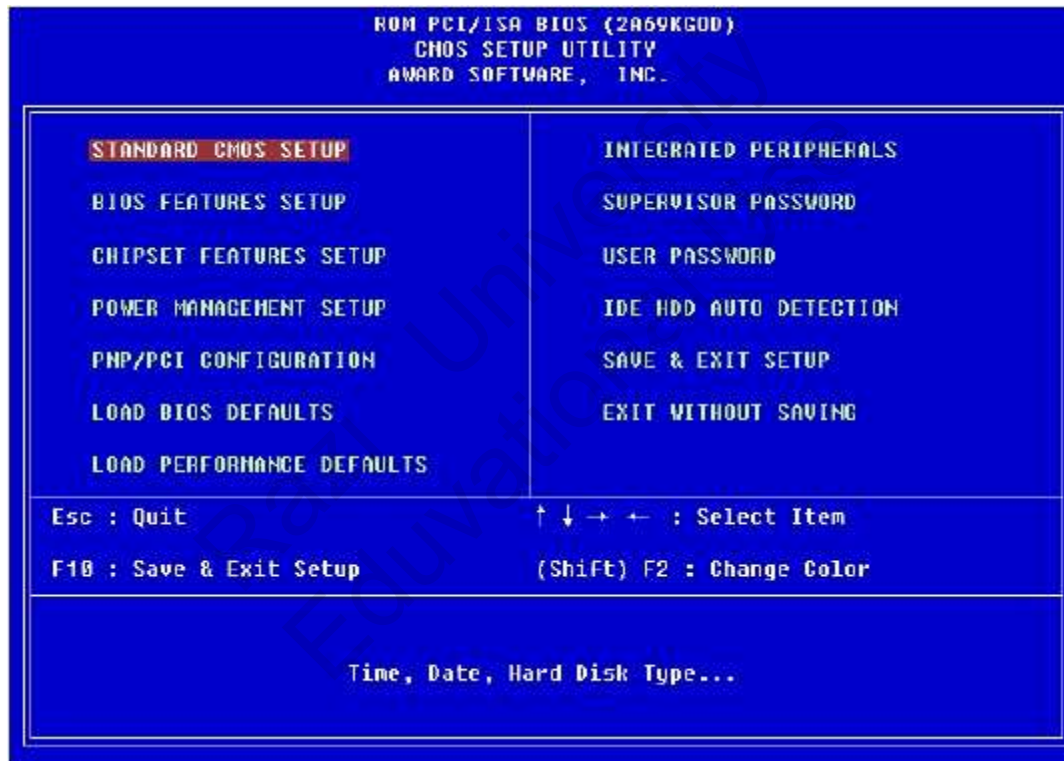
Software

System Software

- The BIOS (basic input/output system) gets the computer system started after you turn it on and manages the data flow between the operating system and attached devices such as the hard disk, video adapter, keyboard, mouse, and printer.

- The boot program loads the operating system into the computer's main memory or random access memory (RAM).

- System software also includes system utilities, such as the disk defragmenter and System Restore.
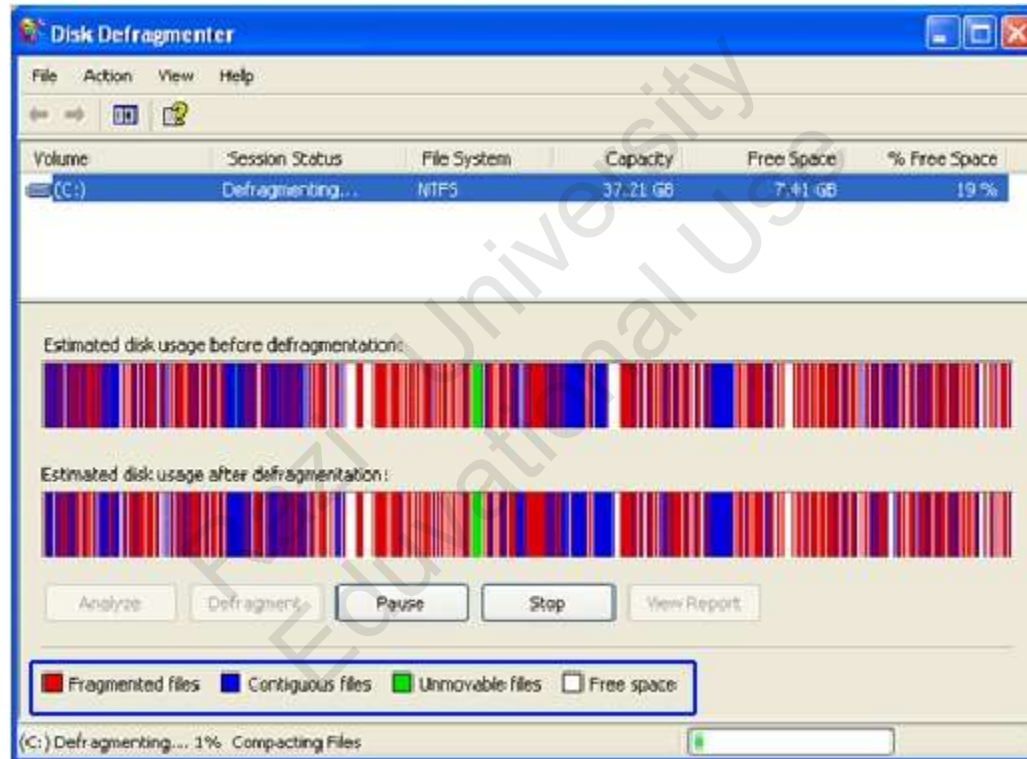
Software

System Software

Basic Input/Output System (BIOS) Program

Software

System Software

Disk Defragmenter

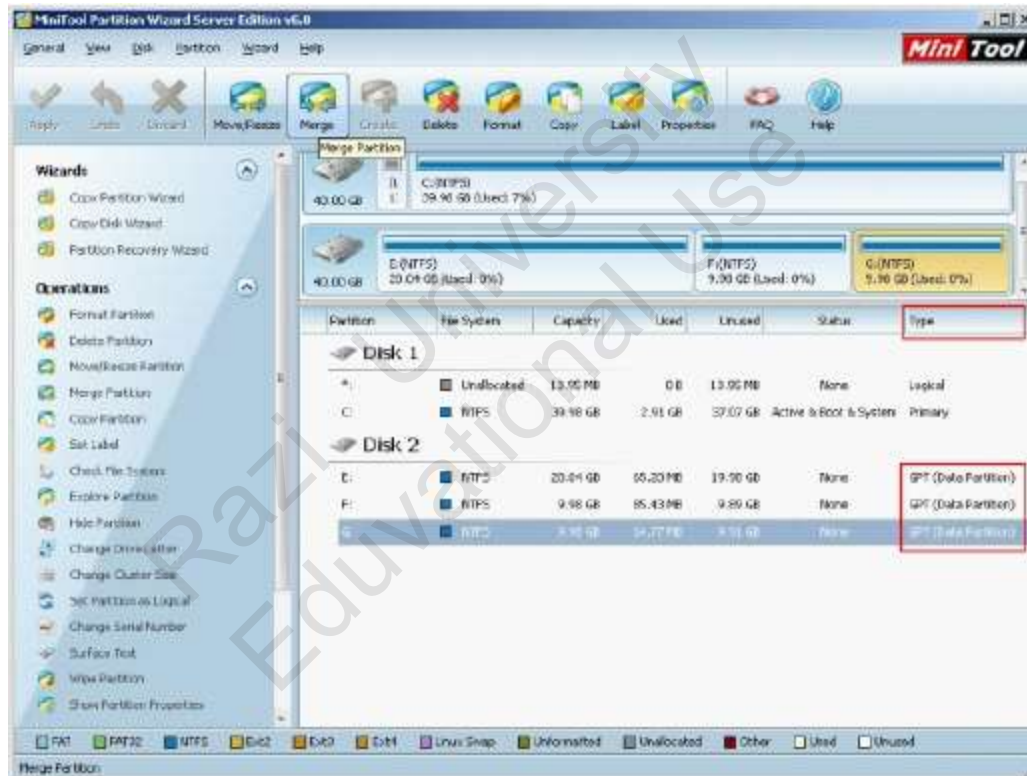# Software

System Software

Disk Cleanup

Software

System Software

Disk Partition Tool

Software

Programming Software

- Example of programming language:
  - C
  - C++
  - C#
  - BASIC
  - JAVA
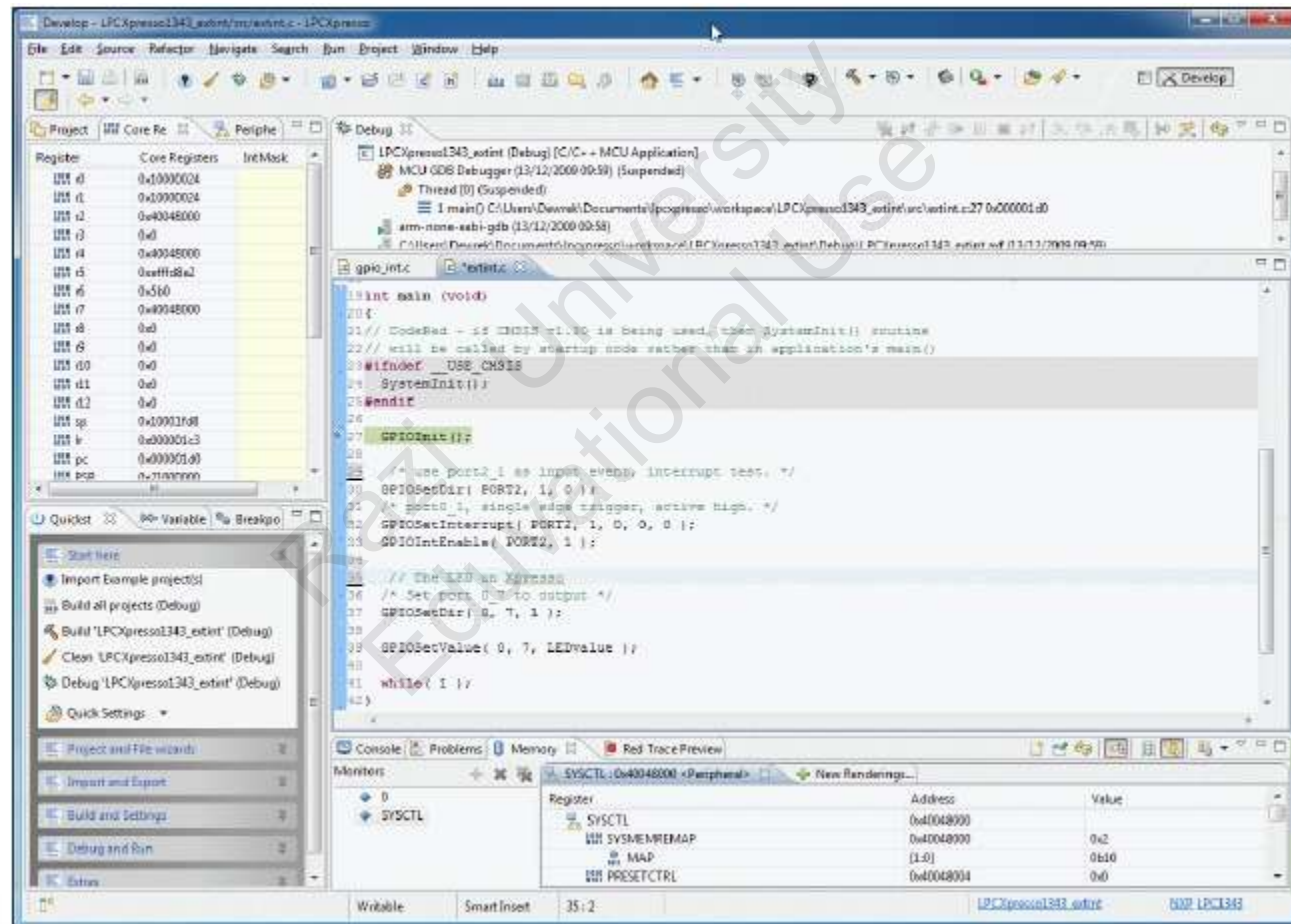 - Visual Basic
  - Phyton
  - HTML
  - PHP

Software

Programming Software

- Programming software include tools in the form of programs or applications that software developers use to **create, debug, maintain**, or otherwise support other programs and applications.

- The term usually refers to relatively simple programs such as **compilers**, **debuggers**, **interpreters**, **linkers**, and **text editors**,

Software

Programming Software

Interpreter

- Translates program one statement at a time.

- It takes less amount of time to analyze the source code but the overall execution time is slower.

- No intermediate object code is generated, hence are memory efficient.

- Continues translating the program until the first error is met, in which case it stops. Hence debugging is easy.

- Programming language like Python, Ruby use interpreters.

Compiler

- Scans the entire program and translates it as a whole into machine code.

- It takes large amount of time to analyze the source code but the overall execution time is comparatively faster.

- Generates intermediate object code which further requires linking, hence requires more memory.

- It generates the error message only after scanning the whole program. Hence debugging is comparatively hard.

- Programming language like C, C++ use compilers.

Software

Application Software

- A program or group of programs designed for end users

- Allows end users to accomplish one or more specific (non-computer related) tasks.

Software

Examples of Computer Application Software

- Word processor

- Spreedsheet

- Presentation Software

- Database Management System

- Dekstop Publisher

- Graphic Editor

- Web Browser

Software

Word Processor

- **Word processor** is a software program capable of creating, storing, and printing documents.

- Unlike the standard typewriter, users using word processors have the ability of creating a document and making any changes anywhere in the document.

- This document can also be saved for modification at a later time or to be opened on any other computer using the same word processor.
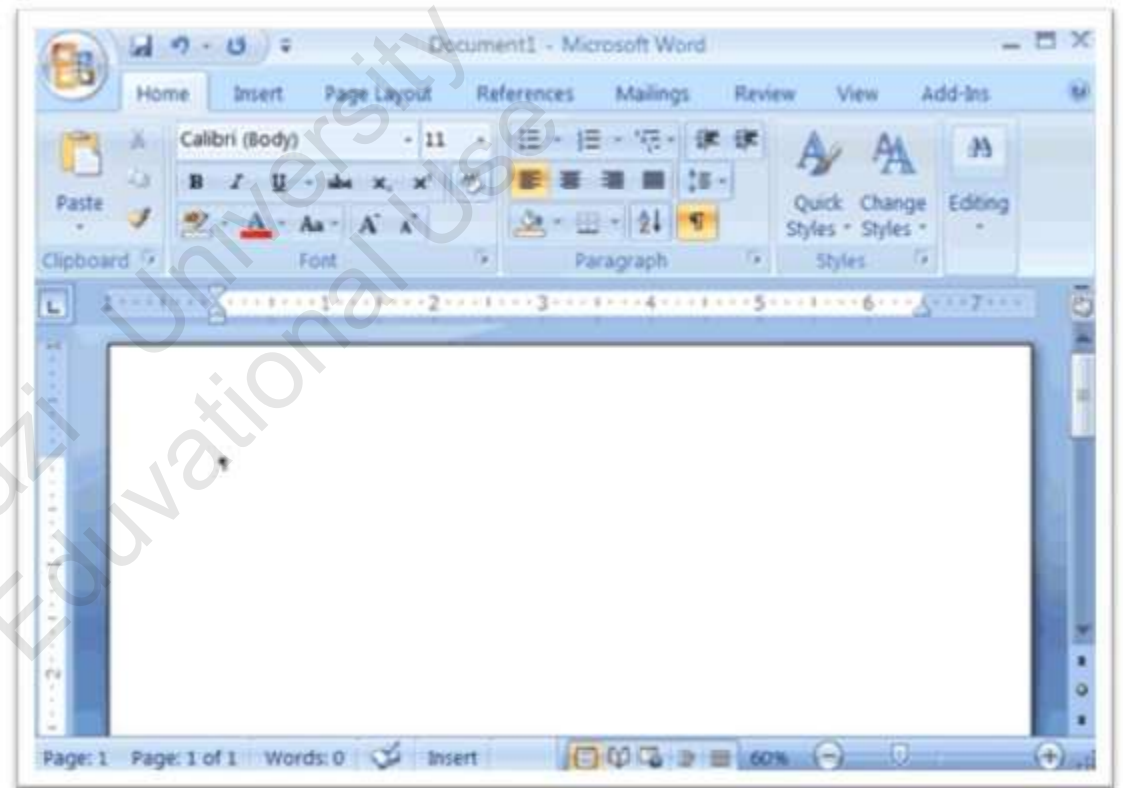
Software

Word Processor

Features

- Insert text
- Delete text
- Cut and paste
- Copy
- Page size and margins
- Search and replace
- Print

Software

Word Processor

Examples

- Microsoft Word
- WordPro
- AppleWorks

Software

Spreadsheet

- **Spreadsheet** is a data file made up of rows and columns that are used to sort data and allow a user to manipulate and arrange data easily, commonly numerical data.

- What makes a spreadsheet software program most unique is its ability to calculate values using mathematical formulas and the data in the cells.

Software
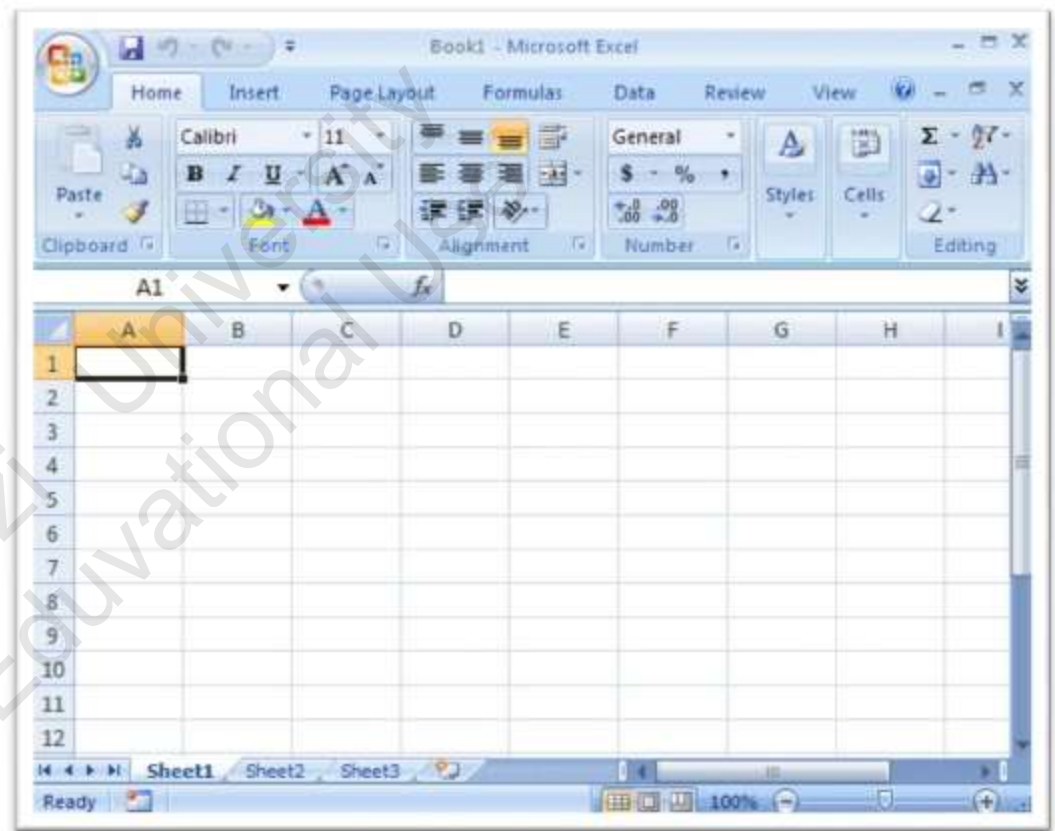
Spreadsheet

- Features:
  - Formulas
  - Functions
  - Charts
  - Cut/Copy/Paste with single cells or ranges of cells
  - Cells formatting
  - Cells merging

Software

Spreadsheet

Examples

- Microsoft Excel
- Lotus 1-2-3
- Apple Numbers
- OpenOffice Calc

Software

Presentation Software

- A **presentation program** is a software program that helps create a slideshow that addresses a topic.

- Presentation programs are often used in businesses and schools for discussing a topic or for teaching.

- It typically includes three major functions:
  - an editor that allows text to be inserted and formatted
  - a method for inserting and manipulating graphic images
  - a slide-show system to display the content.

Software
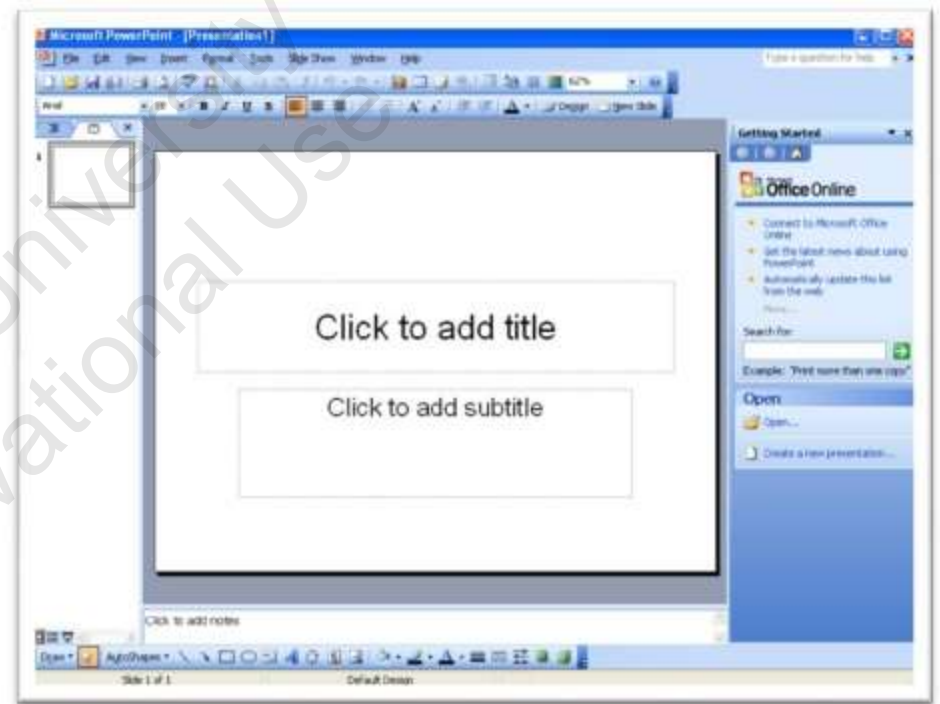
Presentation Software

- Features:
  - Insert Slide
  - Deletion of Inserted slides
  - Allows cut and paste slides in any order.
  - Allows duplication content or slide
  - Allows you to display the presentation designed in a slide show system. (View Slide Feature)
  - Allows animations and/or sounds manipulations on objects in the slide.

Software

Presentation Software

Example:

- Microsoft PowerPoint
- Adobe Persuasion
- Hypercard
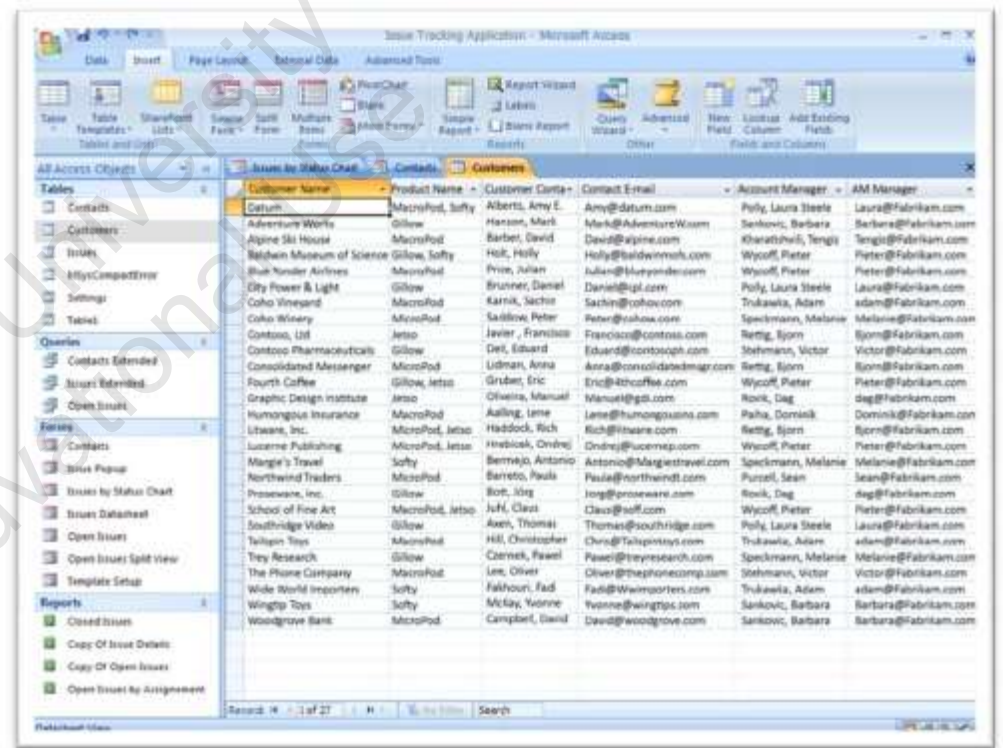- OpenOffice Impress
- Scala Multimedia

Software

Database Management System (DBMS) Software

- A program that controls the organization, storage, management, and retrieval of data in a database.

- Users can create tables, queries, forms and reports.

Software

Database Management System (DBMS) Software

- Example:
  - Microsoft Access
  - Oracle Database
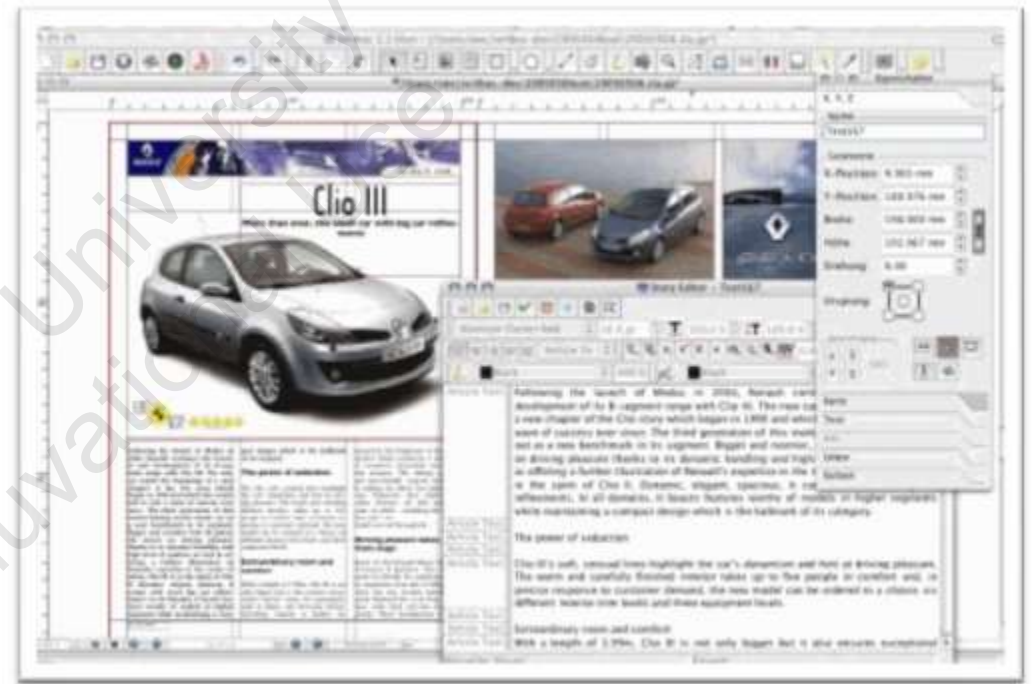 - MySQL
  - FoxPro

Software

Desktop Publishing Software

- Used to produce high-quality printed documents such as magazine, greeting card, posters, etc.

- Allows you to use different typefaces, specify various margins and justifications, and embed illustrations and graphs directly into the text.

Software

Desktop Publishing Software

- Example:
    - Adobe Indesign
    - QuarkXpress
    - MS Publisher

Software

Web Browser

- Web browser, a software application used to locate and display Web pages.

- Example:
  - Internet Explore (IE)
  - Mozilla Firefox
  - Chrome
  - Opera

Software

Web Browser

Software

Graphic Software

- **Graphics software** or **image editing software** is a program or collection of programs that enable a person to manipulate visual images on a computer.

- Computer graphics can be classified into two distinct categories:
  - raster graphics
  - vector graphics
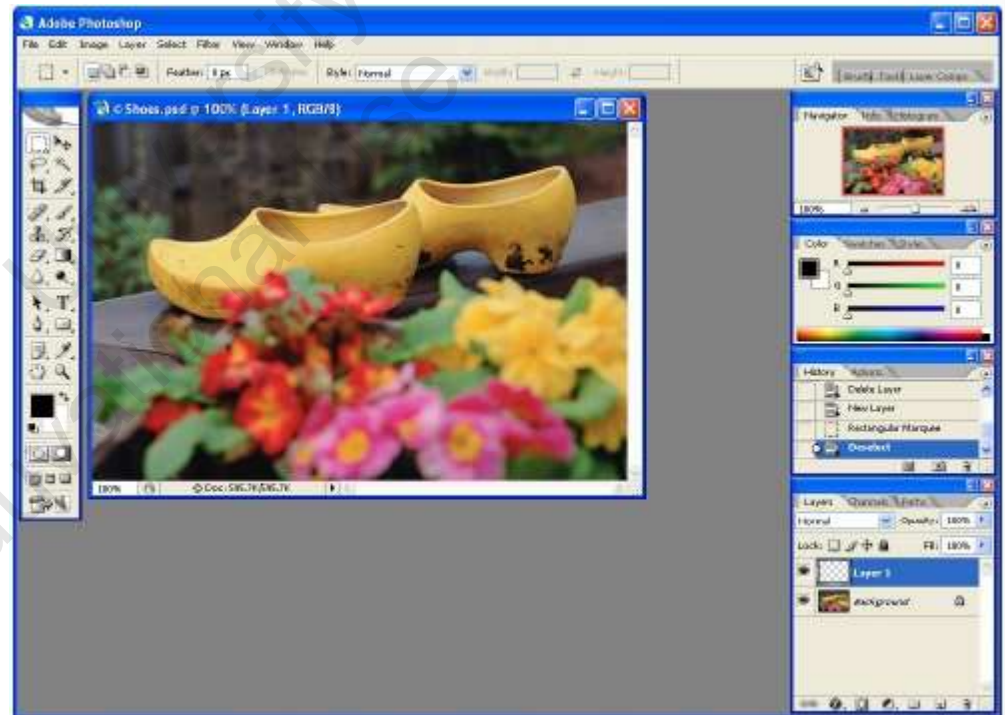
Software

Raster Graphic Editor

- A **raster graphics editor** is a computer program that allows users to paint and edit pictures interactively on the computer screen and save them in one of many popular "bitmap" or "raster" formats

- Common features:
  - Select a region for editing
  - Draw lines with brushes of different color, size, shape and pressure
  - Add typed letters in different font styles
  - Apply various filters for effects
  - Convert between various image formats

Software

Bitmap Graphic Editor

Examples

- Adobe Photoshop
- PaintShop Pro
- iPhoto
- GIMP

Software

Vector Graphic Editor

- Also known as drawing software.

- A computer program that allows users to compose and edit vector graphics images interactively on a computer.

- Vector editors are often better for page layout, typography, logos, sharp-edged artistic illustrations (e.g. cartoons, clip art, complex geometric patterns), technical illustrations, diagramming and flowcharting.
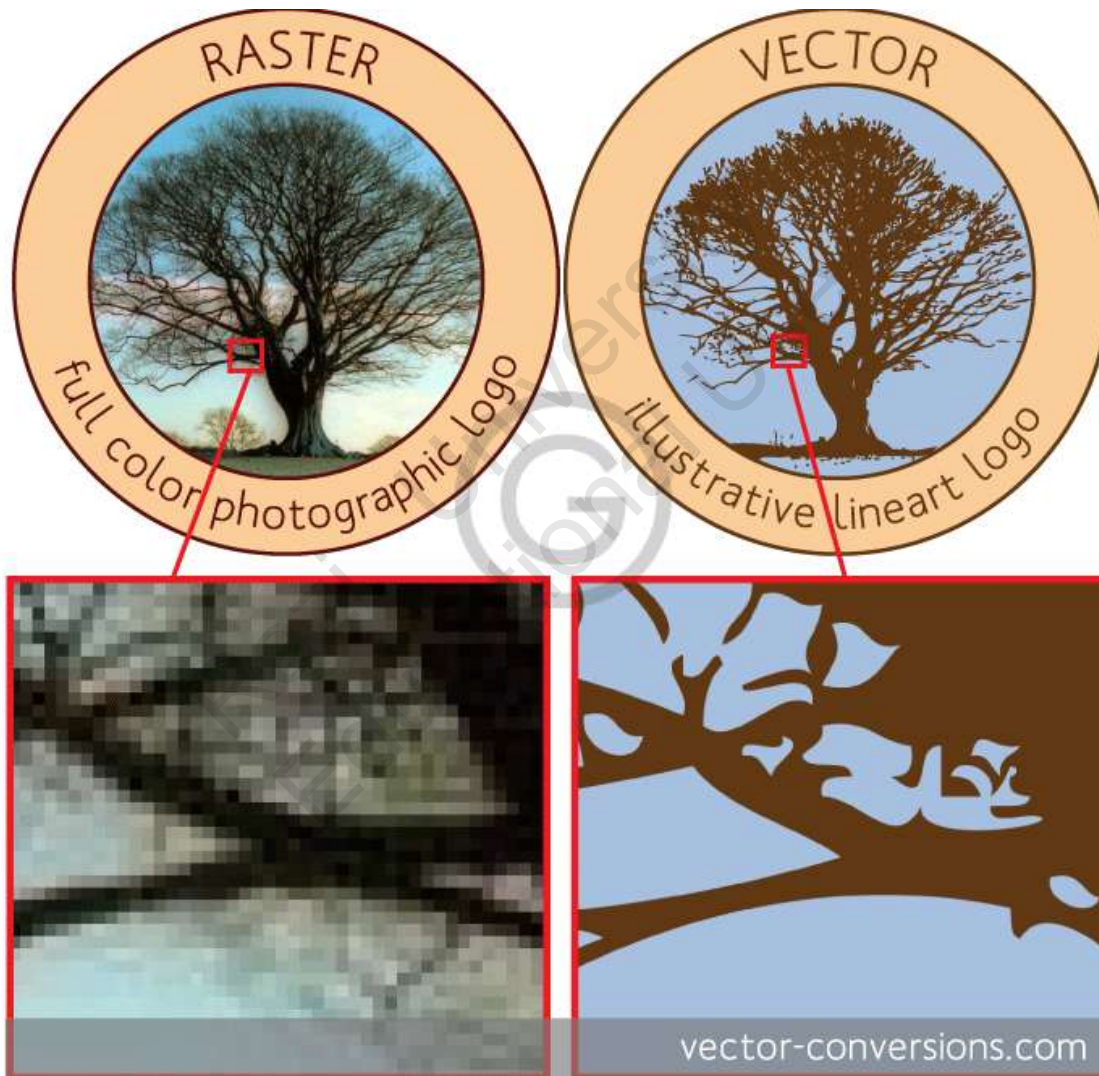
Software

Vector Graphic Editor

Examples

- Adobe Illustrator
- Macromedia Freehand
- Xara Xtreme
- Inkscape

RASTER — full color photographic logo

VECTOR — illustrative lineart logo

vector-conversions.com

Software

Accounting Software

- **Accounting software** is an application software that records & processes accounting transactions within functional modules such as accounts payable, accounts receivable, payroll, and trial balance.

- It functions as an accounting information system.

Software

Accounting Software

- Features:
  - Accounts receivable
  - Accounts payable
  - General ledger
  - Billing
  - Stock/inventory
  - Purchase order
  - Sales order
  - Bookkeeping

Software

Accounting Software

- Examples:
    - Microsoft Money
    - MYOB
    - USB
    - SAGE

Software

Other Examples:

- Computer Aided Design (CAD)
- Video Editor
- Sound Editor
- Video Games
- Educational Software
- Email Client
- Electronic Media

Software

Software Licensing

- Is a legal instrument (by way of contract law) governing the usage or redistribution of software

- Allowing an individual or group to use a piece of software

- Nearly all applications are licensed

- Some are based on the number machines on which the licensed program can run whereas others are based on the number of users that can use the program

Software

Types of Software License

- Registerware

- Shareware

- Freeware

- Open source

- Demoware

- Abandonware

Software

Registerware

- Refers to computer software which requires the user to give personal information through registration in order to download or use the program.

Software

Shareware/Demoware

- Refers to copyrighted commercial software that is distributed without payment on a trial basis and is limited by any combination of functionality, availability, or convenience.

Software

Freeware

- Computer software that is available for use with no cost or for an optional fee.

- Freeware is different from shareware, where the user is obliged to pay.

Open Source Software (OSS)

- OSS is also a free software.

- OSS can be defined as computer software for which the human-readable source code is made available under a copyright license (or arrangement such as the public domain) that meets the Open Source Definition.

- This permits users to use, change, and improve the software, and to redistribute it in modified or unmodified form.

Software

Abandonware

- It refers to sofware that is no longer available for purchase or that is at least a certain amount of years old.

Software

License Key

- A software license key is a pattern of numbers and/or letters provided to licensed users of a software program.

- License keys are typically created and delivered via a license generator once a software user has paid for the software and has agreed to the conditions of use and distribution as legally specified in the software license.

Software

License Key

Software Piracy سرقت نرم افزاری

- The unauthorized copying of software.

- Refers to ways of obtaining software without the permission of the software holder

- Some common types of software piracy include:
  - **Counterfeit software**
  - **OEM unbundling**
  - **Softlifting**
  - **Hard disk loading**
  - **Internet software piracy**

Software

Software Piracy

Counterfeit Software نرم افزار جعلی

- A type of software piracy that occurs when fake copies of software are produced using a CD burner to copy the software

- Counterfeit software is usually sold at prices well below that of the retail price of the legitimate software

Software

Software Piracy

OEM Unbundling بسته

- **Original equipment manufacturer (OEM)** unbundling is a type of software piracy that occurs when OEM-packaged software is separated from the hardware it originally came bundled with, at the OEM or retail level of sale.

Software Piracy

Softlifting سرقت نرم

- A type of software piracy that occurs when users share their software with other users who are not authorized to have access by the End-User License Agreement (EULA).

- The most common type of softlifting occurs when a person does legitimately purchase software but installs it onto multiple computers which is a violation of the licensing agreement.

Software

Software Piracy

Hard Disk Loading

- A type of software piracy that occurs when hardware dealers install an unauthorized copy of commercial software onto a computer system.

- In many cases consumers will not receive any manuals or original CD of the software but the hardware dealer may charge for the illegal software in the total system purchase price.

Software Piracy

Internet Software Piracy

- A type of software piracy that occurs when software, which is illegally obtained through Internet channels, usually through peer-to-peer file sharing systems or downloaded from pirate Web sites that make software available for download for free or in exchange for users who uploaded software