

SOFTWARES OF COMPUTER

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Software & Hardware?

- Computer Instructions or data, anything that can be stored electronically is Software.
- Hardware is one that is tangible. The storage devices (Hard disk, CD's etc.), mouse, keyboard CPU and display devices (Monitor) are Hardware.

For example: There is a problem in the Software implies – Problem with program or data

Computer Software

- Computer hardware is useless without software.
- Software is the set of instructions and associated data that direct the computer to do a task.
- Software can be divided into two categories:
 - system software and application software.
- System software helps the computer to carry out its basic operating tasks.
- Application software helps the user carry out a variety of tasks.

PC Software Characteristics

- User-friendly
- Easy
- Intuitive
- Minimum training and documentation needed to use

Software Types:

Custom Software

- Written by programmers
- Takes a lot of time to write and test
- When specifications are unique

Software Types: ***Packaged or Commercial***

- Sold in stores, catalogs, or downloadable from the WWW
- Purchased from software publishers
- Must be installed
 - Standard or custom installation
 - The setup process copies some of all of the software to the hard disk
 - May require the CD-ROM to be in the drive to run

Acquiring Software

- Freeware
 - Free to all
 - Copyrighted
 - Distributed in machine-readable format
- Shareware
 - Freely distributed for a trial period
 - Pay a nominal fee to register with the author

Acquiring Software

- Public-domain software
 - Un-copyrighted
 - May be used or altered without restriction
 - Generally developed under government grants
- Open-source
 - Free to all
 - Source code is distributed
 - May be used or altered
 - Popular under the LINUX OS

Acquiring Software

- Commercial software
 - Used most often
 - Copyrighted
 - Generally costly
 - May not be copied without permission of the manufacturer

Types of Software

System Software

Application Software

Open source Software

and

Proprietary Software

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graph TD; A[Software] --> B[System Software]; A --> C[Application Software]
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Software

System
Software

Application
Software

Types of computer softwares

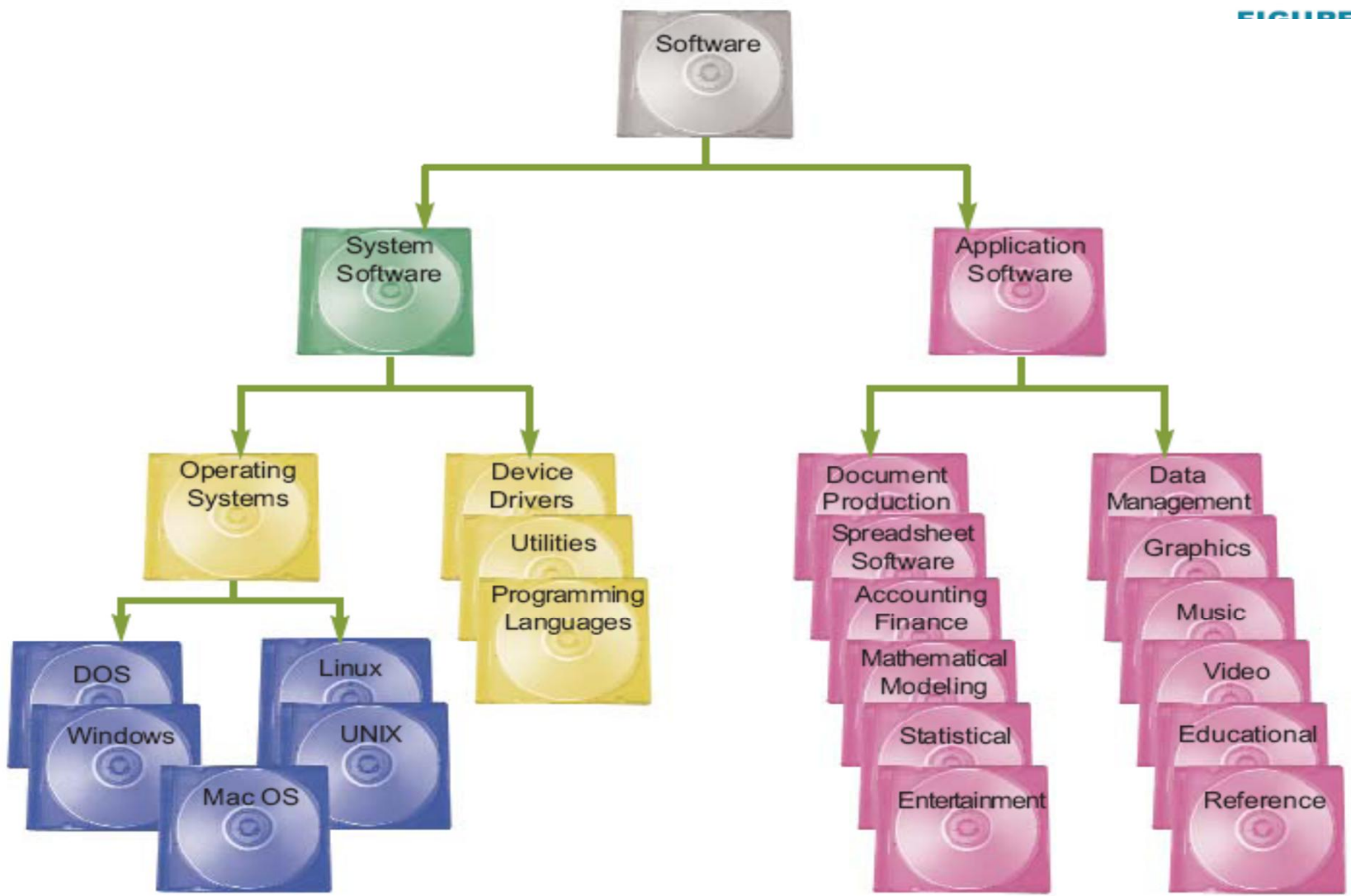
- Application software

- It is the reason that one wants to buy a computer:
 - printout out paychecks
 - keep track of a stamp collection
 - generate a fancy newsletter
 - keep a budget
 - browse the Web
 - play Mortal Kombat
 - do your taxes
 - guide robots
 - draw a flowchart
 - design a car

- System software

- Helps computer carry out its *basic tasks*.
- Includes:
 - **Operating systems (OS)** - master control programs
 - BIOS (Basic Input/Output System)—see Rdg Handout!
 - Some utilities are built into OS
 - **Translators** (program language translators/compilers)

FIGURE 2





Software

- System software
 - Programs that support the execution and development of other programs
 - Two major types
 - Operating systems
 - Translation systems (compilers & linkers)
- Application software
 - Easy-to-use programs designed to perform specific tasks



System Software:

System Software includes the Operating System and all the utilities that enable the computer to function.

System software is a term referring to any computer software which manages and controls the hardware so that application software can perform a task.

Example:

Operating Systems, Compiler, Loader, Linker, Interpreter.

System Software

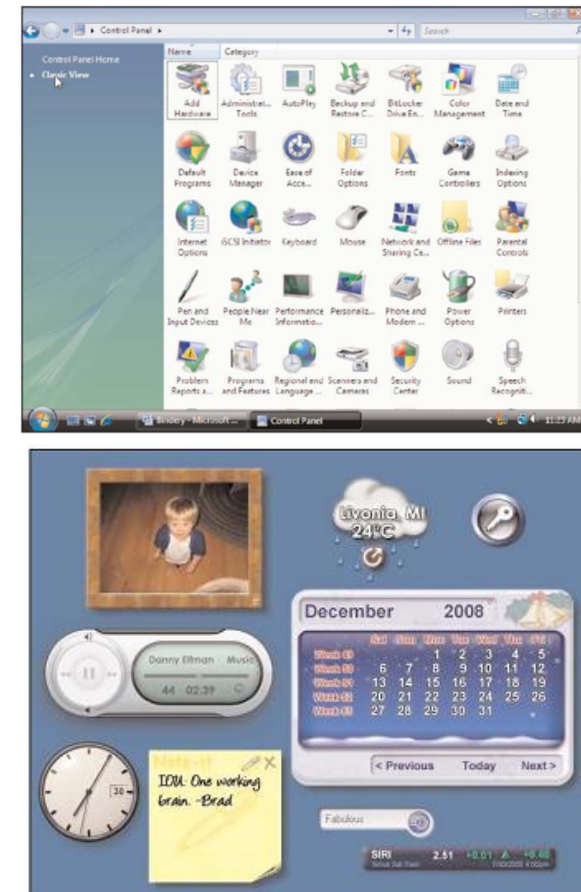
- Manages the fundamental operations of the computer, such as
 - loading programs and data into memory, executing programs, saving data to disks, displaying information on the monitor, and transmitting data through a port to a peripheral device.
- System software: operating systems, utilities, device drivers.

Operating System

- Collection of computer programs that control the interaction of the user and the computer hardware.
- Responsible for directing all computer operations and managing all computer resources.
- Controls basic input and output, allocates system resources, manages storage space, maintains security, and detects equipment failure.
- A part of the operating system code is stored in a ROM and the rest of it resides on a disk.
- Loading the operating system into memory is called booting the computer.

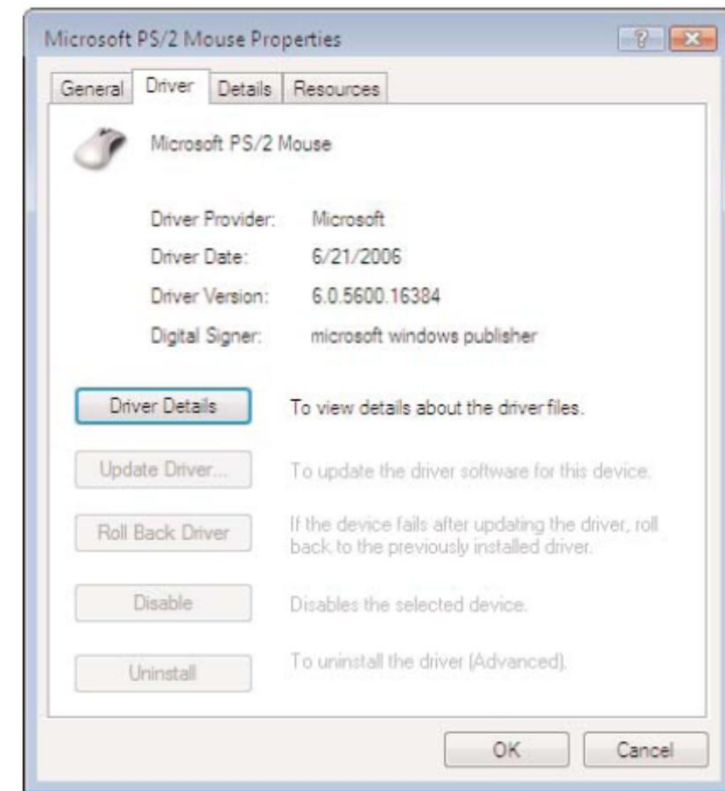
Utility Software

- Utility software (a type of system software) is designed to help you monitor and configure settings for your computer system equipment, the operating system, or application software
- A desktop widget is a specialized utility program that appears on a computer's screen-based desktop



Device Drivers

- A device driver is software that helps a peripheral device establish communication with a computer
- Windows Device Manager



Application Software:

Application Software includes programs that do real work for user.

Example:

Payroll systems, Inventory Control, Manage student database, Word Processor, Spreadsheet and Database Management System etc.,

Application software

- Developed for a specific task , such as word processing(MS Word/ WordPerfect), accounting (Lotus 1-2-3/ Excel), or database management (Access/ dBASE).
- We also use graphics and presentation software.
- Most applications are purchased on diskette or CD-ROM.
- They are installed by copying the programs from the diskettes/CD-ROM to the hard disk.

Applications software

- Application software consists of programs that perform specific tasks for users
 - Word processing
 - Spreadsheet software
 - Database software
 - Presentation graphics software
 - Game
 - Desktop publishing software
 - Anti-virus scanner
 - Web browser
 - etc.

Forms of applications software

- Packaged software
- Custom software
- Freeware
- Public domain software
- Shareware
- Software from ASP

Popular Applications

- Document Production Software
- Spreadsheet Software
- “Number Crunching” Software
- Database Software
- Graphics Software

Popular Applications

- Music Software
- Video Editing and DVD Authoring Software
- Educational and Reference Software
- Entertainment Software
- Business Software

Document Production Software

- Assists you with composing, editing, designing, printing, and electronically publishing documents
 - Word processing
 - Desktop publishing
 - Web authoring



Document Production Software

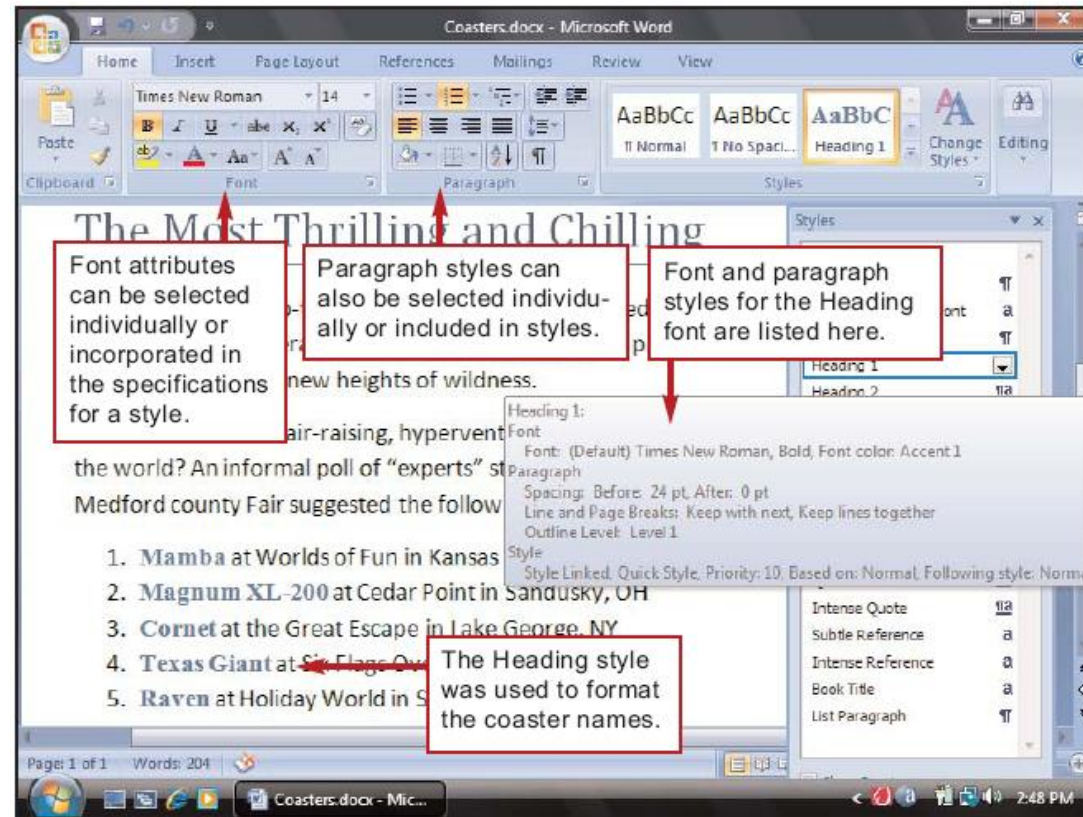
- Document production software may include:
 - Spelling checker
 - Spelling dictionary
 - Thesaurus
 - Grammar checker
 - Feature to analyze the reading level
 - Readability formula
 - Search and Replace feature

Document Production Software

- The format for a document refers to the way that all elements are arranged on the page

Times New Roman Font	8 pt.
Times New Roman Font	10 pt.
Times New Roman Font	12 pt.
Times New Roman Font	16 pt.
Times New Roman Font	16 pt. Bold
Times New Roman Font	16 pt. Green
Arial Font	16 pt.
Comic Sans MS	16 pt.
Georgia Font	16 pt. Bold Gold
Dotto	24 pt. Orange

Document Production Software



Document Production Software

- Mail merge automatically creates personalized letters by combining the information in a mailing list with a form letter
- Additional capabilities of word processing software include:
 - Automatically generating table of contents and index
 - Numbering and positioning footnotes
 - Providing document templates
 - Exporting to HTML format

Spreadsheet Software

- A spreadsheet uses rows and columns of numbers to create a model or representation of a real solution
- Spreadsheet software, such as Microsoft Excel, provides tools for creating worksheets

The screenshot shows a spreadsheet titled 'Espresso Espresso' in OpenOffice.org Calc. The spreadsheet has columns A through G and rows 1 through 21. The data is organized into a table with the following structure:

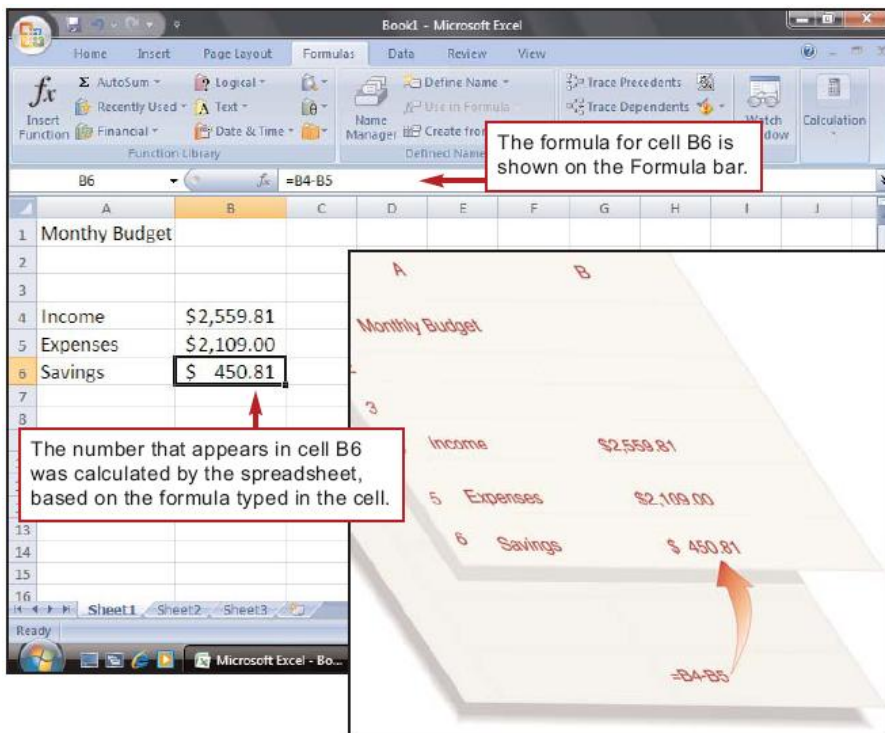
	A	B	C	D	E	F	G
1	Espresso Espresso	Current	Scenario 1	Scenario 2			
2	Projected Income (total from Income tab)	\$486,000.00	\$972,000.00	\$243,000.00			
3	Cost of coffee, etc. (total from Cost tab)	\$130,000.00	\$130,000.00	\$130,000.00			
4	Wages	\$120,000.00	\$120,000.00	\$120,000.00			
5	Rent	\$36,000.00	\$36,000.00	\$36,000.00			
6	Advertising	\$100,000.00	\$100,000.00	\$100,000.00			
7	Telephone	\$2,760.00	\$2,760.00	\$2,760.00			
8	Utilities	\$6,600.00	\$6,600.00	\$6,600.00			
9	Insurance	\$1,080.00	\$1,080.00	\$1,080.00			
10	Projected Expenses	\$396,440.00	\$396,440.00	\$396,440.00			
11	Projected Profit	\$89,560.00	\$575,560.00	-\$153,440.00			

Annotations in the image include:

- A red box labeled 'Cell A1' pointing to the first cell of the table.
- A red box labeled 'Active cell' pointing to the cell containing the value \$89,560.00.
- A red box labeled 'Labels, such as Profit and Expenses, identify data.' pointing to the 'Projected Profit' label in row 11.
- A red box labeled 'A formula in this cell subtracts the Expenses from the Income to calculate Profit.' pointing to the cell containing the value \$89,560.00.
- A red box labeled 'Values in these cells can be used for calculations.' pointing to the cells containing the values \$396,440.00 and \$575,560.00.

Spreadsheet Software

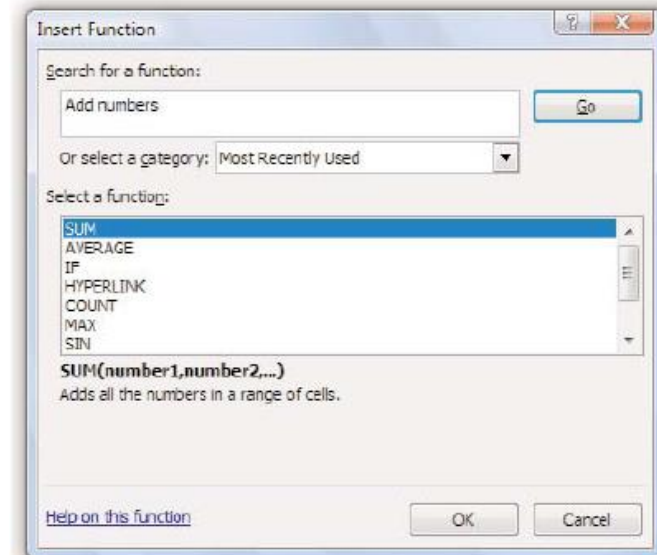
When a cell contains a formula, it displays the result of the formula rather than the formula itself. To view and edit the formula, you use the Formula bar.



You can think of the formula as working behind the scenes to perform calculations and then display the result.

Spreadsheet Software

- A formula tells the computer how to use the contents of cells in calculations
 - Cell references
 - Relative reference
 - Absolute reference
 - Mathematical operators
 - Functions
 - Automatic recalculations



Spreadsheet Software

As shown in the examples, relative references within a formula can change when you change the sequence of a worksheet's rows and columns. An absolute reference is anchored so that it always refers to a specific cell.

	A	B	C
1	Monthly Budget		
2			
3			
4	Income	\$2,559.81	
5	Expenses	\$2,109.00	
6	Savings	\$450.81	
7			
8	The original formula =B4-B5 uses relative references.		
9			
10			
11			

Two blank rows

	A	B	C
1	Monthly Budget		
2			
3	Income	\$2,559.81	
4	Expenses	\$2,109.00	
5	Savings	\$450.81	
6			
7			
11			

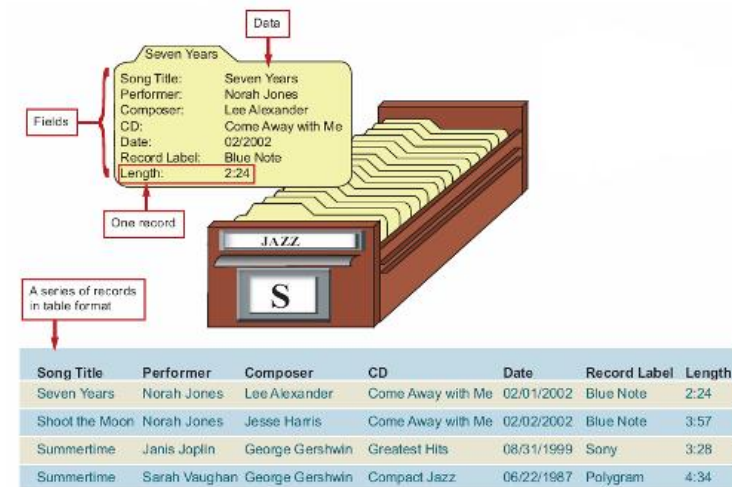
When row 3 is deleted, the Income and Expenses values move up one row, which means these values have new cell references. The formula changes to =B3-B4 to reflect the new cell references.

“Number Crunching” Software

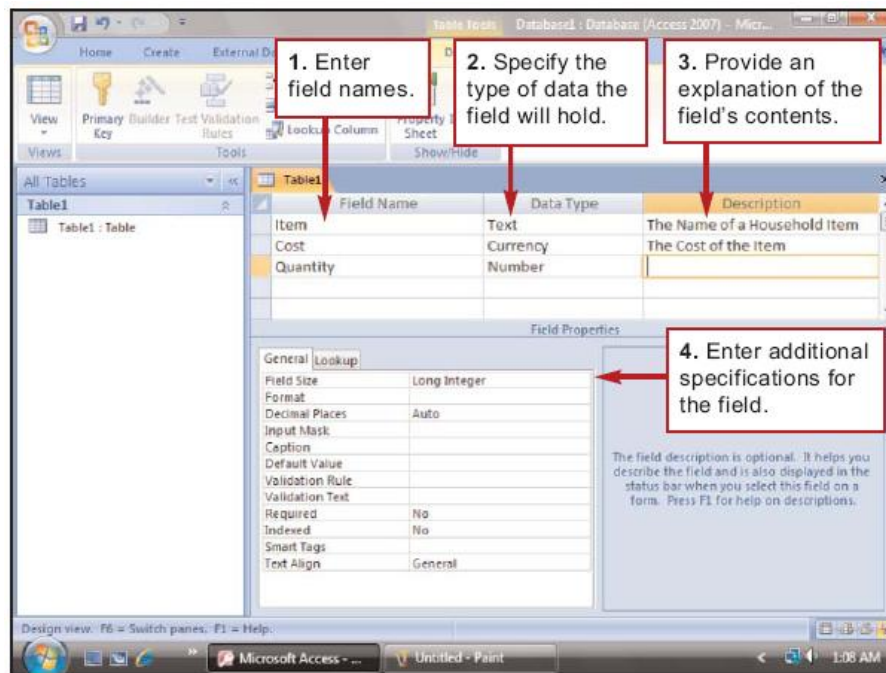
- Provides a structured environment dedicated to a particular number crunching task
 - Statistical software
 - Mathematical modeling software
 - Money management software
 - Personal finance software
 - Tax preparation software

Database Software

- A database is a collection of data
 - Database software helps you enter, find, organize, update, and report information stored in a database



Database Software



Database software provides tools for specifying fields for a series of records.

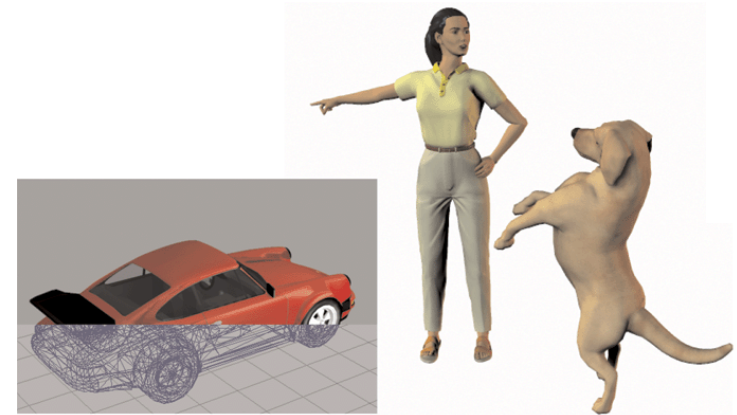
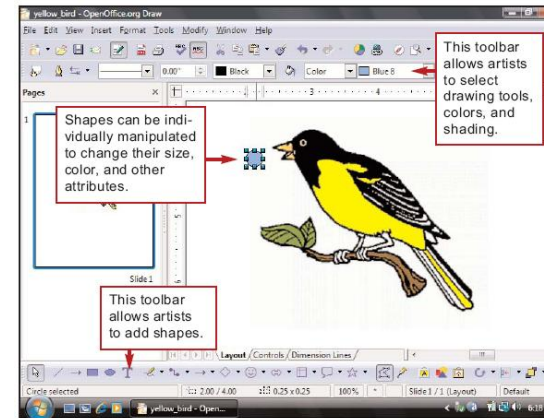
Database Software

- A query language such as SQL (Structured Query Language) provides a set of commands for locating and manipulating data
 - Natural language query
 - Query by example

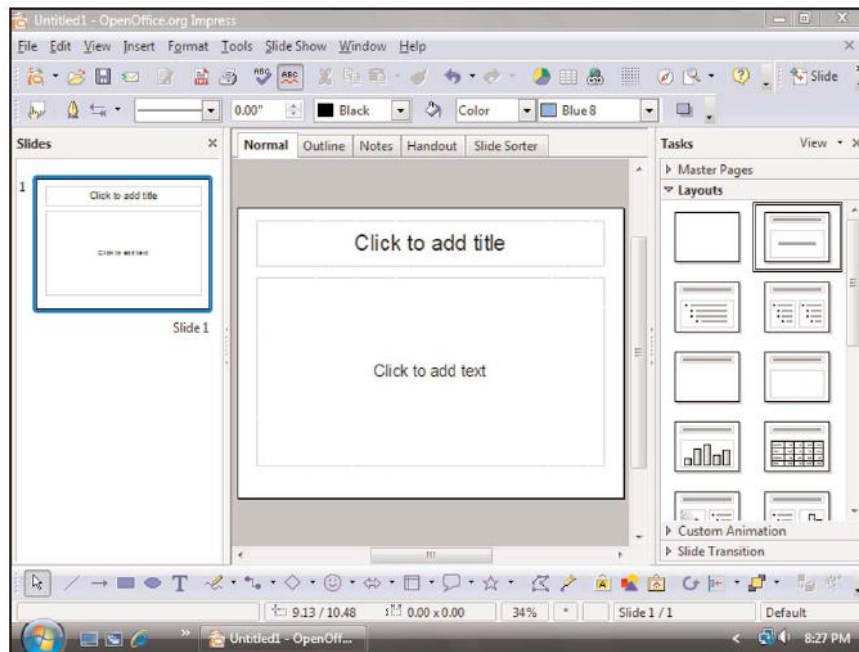


Graphics Software

- Designed to help you create, manipulate, and print graphics
 - Paint software
 - Photo editing software
 - Drawing software
 - 3-D graphics software
 - CAD software
 - Presentation software



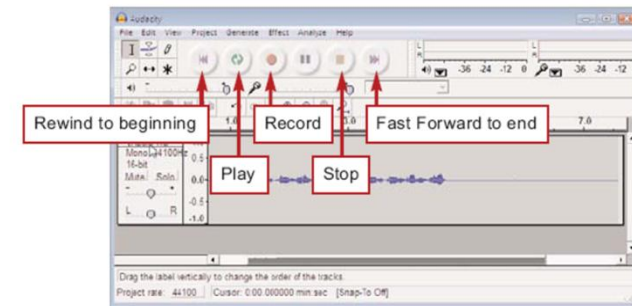
Graphics Software



A computer-based presentation consists of a series of slides, created with presentation software.

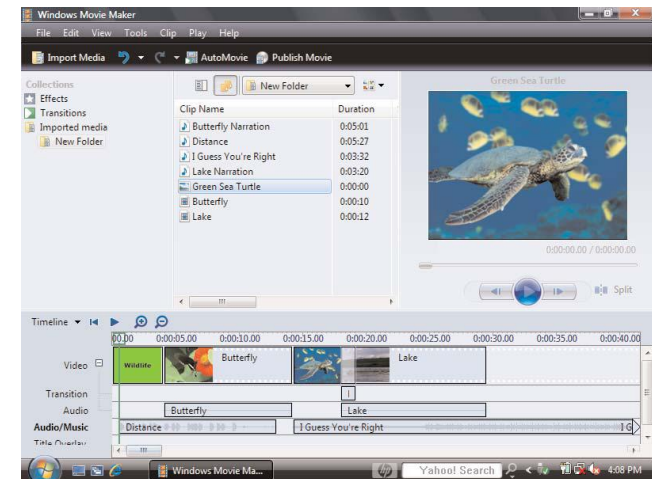
Music Software

- Allows you to make your own digital voice and music recordings
 - Audio editing software
 - CD ripper software
 - Audio encoding software
 - Ear training software
 - Notation software
 - Computer-aided music software
 - MIDI sequencing software



Video Editing and DVD Authoring Software

- Provides a set of tools for
 - Transferring video footage from a camcorder to a computer
 - Clipping out unwanted footage
 - Assembling video segments
 - Adding special visual effects
 - Adding a sound track



Educational and Reference Software

- Educational software
 - Helps you learn and practice new skills
- Reference software
 - Provides a collection of information and a way to access that information
 - Generally shipped on CD or DVD, or accessed on the Web

Entertainment Software

- Computer games are the most popular type of entertainment software
 - Role-playing
 - Action
 - Adventure
 - Puzzle
 - Simulation
 - Sports
 - Strategy

Business Software

- Vertical market software is designed to automate specialized tasks in a specific market or business
- Horizontal market software is generic software that just about any type of business can use
 - Payroll software
 - Accounting software
 - Project management software

Open Source Software:

- Open source software (OSS) is computer software whose source code is available under a license that permits users to use, change, and improve the software, and to redistribute it in modified or unmodified form.
- It is often developed in a public, collaborative manner.

Well-known OSS products are Linux, Netscape, Apache, etc.,

Proprietary Software:

- Proprietary software (also called non-free software) is software with restrictions on using, copying and modifying as enforced by the proprietor. Restrictions on use, modification and copying is achieved by either legal or technical means and sometimes both.
- Proponents of proprietary software are Microsoft.
- Ex: CAD, Norton Antivirus etc.,

THANK YOU