

Introduction to Information Technology IT111

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Lecture 6 - Application Software



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Learning Objectives

1. Describe what application software is, the different types of ownership rights, and the difference between installed and Web-based software.
2. Detail some concepts and commands that many software programs have in common.
3. Discuss word processing and explain what kinds of documents are created using this type of program.
4. Explain the purpose of spreadsheet software and the kinds of documents created using this type of program.

Learning Objectives

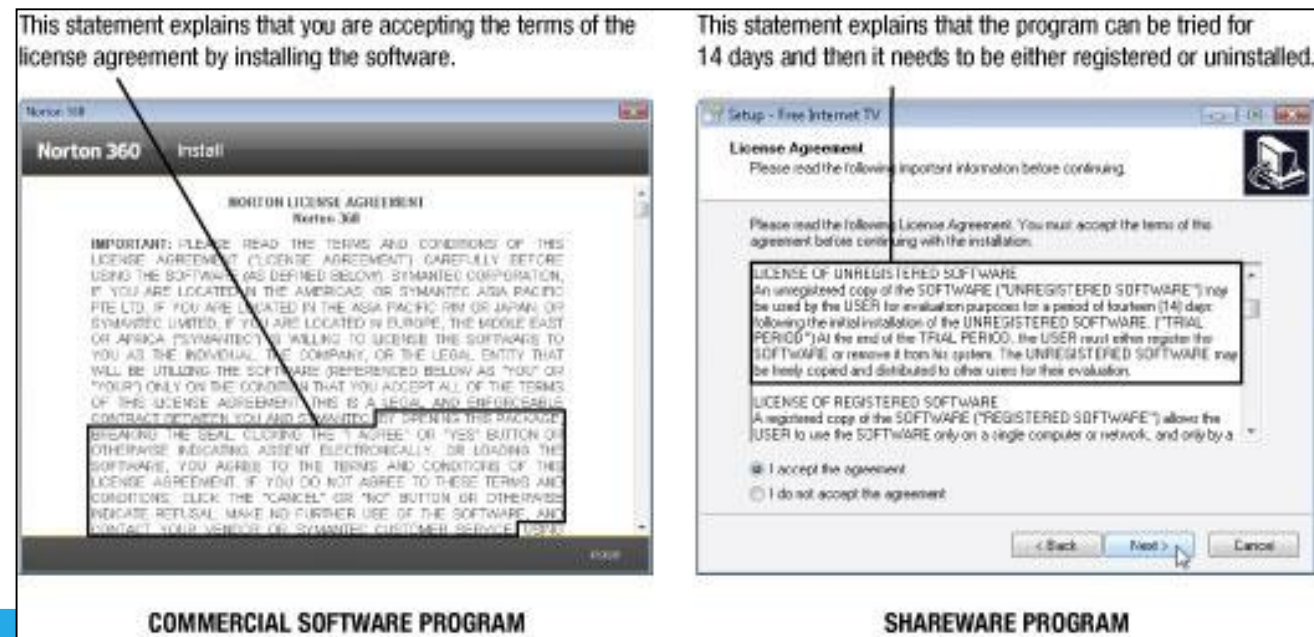
5. Identify some of the vocabulary used with database software and discuss the benefits of using this type of program.
6. Describe what presentation graphics and electronic slide shows are and when they might be used.
7. List some types of graphics and multimedia software consumers frequently use.
8. Name other types of application software programs and discuss what functions they perform.

Overview

- This lecture covers:
 - Characteristics of application software in general.
 - A look at the most widely used types of application software, including:
 - Word processing.
 - Spreadsheet.
 - Database.
 - Presentation graphics.
 - Graphics and multimedia software.
 - Other types of application software.

The Basics of Application Software

- Software ownership rights: Specify the allowable use of the program.
- Software license: Specifies the conditions under which a buyer of the program can use it.



Software Ownership Rights

- Commercial software: Copyrighted software that is developed usually by a commercial company, for sale to others.
- Shareware: Copyrighted software distributed on the honor system; consumers should either pay for it or uninstall it after the trial period.
- Freeware: Copyrighted software programs that are given away by the author for others to use free of charge.
- Public domain software: Software that is not copyrighted and ownership rights have been donated to the public domain.
- Open source software: Programs with source code made available to the general public.

Software Ownership Rights

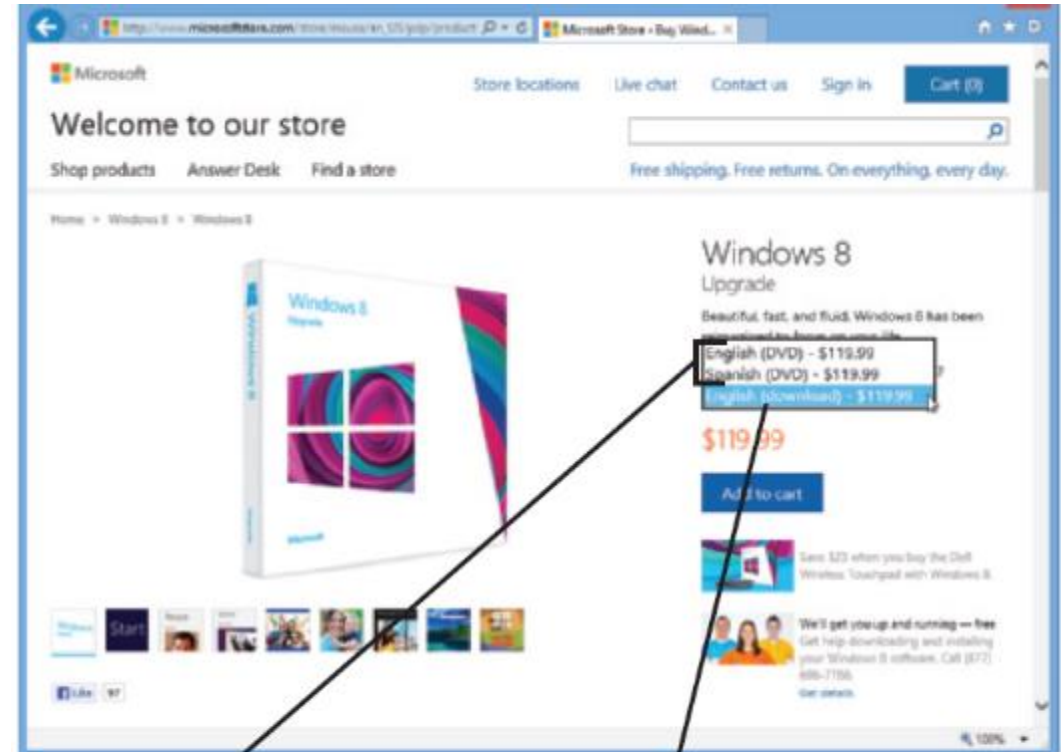


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Types of software	Examples
Commercial software	Microsoft Office (office suite) Norton AntiVirus (antivirus program) Adobe Photoshop (image editing program) Minecraft - Pocket Edition (game)
Shareware	WinZip (file compression program) Video Edit Magic (video editing program) Image Shrinker (image optimizer)
Freeware	Chrome (Web browser) LibreOffice (office suite) QuickTime Player (media player) Evernote (notetaking/archiving software)
Public domain software	Lynx (text-based Web browser) Quake 3 (game)

Installed vs. Web-Based Software

- Installed software: Must be installed on the computer before it can be run:
 - Can be purchased in physical form.
 - Can be downloaded from the Internet.



Packaged version will be shipped to the buyer.

Downloaded version will be downloaded to the buyer's computer.

Installed vs. Web-Based Software

- Web-based software: Run directly from the Internet.
 - Also called Software as a Service (SaaS) and cloudware.
 - Includes free software and fee-based software available via an application service provider (ASP).

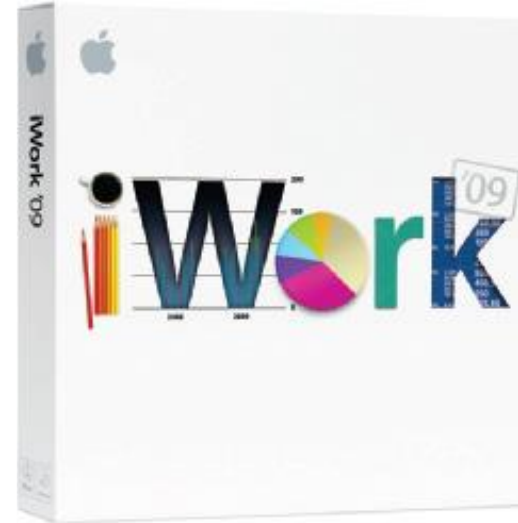


Software Suites

- Software suite: Collection of software programs bundled together and sold as a single software package .
 - Office suites are used by most businesses/individuals to produce documents.
 - Typically include:
 - Word processing software.
 - Spreadsheet software.
 - Database software.
 - Presentation graphics software.
 - Additional productivity tools like calendars, messaging programs, or collaboration tools.
 - Provides a common interface among programs in the suite.

Software Suites

- Office suites include:
 - Microsoft Office.
 - Apple iWork.
 - OpenOffice.org (free).
- Most suites available in variety of versions.
- Not all suites available for all OS.
- Cost lower than buying each program separately.



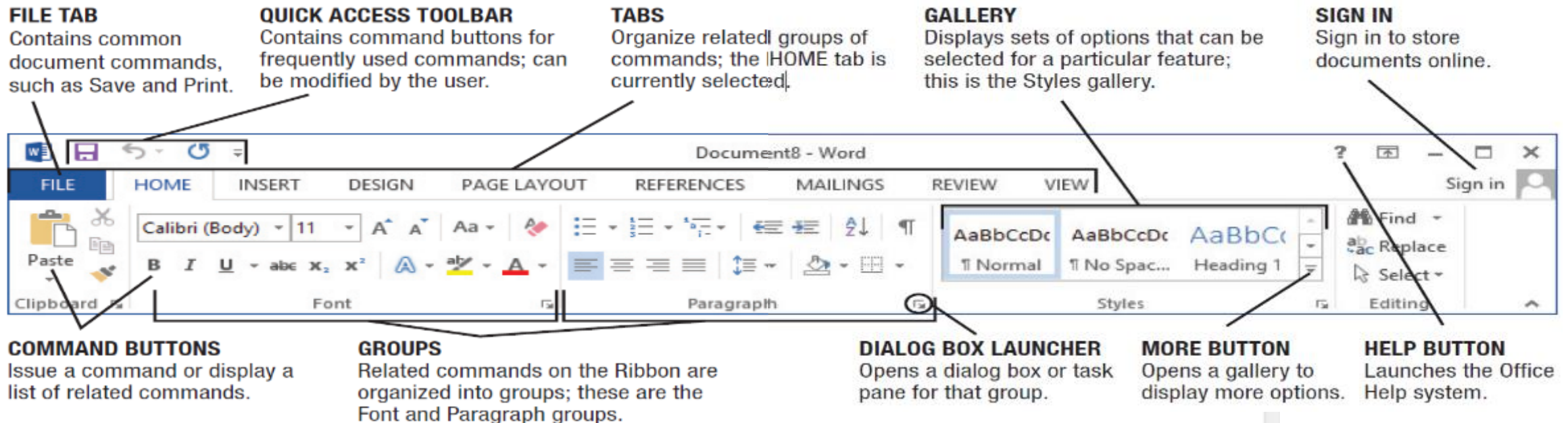
Common Software Commands

- Application programs today have a number of concepts and commands in common
 - Toolbars.
 - Menus.
 - Command buttons
 - Keyboard shortcuts.
 - Ribbon.
 - Mini toolbar.

COMMAND	COMMAND BUTTON	KEYBOARD SHORTCUT	DESCRIPTION
Open		Ctrl+O	Opens a dialog box so you can choose a saved document to open from a storage medium so it can be edited or printed.
Save		Ctrl+S	Saves the current version of the document to a storage medium.
Print		Ctrl+P	Prints the current version of the document onto paper.
Cut		Ctrl+X	Moves the selected item to the Clipboard.
Copy		Ctrl+C	Copies the selected item to the Clipboard.
Paste		Ctrl+V	Pastes the last item copied or cut to the Clipboard to the current location.
Undo		Ctrl+Z	Undoes the last change to the document.
Close		Alt+F4	Closes the document. Any changes made to the document are lost if the document wasn't saved first.

The Ribbon

- Used in Microsoft Office 2007 and later.
- Commands are organized into groups located on tabs.
- Contextual: Commands appear as they are appropriate.



Editing a Document

- Editing a document: Changing the content of the document, such as inserting or deleting words.
 - Insertion point: Indicates the current location in a document, which is where the changes will be made.
 - Typing text will insert it.
 - Delete and Backspace key will delete text.
 - Text and objects can typically be selected to be moved, copied, deleted, or formatted.

Formatting a Document

- Formatting a document: Changing the appearance of the document.
 - Changing font face, size, style, or color.
 - Changing line spacing or margins.
 - Adding page numbers or borders

This is 10-point Arial.

This is 12-point Times New Roman.

This is 16-point Lucida Handwriting.

This is 20-point Calibri.

This 16-point Calibri text is bold and italic.

This 16-point Calibri text is red and underlined.

Word Processing Concepts

- Word processing: Using a computer and word processing software to create, edit, save, and print written documents such as letters, contracts, and manuscripts.
- Common programs:
 - Microsoft Word .
 - Corel WordPerfect.
 - Apple Pages.

FONT FACE
The font face of the selected text is currently being changed.

FONT SIZE
Measured in points; the size of the selected text is 36 pts.

FILENAME
Appears on the title bar once a file has been saved one time.

ALIGNMENT
The selected text is centered.

CONTEXTUAL TAB
Provides access to additional commands when objects (such as the clip art image below) are selected.

STYLES
Can be used to apply the same formatting to similar sections of the document.

RIBBON
Contains tabs of commands; the HOME tab is selected.

LIVE PREVIEW
Changes the appearance of selected items when a formatting command is pointed to.

MINI TOOLBAR
Appears when text is selected with a mouse.

STATUS BAR
Indicates the number of pages and words currently in the document, the current document view and zoom level, and so on.

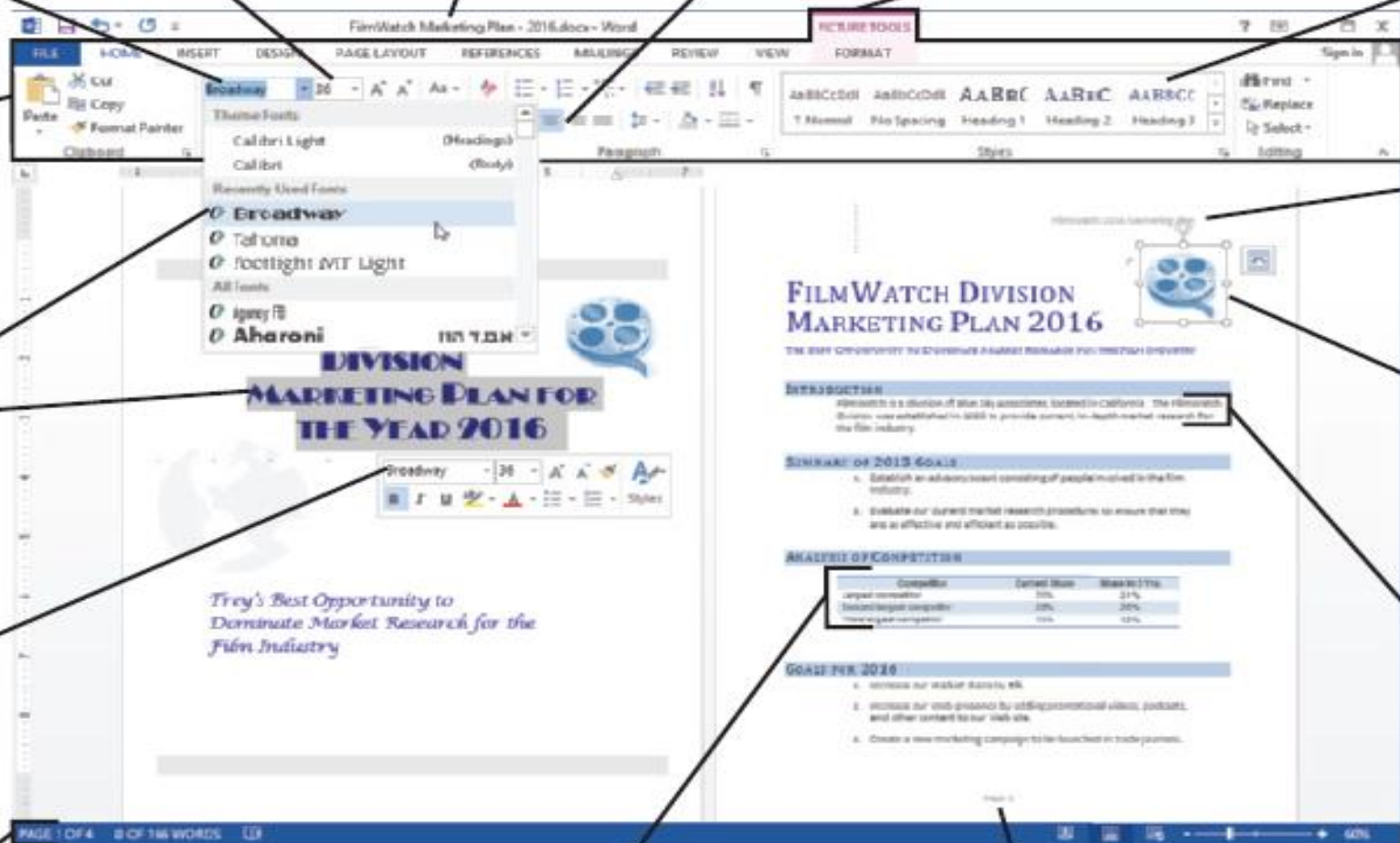
TABLE
Can be used to neatly organize data or lay out the text in a document.

FOOTER
Text entered by the user that appears at the bottom of each page. This footer contains the page number.

HEADER
Text entered by the user that appears at the top of each page.

CLIP ART
Clip art and other graphics can be inserted and resized or otherwise modified as necessary.

WORD WRAP
Wraps text to the next line automatically when the text being typed reaches the end of the screen line; the user should not press Enter until the end of the paragraph.



Creating a Word Processing Document

- Character formatting (font face, size, style, or color).
- Paragraph formatting (line spacing, indentation, tabs, alignment, and styles).
- Page formatting (margins, paper size, orientation, headers, footers, etc).
- Document formatting (footnotes, end notes, table of contents, index, background, theme).

Tables, Graphics, and Templates

- Tables: Allow content to be organized in a table consisting of rows and columns.
- Graphics or drawing features: Allow images to be inserted into a document (clip art, photographs, drawn images, etc.) and then modified
- Templates: Help users create new documents quickly.

Spreadsheet Concepts

- Spreadsheet software: Used to create electronic spreadsheets.
- Spreadsheets: Documents containing a group of numbers and other data organized into rows and columns.
- Worksheet: A single spreadsheet.
- Workbook: A collection of worksheets saved in a single file.
- Most widely used spreadsheet programs:
 - Microsoft Excel.
 - Corel Quattro Pro.
 - Apple Numbers.

NAME BOX

Identifies the active cell, which is the location of the cell pointer.

COLUMNS

Run vertically and are identified by letters.

FORMULA BAR

Lists the contents of the active cell, in this case the formula entered into cell E8.

RIBBON

Contains tabs of commands grouped by function; the HOME tab is selected.

CELL HEIGHT AND WIDTH

Can be changed to a specific value or to automatically fit the content.

NUMBER FORMATS

Used to specify the appearance of the numbers on a worksheet.

ACTIVE CELL/RANGE

Identifies the active cell or range; in this case the active cell is E8, and the range D8:E9 is selected.

WORKSHEET AREA

Contains the worksheet itself.

ROWS

Run horizontally and are identified by numbers.

WORKSHEET TABS

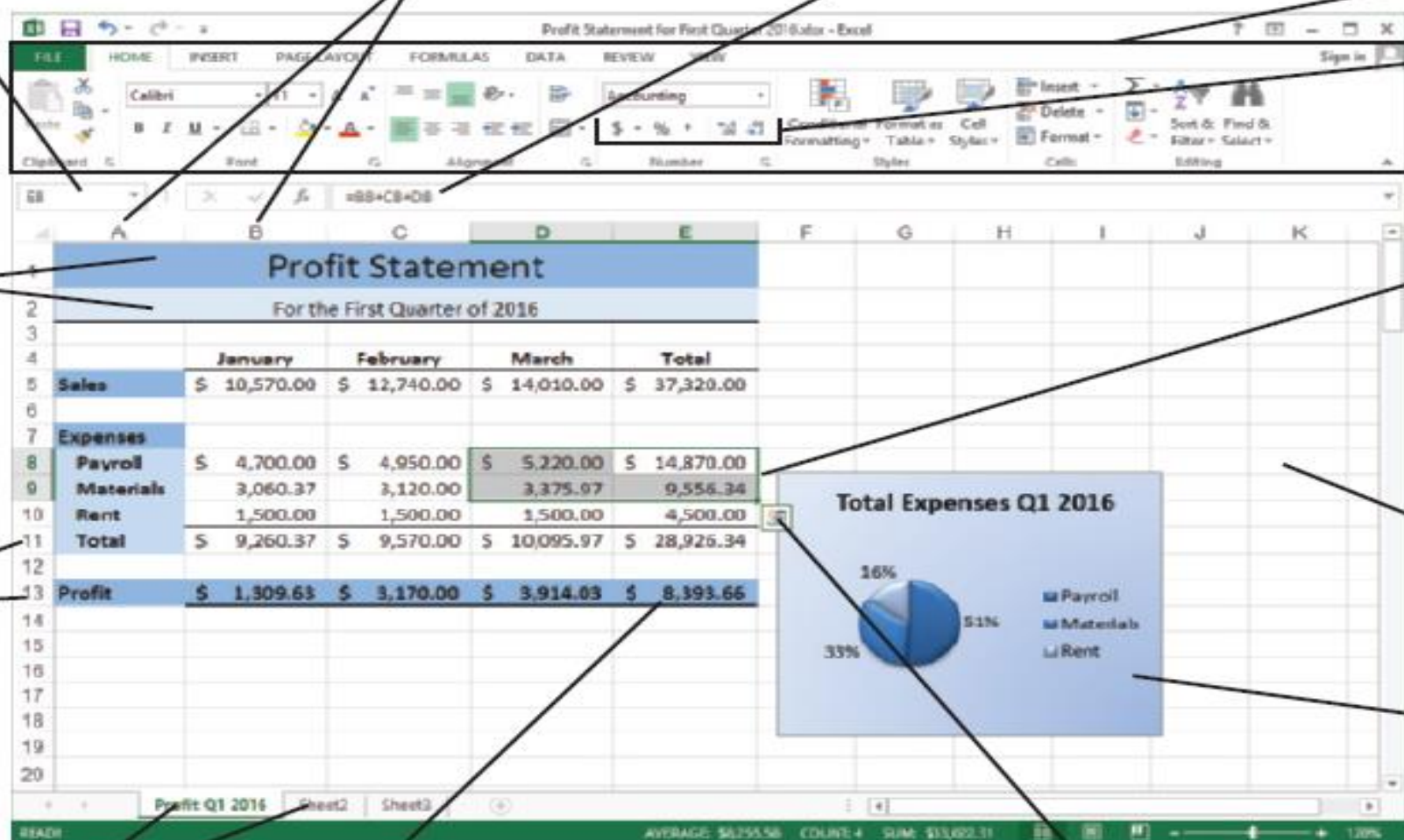
Identify the different worksheets saved in a single spreadsheet (workbook) file.

CELL FORMATTING

Can be applied to cells (this cell is shaded blue with a double bottom border) and to cell content (such as currency with two decimal places).

QUICK ANALYSIS TOOL

Allows you to quickly and easily analyze data using tools such as color-coding and graphs.



Creating a Spreadsheet

- Worksheets are divided into rows and columns.
- Cell: The intersection of a row and a column.
 - Each cell is identified by a cell address.
 - Cell pointer marks current cell.
 - Groups of cells are called ranges or blocks; can be selected with mouse or keyboard.
 - Data is entered into current cell.

Entering Data into a Spreadsheet Cell

- Cells can contain:
 - Labels: Text-based entry in a worksheet cell that identifies data on the worksheet.
 - Constant values: Numerical entry in a worksheet cell
 - Formulas: Performs mathematical operations on the content of other cells.
 - Usually reference cell address, not the current data in a cell.
 - Use mathematical operators + - / * ^.
 - e.g. $A1 = B8 + C8 + D8$.
 - Functions: Named programmed formula.
 - e.g. $A1 = \text{SUM}(B8:D8)$.

Entering Data into a Spreadsheet Cell



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SYMBOL OPERATION

+	Addition
—	Subtraction
*	Multiplication
/	Division
^	Exponentiation

EXAMPLES OF FUNCTIONS

= SUM (range)	Calculates the sum of all values in a range.
= MAX (range)	Finds the highest value in a range.
= MIN (range)	Finds the lowest value in a range.
= AVERAGE (range)	Calculates the average of values in a range.
= FV (rate, number of payments, payment amount)	Calculates the future value of an annuity at a specified interest rate.
= PMT (rate, number of payments, loan amount)	Calculates the periodic payment for a loan.
= IF (conditional expression, value if true, value if false)	Supplies the values to be displayed if the conditional expression is true or if it is false.
= NOW ()	Inserts the current date and time.

Database Concepts

- Database: A collection of related data that is stored in a manner enabling information to be retrieved as needed.
- Database management system (DBMS): Software that allows the creation and manipulation of an electronic database.
- Most widely used database programs:
 - Microsoft Access.
 - Oracle Database.
 - IBM DB2.

Database Concepts

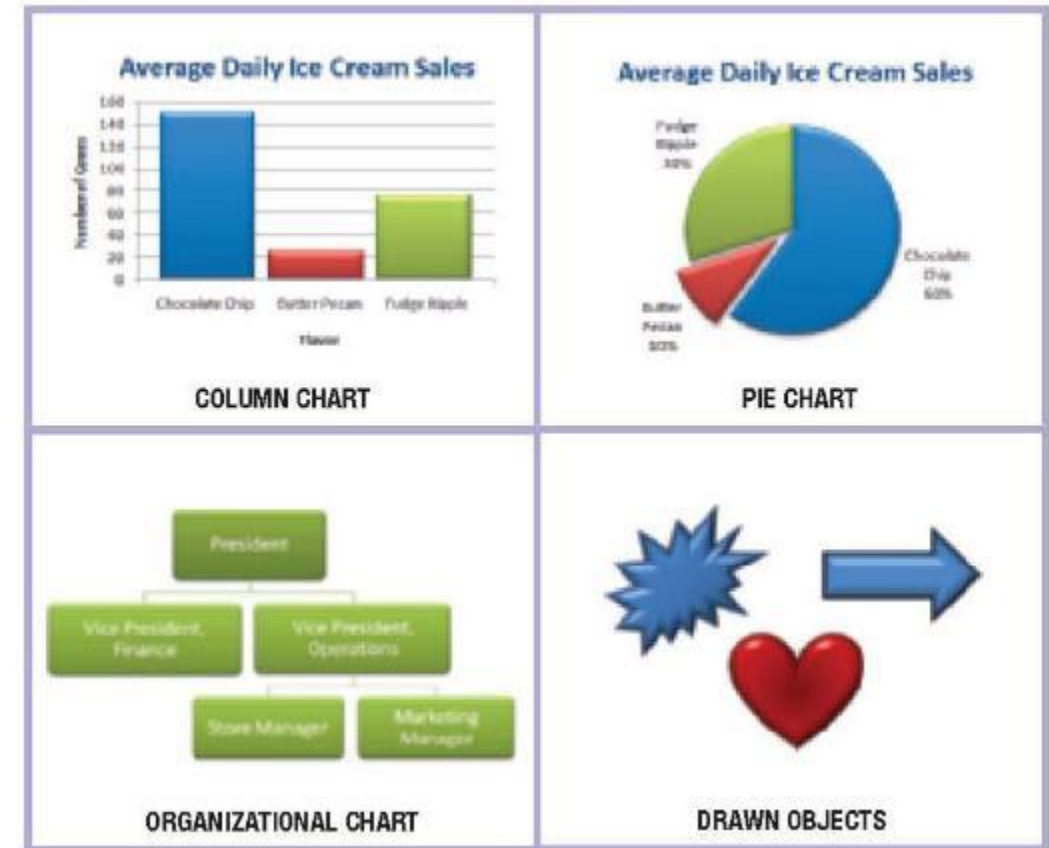
- Most PC-based databases are relational databases and organized into fields (columns), records (rows), and tables.
- Field (column): A single type of data to be stored in a database.
- Record (row): A collection of related fields.
- Table: collection of related records.
- Database file: Collection of related tables.

Creating a Database

- Database file is created first.
- Tables can then be created.
- Typically, the table structure is specified first .
 - Includes a list of fields and their properties, including:
 - Field name (unique identifying name).
 - Data type (text, number, date, object).
 - Field size (maximum number of characters).
 - Default value (initial content of the field).

Presentation Graphic Concepts

- Presentation graphic: An image designed to visually enhance a presentation.
 - Can be used in electronic slide shows, as well as in printed reports.
- Slide: A one-page presentation graphic that can be displayed in a group with others to form an electronic slide show.



Presentation Graphic Concepts

- Electronic slide show: A group of electronic slides that are displayed one after the other on a computer monitor or other display device
- Presentation graphics software: Used to create presentation graphics.
- Most common presentation graphics programs are:
 - Microsoft PowerPoint.
 - Corel Presentations.
 - Apple Keynote.

NEW SLIDES

Use the HOME tab to add a new slide.

SLIDE THUMBNAILS

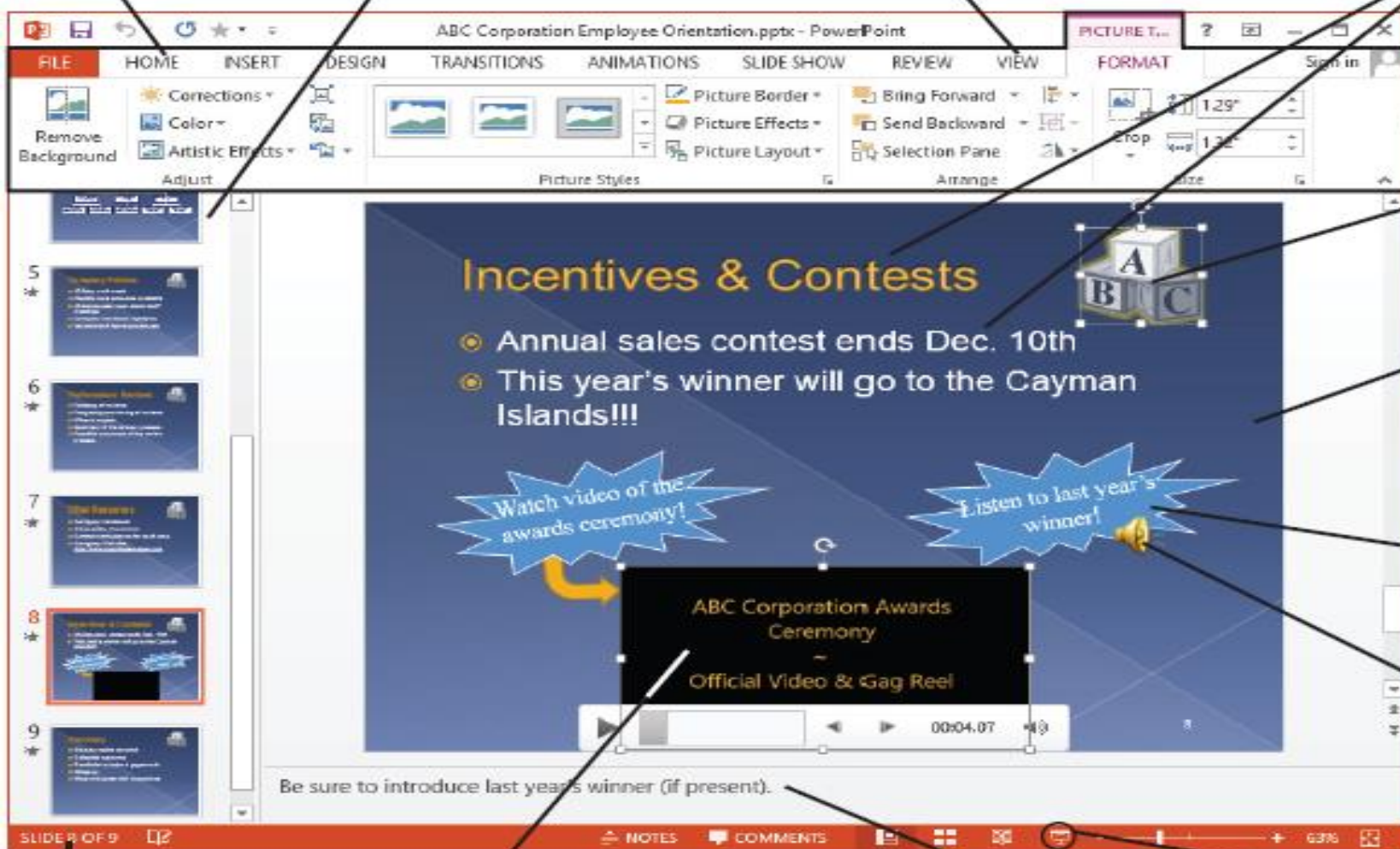
Are displayed in this pane in Normal view.

VIEW TAB

Use to change the view (such as from Normal, shown here, to Outline or Slide Sorter).

TEXT

Can be formatted using commands on the Ribbon or the Mini toolbar, like in other Office programs.

**RIBBON**

Contains tabs of commands grouped by function; the PICTURE TOOLS FORMAT tab is selected.

CLIP ART AND OTHER GRAPHICS

Can be inserted and resized or otherwise modified.

SLIDES

Can contain elements such as text, clip art, photographs, bulleted lists, charts, and video clips. Often a theme, color scheme, or design layout is used to apply a universal appearance to all slides.

DRAWN OBJECTS

Can be added, formatted, and resized; include lines, shapes, and more.

AUDIO CLIPS

Can be inserted into slides and set up to play automatically when the slide is loaded or when the sound placeholder is clicked.

STATUS BAR

Includes information such as the current slide number and the total number of slides.

VIDEO CLIPS

Can be inserted into slides and set up to play automatically when the slide is loaded or when the video placeholder is clicked.

NOTES

Can be added so they can be seen by the presenter during the slide show or included on printouts.

SLIDE SHOW BUTTON

Click to run the slide show beginning with the current slide.

Creating a Presentation

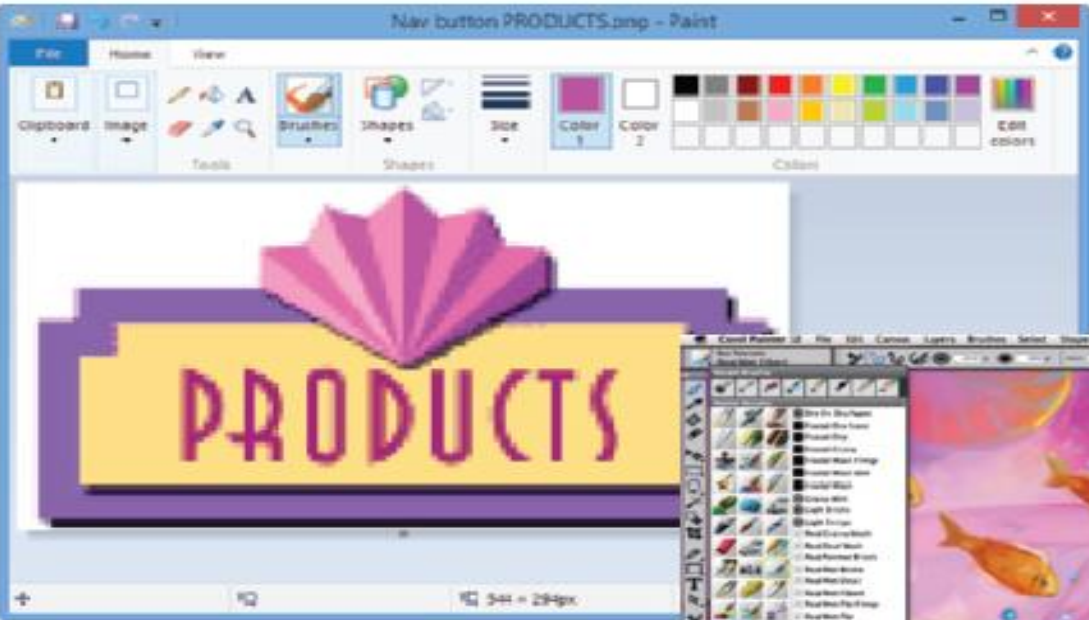
- Templates and preformatted slide layouts can often be used.
- New slides can be added as needed.
- Slides can contain a variety of elements:
 - Text.
 - Images.
 - Charts.
 - Audio clips.
 - Video clips.
- Slides can be formatted as needed.
- Multimedia and animation can be added to slides:
 - Animation.
 - Transitions.

Graphics and Multimedia Concepts

- Graphics: Graphical images, such as digital photographs, clip art, scanned drawings, and original images created using a software program.
- Multimedia: Typically refers to any application that contains more than one type of media.
 - Often used to refer to audio or video content.
- Large variety of graphics and multimedia software, such as to:
 - Create or modify graphics.
 - Edit digital audio or video.
 - Play multimedia files.
 - Burn CDs and DVDs.

Graphics Software

- Graphics software: Used to create or modify images.
 - Painting programs: Typically used to create bit-mapped images (Microsoft Paint)
 - Drawing programs: Typically create images using mathematical formulas (Adobe Illustrator, CorelDRAW).
 - Image editing or photo editing programs: Designed for touching up or modifying images:
 - Correcting brightness/contrast.
 - Cropping/eliminating red eye.
 - Optimize file size for the Web.
 - Adobe Photoshop, Apple iPhoto, etc.



PAINTING PROGRAMS
Typically create images pixel by pixel so images cannot be layered or resized.



DRAWING PROGRAMS
Typically create images using mathematical formulas so images can consist of multiple objects that can be layered, and the images can be resized without distortion.



PHOTO EDITING PROGRAMS

Allow users to edit digital photos from their computer (left) or mobile device (right).

Audio Editing Software

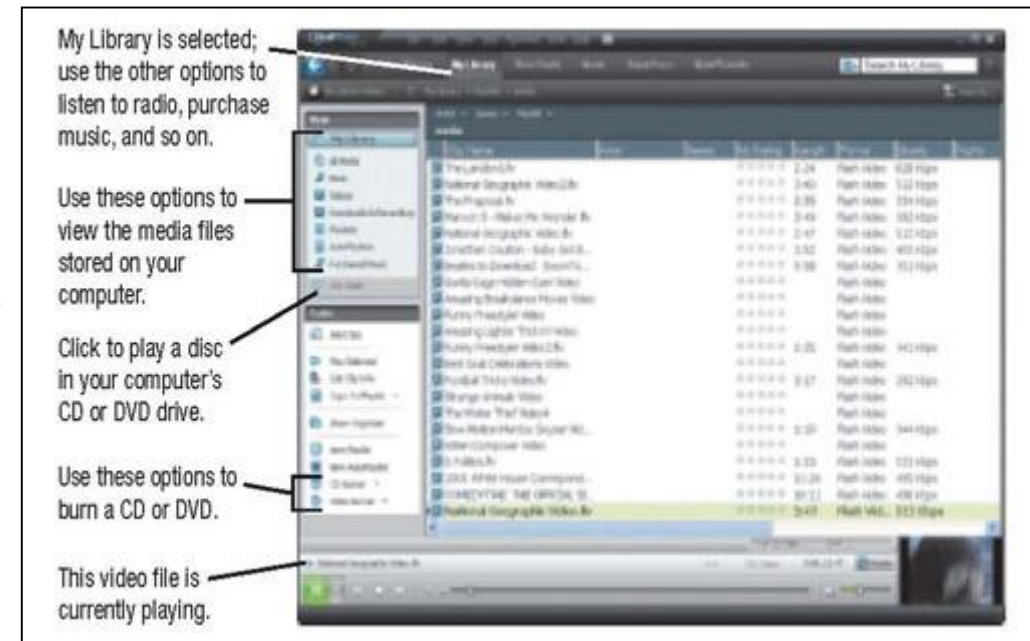
- Audio editing software: Used to create and edit audio files (narrations, podcasts, etc.)
 - Capture sound from a microphone.
 - Capture sound from a CD using ripping software.
 - Edit and apply special effects.
 - Windows Sound Recorder, Apple Garage Band, etc.

Video Editing and DVD Authoring Software

- Video editing software: Used to modify existing videos.
 - Prepare video clips for presentations or Web sites
- DVD authoring software: Used to create DVD content.
 - Importing videos, creating menus, burning onto a DVD.
- DVD burning software: Used to record data on recordable or rewritable DVDs.
 - Roxio Creator, Apple iMovie/iDVD, etc.

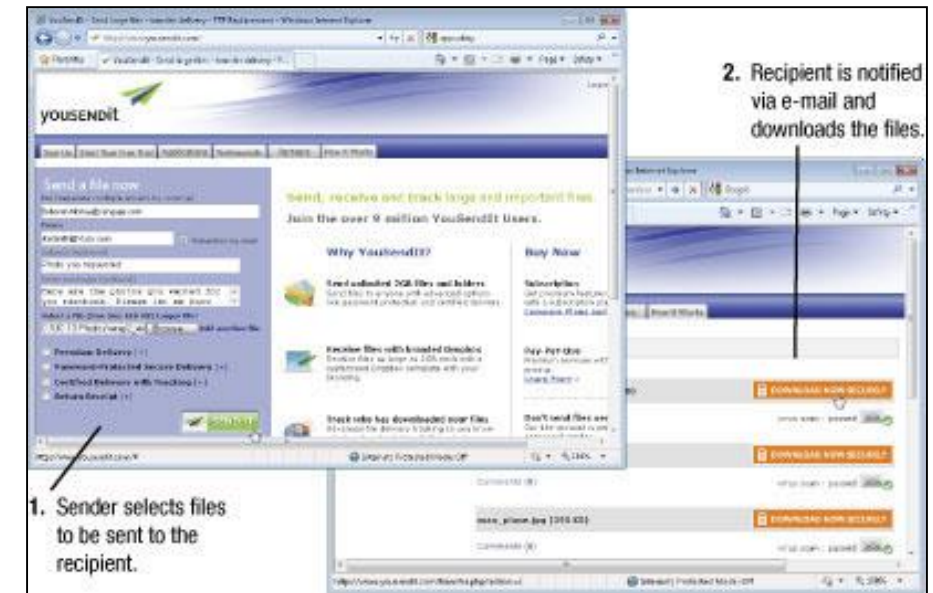
Media Players

- Media players: Programs designed to play audio and video files.
 - Music CDs, downloaded music, online audio.
 - Downloaded and online video.
 - RealPlayer, Apple QuickTime, Windows Media Player, etc.



Other Types of Application Software

- CAD and other types of design software.
- Accounting and personal finance software.
- Project management, collaboration, and remote access software.



Review

- Software Ownership Rights: Commercial software – Shareware – Freeware - Public domain software - Open source software.
- Installed vs. Web-Based Software.
- Software Suites.
- Common Software Commands.
- Editing a Document - Formatting a Document.
- Word – Excel – Database – PowerPoint .
- Graphics Software.
- Audio Editing Software.
- Media Players.

Reference

