

# Internet and Information Technology

## Lecture 6

ITC202

Application Software

Prepared by  
**Dr. Eng. Youssef Ntefeh**

# Chapter 6: Application Software

## The Basics of Application Software

Software Ownership Rights

Desktop vs. Mobile Software

Installed vs. Web-Based Software

Software Suites

Common Software Commands

## Word Processing Concepts

Creating a Word Processing Document

Tables, Graphics, and Templates

## Spreadsheet Concepts

Creating a Spreadsheet

Entering Data into a Spreadsheet Cell

## Database Concepts

What Is a Database

Creating a Database

## Presentation Graphics Concepts

Creating a Presentation

Finishing a Presentation

## Graphics and Multimedia Software

Graphics Software

Audio Capture and Editing Software

Video Editing and DVD Authoring Software

Media Players

## Other Types of Application Software

# 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.

# The Basics of Application Software



## Software Ownership Rights

- The **ownership rights** of a software program specify the allowable use of that program.
- After a software program is developed, the developer decides whether or not the program can be sold, shared with others, or otherwise distributed.
- When a software program is purchased, the buyer is not actually buying the software. Instead, the buyer is acquiring a software license that permits him or her to use the software.
- This license specifies the conditions under which a buyer can use the software, such as the number of computers on which it may be installed.

# Software Ownership Rights

- **Commercial software** is software that is developed and sold for a profit.
- When you buy a commercial software program (such as Microsoft Office) it typically comes with a single-user **license**, which means you cannot legally make copies of the installation CD
- You cannot even install the software on a second computer that you own, unless allowed by the license.
- **Software license**: determine which activities are **allowable** for a particular commercial software program.



# Software Ownership Rights

- **Shareware**: are software programs that are distributed on the **honor system**.
- Shareware programs **distributed freely** so users can evaluate it before deciding to buy it then require a small fee if you choose to use the program regularly (WinZip).
- By paying the requested registration fee, you can use the program for as long as you want to use it and may be entitled to product support, updates, and other benefits.
- Many shareware programs have a specified trial period,
- Although it is not illegal to use shareware past the specified trial period, it is **unethical** to do so.



- 
- The image features a central text label "Free Software" in a large, bold, black, sans-serif font. This text is surrounded by a diverse collection of software logos and icons arranged in a grid-like pattern. The logos include: Microsoft Teams, a red 'C' with a paintbrush, a blue 'M', a blue video camera icon, an orange fan-like icon, a cocktail glass with a pineapple, a blue parrot, a Chrome browser icon, a VLC media player icon, a blue sphere with white birds, a green Android robot, a blue and white geometric icon, a Firefox browser icon, a cat face, a red 'O', a grey cat with a pencil, a Raspberry Pi logo, a GitHub Octocat, a penguin, and a WordPress 'W' logo. The overall composition is colorful and represents a wide range of open-source and free software applications.

# Software Ownership Rights

- **Public domain software** is not copyrighted; instead, the ownership rights to the program have been donated to the public domain.
- Consequently, it is free and can be used, copied, modified, and distributed to others without restrictions.



# Desktop vs. Mobile Software

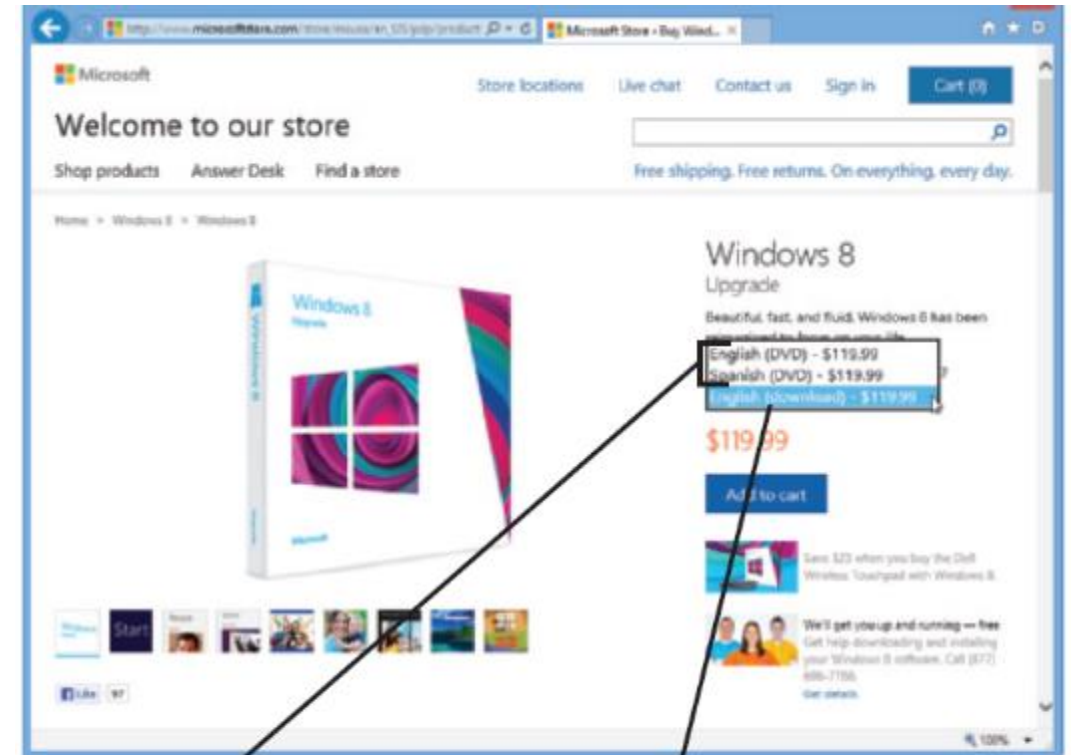
- **Mobile devices** typically require software **specifically designed** for a specific type of mobile device.
- There are mobile versions of popular programs like Word or PowerPoint, games, media players, calendars and programs that allow you to organize notes and voice recordings.
- In addition to having a more **compact**, efficient appearance, many mobile applications include features for **easier data input**, such as an onscreen keyboard, a phrase list, or handwriting recognition capabilities.



# 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.

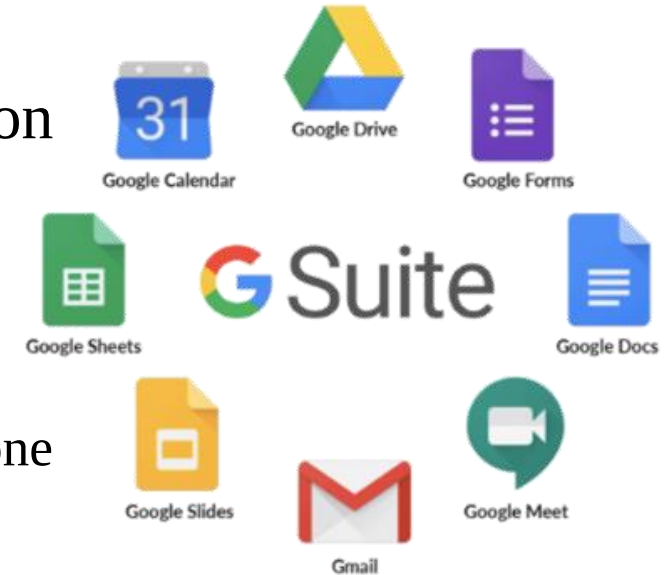


Packaged version will be shipped to the buyer.

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 use a subscription pricing scheme
- Web-based software advantages:
  - ❖ Programs and your files can be **accessed** from any computer or mobile phone with an internet connection
  - ❖ The ability to try out **new applications** for little or no out-of-pocket costs while decide whether or not to continue subscribing to the software.
  - ❖ The benefit of always working with the **most current version** of the software without having to perform software updates on company computers.



# Case Study 1: Blockbuster's Failure Due to Poor Adoption of Application Software

## Company Overview:

- Blockbuster was a global leader in movie and video game rentals, founded in 1985. At its peak in the 1990s, it operated over 9,000 stores worldwide. However, by 2010, the company filed for bankruptcy, becoming a textbook example of digital disruption and strategic failure.



# Case Study 1: Blockbuster's Failure Due to Poor Adoption of Application Software

## Strategic Failures:

- **1. Ignoring Digital Transformation:**

- ❖ Blockbuster declined an offer to purchase Netflix in 2000 for \$50 million, dismissing its subscription-based model as unsustainable.
- ❖ The company continued to rely heavily on physical store rentals while consumer preferences shifted toward digital streaming.

- **2. Rigid Business Model:**

- ❖ A significant portion of Blockbuster's revenue came from late fees, which frustrated customers and created a negative experience.
- ❖ The company failed to adapt its model to offer more flexible, user-friendly options.



# Case Study 1: Blockbuster's Failure Due to Poor Adoption of Application Software

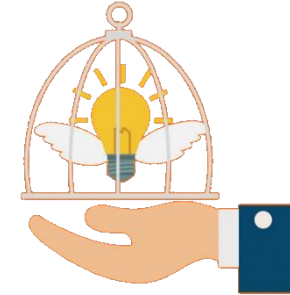
## Strategic Failures:

- **3. Lack of Innovation:**

- ❖ Blockbuster was slow to adopt digital technologies and did not invest in improving the customer experience.
- ❖ Its attempt to launch a streaming service came too late and lacked competitive features.

- **4. Underestimating Emerging Competitors:**

- ❖ Netflix, Redbox, and other startups introduced more convenient and cost-effective alternatives.
- ❖ Netflix leveraged data analytics and AI to personalize content recommendations, while Blockbuster remained traditional.



# Case Study 1: Blockbuster's Failure Due to Poor Adoption of Application Software

## Key Lessons Learned:

- ✓ **Embrace Change:** Companies must be willing to evolve with technological advancements to remain competitive.
- ✓ **Customer-Centric Thinking:** Ignoring customer preferences can lead to loss of loyalty and market share.
- ✓ **Continuous Innovation:** Market dominance is not permanent; innovation is essential for survival.
- ✓ **Respect Disruptors:** Small startups can become major threats if they offer better value and vision.



# Case Study 1: Blockbuster's Failure Due to Poor Adoption of Application Software

- **Blockbuster vs. Netflix Comparison:**

| Feature            | Blockbuster              | Netflix                        |
|--------------------|--------------------------|--------------------------------|
| Business Model     | Physical rentals         | Digital subscription streaming |
| Innovation Level   | Low                      | High (AI, original content)    |
| Expansion Strategy | Traditional retail       | Global digital reach           |
| User Experience    | Inconvenient (late fees) | Personalized and seamless      |



# Software Suites

- **Software suite:** Collection of software programs bundled together and sold as a single software package .
- Provides a **common interface** among programs in the suite.
- Cost **lower** than buying each program separately.

## OFFICE SUITES



# Software Suites

- Office suites Typically include:

- ❖ **Word processing software:** allows users to easily create and edit complex textbased documents that can also include images and other content.
- ❖ **Spreadsheet software:** Provides users with a convenient means of creating documents containing complex mathematical calculations
- ❖ **Database software:** allows users to store and organize vast amounts of data and retrieve specific information when needed.
- ❖ **Presentation graphics software:** allows users to create visual presentations to convey information more easily to others



# Common Software Commands

- Application programs today have a number of concepts and commands in **common**

| 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.                  |

# Common Software Commands

- **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.



# Common Software Commands

- **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.**

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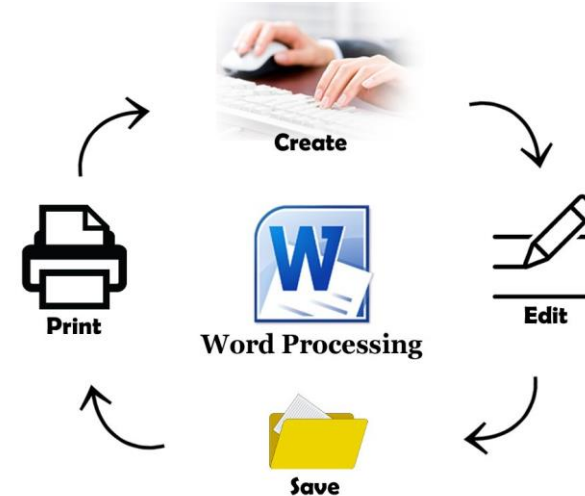
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Media Players

## Other Types of Application Software

# 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.
- Recent versions of Word save documents using the .docx extension by default,



**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.

**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.

**STATUS BAR**

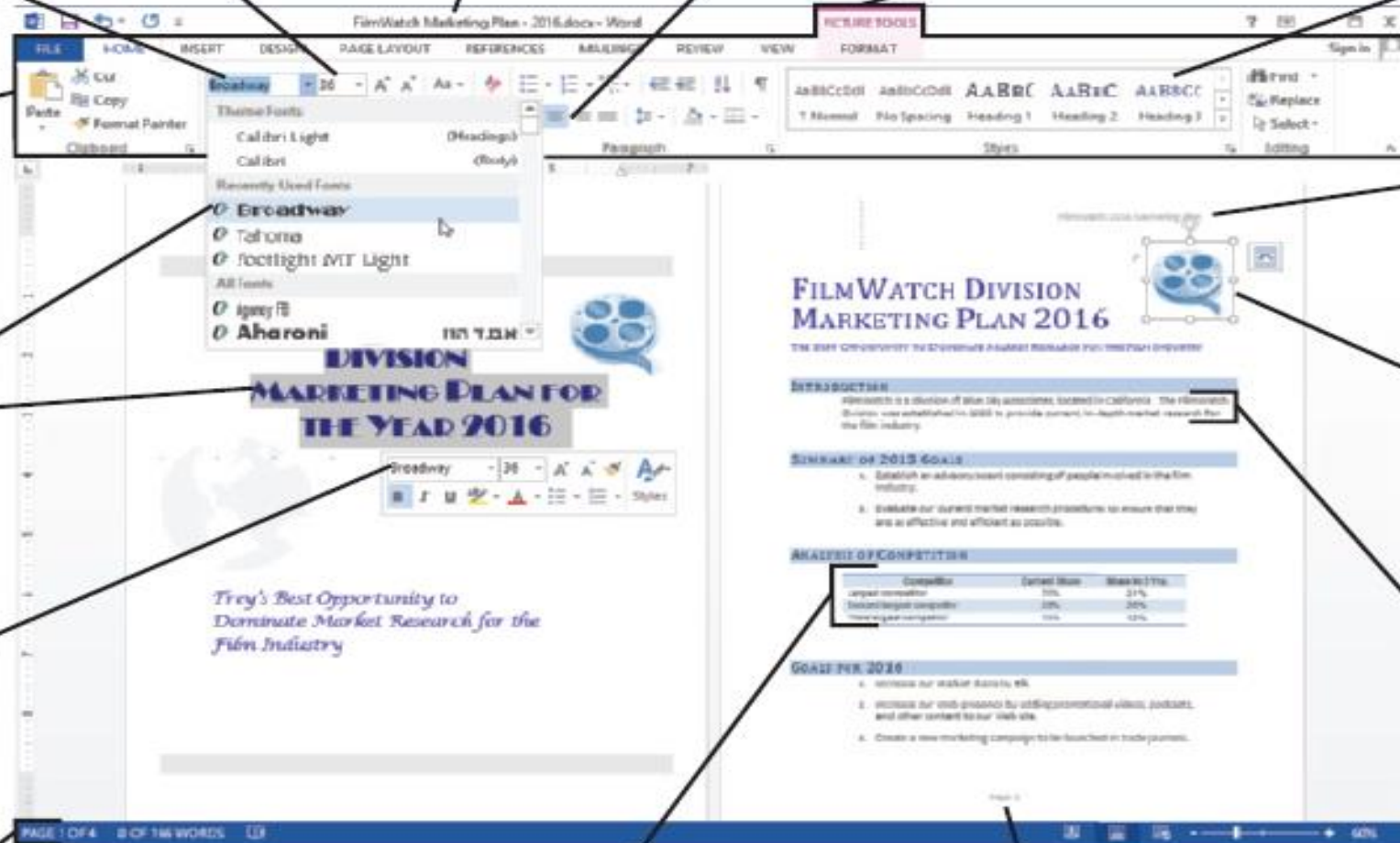
Indicates the number of pages and words currently in the document, the current document view and zoom level, and so on.

**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.



# 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).
- **Document formatting** (table of contents, index, background, theme).

# Tables, Graphics, and Templates

- **Tables:** Allow content to be organized in a table consisting of rows and columns.
- **Templates:** Help users create new documents quickly.

Four-Column Chart

Write headings for each column. Add details to each column.

| Topic _____ |  |  |  |
|-------------|--|--|--|
|             |  |  |  |
|             |  |  |  |
|             |  |  |  |
|             |  |  |  |
|             |  |  |  |
|             |  |  |  |
|             |  |  |  |



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## Other Types of Application Software

**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.

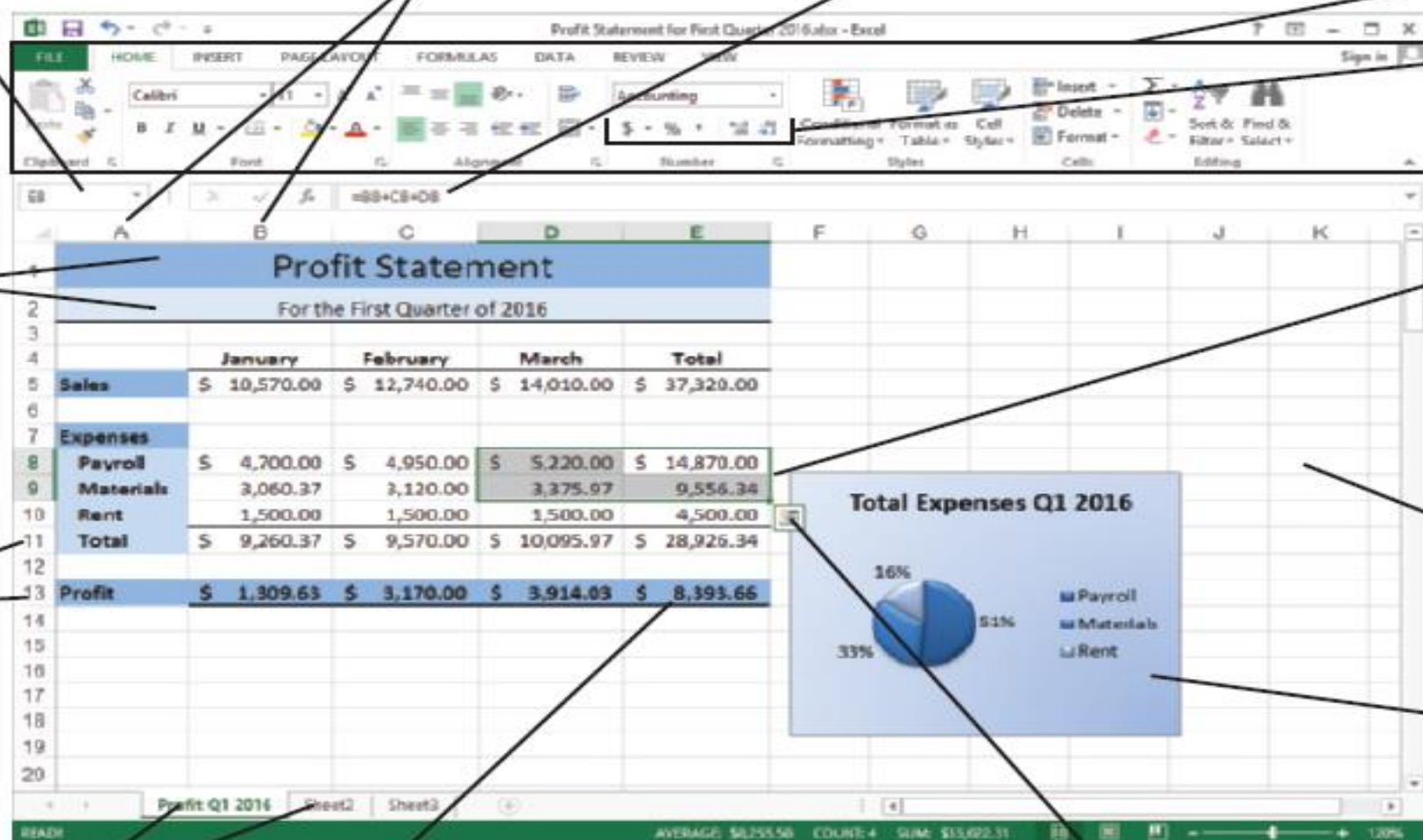
**ROWS**  
Run horizontally and are identified by numbers.

**GRAPHS**  
Are typically based on worksheet data and can be inserted into the worksheet area.

**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.



# 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.

Task List

| Task                                 | Owner            | Status      | Priority | Due Date     | Notes |
|--------------------------------------|------------------|-------------|----------|--------------|-------|
| Paint quality check                  | Alicia Jones     | In Progress | High     | 26 Aug, 2024 |       |
| Prepare client list for walk through | Monica Hemsworth | Open        | Medium   | 17 Aug, 2024 |       |
| Inspection work items                | Alicia Jones     | Open        | High     | 22 Aug, 2024 |       |
| Electrical insulation                | Chaitanya Mella  | In Progress | Medium   | 16 Aug, 2024 |       |
| Electrical walk through              | Chaitanya Mella  | Open        | High     | 14 Aug, 2024 |       |
| Celing check                         | Alicia Jones     | Closed      | High     | 19 Aug, 2024 |       |
| Insall electric service panel        | Chaitanya Mella  | Open        | Low      | 16 Aug, 2024 |       |

## Status

## Priority

4 \_\_\_\_\_

3 \_\_\_\_\_

2 \_\_\_\_\_

1 \_\_\_\_\_

0 \_\_\_\_\_

|             |   |        |   |
|-------------|---|--------|---|
| Open        | 4 | High   | 4 |
| In Progress | 2 | Medium | 2 |
| Closed      | 1 | Low    | 1 |

Pending Issues  
6

# 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

## 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.                                                           |

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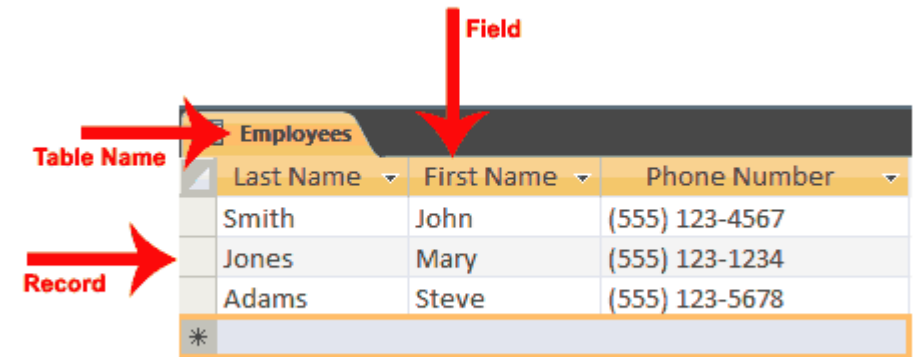
# Database Concepts

- **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.



# 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.



| Employees |            |                |
|-----------|------------|----------------|
| Last Name | First Name | Phone Number   |
| Smith     | John       | (555) 123-4567 |
| Jones     | Mary       | (555) 123-1234 |
| Adams     | Steve      | (555) 123-5678 |
| *         |            |                |

# 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).

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# 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.



# 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, and Video clips.
- Multimedia and animation can be added to slides:
  - ❖ Animation.
  - ❖ Transitions.

# Finishing a Presentation

- Once all of the slides been created the slide show is ready to be finalized.
- When the slide show is run, the slides are displayed in the designated order.
- The slides advance either automatically or manually, depending on how the presentation is set up.
- Speaker can choose a ballpoint pen, felt tip pen, or highlighter tool and “write” on the slides while the slide show is running, perhaps to circle a particular sentence for emphasis or to draw an arrow pointing to one part of the slide.

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# Graphics and Multimedia Concepts

- **Graphics:** 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.

# 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.

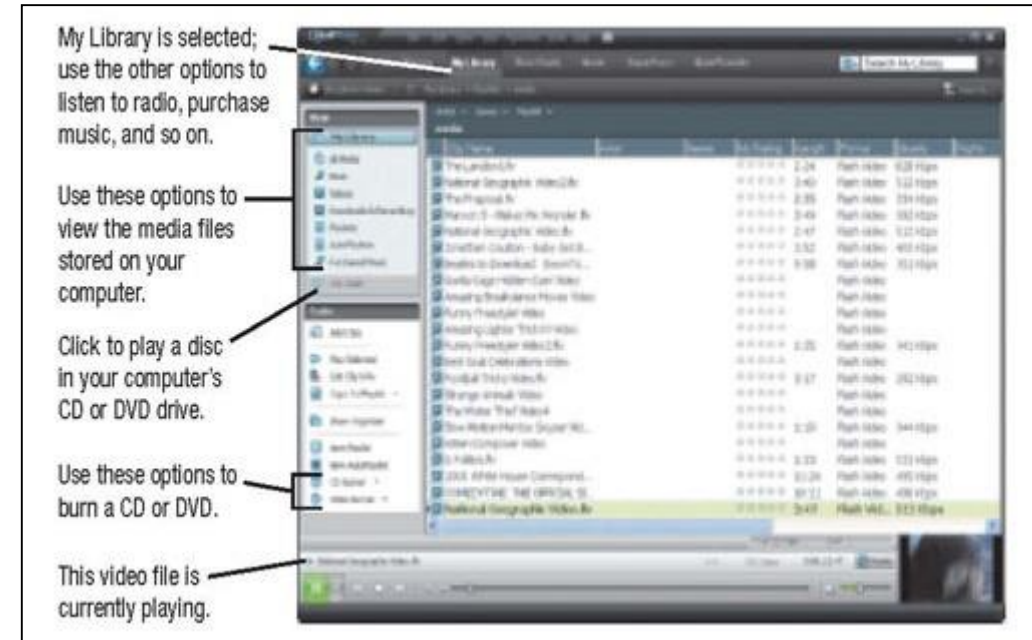


# Video Editing and DVD Authoring Software

- **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.
  - BurnAware, Ashampoo Burning, and Nero Burning ROM

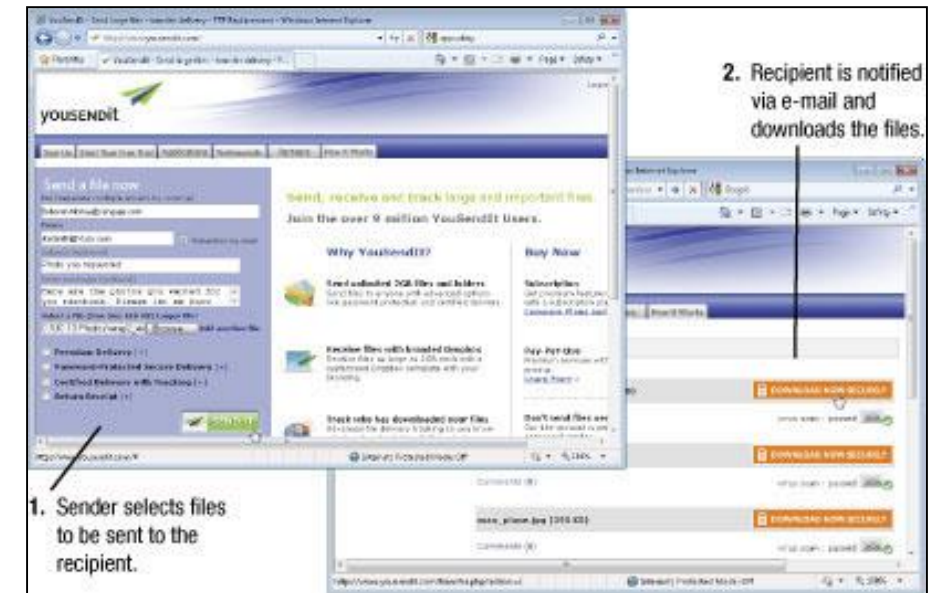
# Media Players

- **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.



# Case Study 2: Coca-Cola's Strategic Use of Microsoft Office Applications to Enhance Managerial Efficiency

## Company Overview:



- The Coca-Cola Company, a global leader in the beverage industry, operates in over 200 countries with a complex network of suppliers, distributors, and internal departments. To manage this vast ecosystem, Coca-Cola relies heavily on **application software**, particularly the Microsoft Office suite, to streamline operations, enhance communication, and support data-driven decision-making.
- This case study illustrates how Coca-Cola integrates **Word, Excel, and PowerPoint** into its daily business functions and why mastering these tools is essential for future managers.

# Case Study 2: Coca-Cola's Strategic Use of Microsoft Office Applications to Enhance Managerial Efficiency

## Application Software in Action at Coca-Cola:

### 1. Microsoft Word – Documentation and Internal Communication

- ❖ Used for drafting contracts, internal memos, policy documents, and formal correspondence.
- ❖ Standardized templates ensure consistency across departments and regions.
- ❖ Collaboration features (comments, track changes) facilitate multi-level document review and approval.

# Case Study 2: Coca-Cola's Strategic Use of Microsoft Office Applications to Enhance Managerial Efficiency

## Application Software in Action at Coca-Cola:

### 2. Microsoft Excel – Financial Analysis and Operational Planning

- ❖ Essential for budgeting, forecasting, and performance tracking across markets.
- ❖ Advanced features like PivotTables, VLOOKUP, and conditional formatting are used to analyze sales trends, inventory levels, and marketing ROI.
- ❖ Excel dashboards help managers visualize KPIs and make data-driven decisions.

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## Application Software in Action at Coca-Cola:

### 3. Microsoft PowerPoint – Strategic Presentations and Training

- ❖ Used to present quarterly results, marketing strategies, and operational updates to stakeholders.
- ❖ Visual storytelling through charts, infographics, and animations enhances message clarity.
- ❖ PowerPoint is also used in employee training programs and onboarding sessions.

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•  **Impact of Application Software on Coca-Cola’s Operations:**

| Area of Impact         | Role of Application Software               | Resulting Benefit                       |
|------------------------|--------------------------------------------|-----------------------------------------|
| Financial Management   | Excel for budgeting and forecasting        | Improved accuracy and agility           |
| Internal Communication | Word for standardized documentation        | Enhanced clarity and professionalism    |
| Strategic Planning     | PowerPoint for executive presentations     | Better stakeholder engagement           |
| Team Collaboration     | Integrated Office tools with cloud sharing | Faster decision-making and coordination |

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### ✦ Conclusion:

Coca-Cola's strategic use of Microsoft Office applications exemplifies how software tools can drive operational excellence and managerial effectiveness. For business students, learning these tools is not optional—it is a critical step toward becoming competent, data-driven, and communicative leaders in the modern workplace.

# Software Selection from a Business Perspective

## Classification of Software from a Managerial Perspective

- **1. Installed Software**
  - ❖ Installed locally on the company's devices or servers.
  - ❖ Usually purchased as a perpetual license (one-time payment).
  - ❖ Requires internal maintenance and updates.
  - ❖ Offers full control over data.
- **2. Cloud-Based Software (Web-Based Software / SaaS)**
  - ❖ Used directly via the internet without installation.
  - ❖ Based on a subscription model (monthly/yearly).
  - ❖ Maintained and updated by the service provider.
  - ❖ Accessible from anywhere.

# Software Selection from a Business Perspective

## Classification of Software from a Managerial Perspective

- **3. Open Source Software**

- ❖ Freely downloadable and modifiable.
- ❖ Often free, but may incur support or development costs.
- ❖ Supported by an active developer community.
- ❖ Requires internal technical expertise to fully utilize.

- **4. Custom Software**

- ❖ Developed specifically to meet the organization's needs.
- ❖ Requires significant time and development cost.
- ❖ Offers high flexibility and precise integration with operations.
- ❖ Maintenance depends on the development team or external provider.

There is no "perfect solution" for all organizations; the decision depends on the organization's size, budget, infrastructure, and digital strategy.

# Software Selection from a Business Perspective



| Criteria            | Installed Software                            | Cloud-Based Software (SaaS)             | Open Source Software                           | Custom Software                                  |
|---------------------|-----------------------------------------------|-----------------------------------------|------------------------------------------------|--------------------------------------------------|
| <b>Deployment</b>   | Local installation on company devices/servers | Accessed via web browser                | Downloaded and hosted internally or externally | Developed and deployed based on company needs    |
| <b>Cost Model</b>   | One-time license fee                          | Subscription-based (monthly/yearly)     | Free or low-cost (support may cost extra)      | High initial development cost                    |
| <b>Maintenance</b>  | Internal IT team responsible                  | Handled by provider                     | Requires internal or community support         | Handled by internal team or contracted developer |
| <b>Flexibility</b>  | Limited to vendor's features                  | Moderate, depending on provider         | High (modifiable source code)                  | Very high (fully tailored)                       |
| <b>Data Control</b> | Full control over data                        | Data stored on provider's servers       | Depends on hosting setup                       | Full control                                     |
| <b>Security</b>     | Depends on internal infrastructure            | Depends on provider's security measures | Varies; requires technical oversight           | Can be designed to meet specific security needs  |
| <b>Scalability</b>  | Limited by hardware                           | Easily scalable                         | Depends on infrastructure                      | Scalable if designed properly                    |
| <b>Examples</b>     | Microsoft Office (on-prem), AutoCAD           | Google Workspace, Salesforce            | Moodle, LibreOffice, Odoo                      | Custom ERP, internal HR systems                  |

# Software Selection from a Business Perspective

## **Administrative factors influencing decision-making**

When choosing the appropriate type of software, management should consider a range of strategic and organizational factors, including:

### **1. Organization Size and Operational Complexity**

- ❖ Small businesses may prefer off-the-shelf or cloud-based solutions to reduce costs.
- ❖ Large enterprises with complex operations may require custom solutions.

### **2. Available Budget**

- ❖ Custom software requires a high upfront investment.
- ❖ Cloud-based solutions offer flexible payment models (monthly/yearly).
- ❖ Open-source software may appear free but requires technical resources.

# Software Selection from a Business Perspective

## Administrative factors influencing decision-making

**3. Total Cost of Ownership (TCO):** Includes not only the purchase or subscription cost, but also:

- ❖ Maintenance and technical support.
- ❖ **Training and onboarding costs.**
- ❖ Upgrades and scalability.
- ❖ Downtime and potential disruptions.

TCO helps assess the **long-term financial impact**, not just the initial price.

## 4. Required Flexibility

- ❖ Does the organization need deep customization?
- ❖ Are business processes fixed or evolving?

# Software Selection from a Business Perspective

## Administrative factors influencing decision-making

### 5. Security and Data Control

- ❖ Some sectors (e.g., banking, government) require full control over data.
- ❖ Less sensitive organizations may accept third-party data hosting.

### 6. Internal Technical Readiness

- ❖ Is there an in-house IT team capable of managing and maintaining the software?
- ❖ Or does the organization rely on external vendors?

## **Administrative factors influencing decision-making**

### **7. Scalability and Future Growth**

- ❖ Can the system grow with the organization?
- ❖ Does it support modular expansion or integration with other systems?

### **8. Implementation Timeframe**

- ❖ Off-the-shelf solutions can be deployed within days.
- ❖ Custom solutions may take months to develop and implement.

## Practical Examples from Real-World Scenarios

### 1. Small Business Using Cloud-Based Software

- ❖ **Context:** A digital marketing startup with 10 employees.
- ❖ **Choice:** Google Workspace, Trello, and Zoho CRM.
- ❖ **Managerial Rationale:** Minimize costs, ease of use, no need for internal IT staff.
- ❖ **Outcome:** Fast setup, remote work flexibility, and tool integration.

# Software Selection from a Business Perspective

## Practical Examples from Real-World Scenarios

### 2. Manufacturing Enterprise Using Custom Software

- ❖ **Context:** A large automotive factory requiring a fully integrated ERP system.
- ❖ **Choice:** Custom-developed software for supply chain, production, and inventory management.
- ❖ **Managerial Rationale:** Complex operations needing precise integration with production lines.
- ❖ **Outcome:** High operational efficiency, but with significant development and maintenance costs.

## Practical Examples from Real-World Scenarios

### 3. Government Entity Using Open Source Software

- ❖ **Context:** A Ministry of Education aiming to launch a national e-learning platform.
- ❖ **Choice:** Moodle as an open-source learning management system.
- ❖ **Managerial Rationale:** Reduce dependency on foreign vendors and maintain full data control.
- ❖ **Outcome:** Major cost savings, with the need for an internal technical team.

## Practical Examples from Real-World Scenarios

### 4. Consulting Firm Using Installed Software

- ❖ **Context:** A mid-sized legal firm requiring secure office tools.
- ❖ **Choice:** Microsoft Office (on-premises version) with internal servers.
- ❖ **Managerial Rationale:** High privacy requirements and no reliance on internet access.
- ❖ **Outcome:** Strong data security and full control, with ongoing internal maintenance costs.

# Software Selection from a Business Perspective

## Analysis tools that help managers make decisions

### SWOT Analysis for Software Selection

|                      |                                                                                                                                                                                                                                                                                                                      |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strengths</b>     | <ul style="list-style-type: none"> <li>- Ease of use (in off-the-shelf and cloud-based software)</li> <li>- Full control over data (in installed and custom software)</li> <li>- Flexibility for customization (in custom and open-source software)</li> </ul>                                                       |
| <b>Weaknesses</b>    | <ul style="list-style-type: none"> <li>- High development costs (in custom software)</li> <li>- Reliance on an external provider (in cloud software)</li> <li>- Requirement of technical expertise (in open source software)</li> </ul>                                                                              |
| <b>Opportunities</b> | <ul style="list-style-type: none"> <li>- Easy scalability (in cloud software)</li> <li>- Integration with AI technologies</li> <li>- Supporting internal innovation through customization</li> </ul>                                                                                                                 |
| <b>Threats</b>       | <ul style="list-style-type: none"> <li>- Security and privacy risks (especially in cloud solutions)</li> <li>- Support discontinuation or changes to terms of service (in commercial software)</li> <li>- Long-term maintenance difficulties (in custom or open source software without official support)</li> </ul> |

# Software Selection from a Business Perspective

- Software selection in organizations **is not simply** a technical decision; it is a **strategic** one closely linked to the organization's size, budget, operational complexity, technical readiness, and future goals.
- Understanding the various software categories—from installed software to cloud, open source, and custom software—helps managers make informed decisions that **balance** operational efficiency, **financial flexibility**, and **information security**.
- Using analytical tools such as **SWOT** analysis enhances management's ability to comprehensively evaluate available options.
- Ultimately, there **is no perfect software** that fits all organizations; success lies in selecting the most appropriate solution that aligns with each organization's organizational and strategic context.

# Review

## The basics of application software

- **Application software** is software designed to carry out a specific task.
- Many application software programs today are commercial software programs that are developed and sold for a profit.
- When a software program is purchased, individual users receive a software license authorizing them to use the software.
- Other software is available as shareware, freeware, or public domain software.
- Software is designed as either desktop software or mobile software.
- Installed software is installed on a local computer or network server; web-based software, which is also called software as a service (saas) and cloudware, is run from the internet instead.

## **The basics of application software**

- Many office-oriented programs are sold bundled together as a software suite.
- One of the most widely used software suites is microsoft office.
- Editing a document changes its content
- Formatting a document changes its appearance (such as by changing the font face, font size, or font style of text, or by changing the line spacing or margins).

# Review

## **Word processing concepts**

- Word processing refers to using a computer and word processing software to create, manipulate, and print written documents, such as letters, contracts, and so forth.
- Formatting can be applied at the character, paragraph, or document level.
- Other enhancements found in most word processing programs include the ability to include graphical images and tables, and to use styles, and templates.
- Most word processors also include a spelling and grammar check feature and other useful tools.

# Review

## Spreadsheet concepts

- Spreadsheet software is used to create documents that typically include a great deal of numbers and mathematical computations
- A collection of worksheets stored in the same spreadsheet file is called a workbook.
- A worksheet is divided into rows and columns that intersect to form cells, each of which can be accessed through a cell address, such as b3.
- A rectangular group of cells is referred to as a range.
- Content is entered into individual cells and may consist of labels, constant values, formulas, or functions.

# Review

## Database concepts

- A database management system (DBMS) enables the creation of a database
- Database: a collection of related data stored in a manner so that information can be retrieved as needed.
- In a relational dbms
- Field or column is a collection of characters that make up a single piece of data, such as a name or phone number
- Record or row is a collection of related fields;
- Table is a collection of related records.
- One or more tables can be stored in a database file.

## **Presentation graphics concepts**

- Presentation graphics are images used to visually enhance the impact of information communicated to other people.
- Presentation graphics software can be used to create presentation graphics and electronic slide shows consisting of electronic slides.
- Multimedia elements, such as images and video clips, can also be included.
- After all slides have been created for a presentation, the order of the slides can be rearranged and transitions between the slides can be specified.

# Review

## Graphics and multimedia concepts

- Graphics are graphical images, such as digital photographs, clip art, and original art. Multimedia refers to applications that include more than one type of media, but often refers to audio and video content.
- To create graphics, graphics software—such as a painting, a drawing, or an image editing program—can be used.
- Audio editing, video editing, and dvd authoring software are common types of multimedia programs, as are the media player programs used to play audio and video files.
- Cd and DVD burning software can be used to burn songs or other data on a cd or dvd disc.

## **Other types of application software**

- Computer-aided design (CAD) and other types of design software, accounting software, personal finance software, and project management software.
- The use of collaboration, remote access, and note taking software is growing.
- Educational, entertainment, and reference software are very popular with home users.

# Reference

15th Edition

## Understanding Computers

Today and Tomorrow

Comprehensive



Deborah Morley