

Lab Manual  
**INTRODUCTION TO  
INFORMATION  
& COMMUNICATION  
TECHNOLOGY**

CSC-111

**FALL 2025**

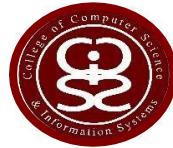
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**INSTITUTE OF BUSINESS MANAGEMENT COLLEGE OF  
COMPUTER SCIENCE & INFORMATION SYSTEM  
COMPUTER SCIENCE DEPARTMENT**



**RUBRICS GUIDELINE FOR SOFTWARE BASED LAB**

**Course Name (Course Code): M1-26377 Semester, Batch: Fall 2025**

**Name of Student:** \_\_\_\_\_ **Roll No.** \_\_\_\_\_

Criteria	Score	Exceeds Expectations (>=90%)	Meets Expectations (70%-89%)	Developing (50%-69%)	Unsatisfactory (<50%)
<b>Digital Competencies</b>	<b>3</b>	Able to use software with its standard and advanced features without assistance	Able to use software with its standard and advanced features with minimal assistance	Able to use software with its standard features with assistance	Unable to use the software
<b>Technical Implementation</b>	<b>3</b>	Able to program/simulate the lab tasks with simplification	Able to program/simulate the lab tasks without errors	Able to program/simulate lab tasks with errors	Unable to program/simulate
<b>Lab Evaluation Results</b>	<b>3</b>	Able to achieve all the desired results in alternate ways	Able to achieve all the desired results	Able to achieve most of the desired results with errors	Unable to achieve the desired results
<b>Laboratory Manual</b>	<b>1</b>	The laboratory manual has no grammatical and/ or spelling errors. All sections of the report are very well-written and technically accurate.	The laboratory manual has very few grammatical/ spelling errors. All sections of the report are technically accurate.	The laboratory manual has multiple grammatical/ spelling errors. A few sections of the report contain technical errors.	The laboratory manual has several grammatical/ spelling errors and sentence construction is poor.

**RUBRIC-LABORATORY MANUAL**

<i>Course Name (Course Code):</i>	<i>Semester, Batch:</i>
<i>Name of Student:</i>	<i>Roll No:</i>

	<b>Score Sheet</b>				
<b>Lab</b>	<b>Digital Competencies (3)</b>	<b>Problem-Solving Skills (3)</b>	<b>Lab Evaluation Results (3)</b>	<b>Lab Manual (1)</b>	<b>Total Score (10)</b>
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
				<b>Total</b>	

<b>Formula = (obtained marks/140) *25</b>	
<b>Total lab manual marks</b>	<b>25</b>

# Lab 1

## INTRODUCTION TO HYPERTEXT MARKUP LANGUAGE

### Objectives

The purpose of this lab is to:

1. Understand the concepts of HTML and basic HTML program structure.
2. Learn and practice essential HTML tags.
3. Install and use Visual Studio Code (IDE) for writing and running HTML files.

### Tools / Software Requirement

- Visual Studio Code
- Web Browser (Chrome, Edge, Firefox, etc.)

### DESCRIPTION

#### 1. What is HTML?

HTML (**H**yper**T**ext **M**arkup **L**anguage) is the standard language used to create and design web pages.

Key points:

- HTML uses **tags** embedded inside a text document.
- Tags look like:  
`<b>formatted text</b>`
- `<b>` is the opening tag, `</b>` is the closing tag.
- Web browsers read these tags and display formatted content accordingly.

#### 2. What are HTML Tags?

- Tags **mark-up content** in an HTML document.
- Tags are enclosed in **angle brackets** `<>`.
- Most tags come in **pairs**:  
Example: `<p> ... </p>`
- The text written between the pair is the **element content**.
- HTML tags are **not case sensitive**.

#### 3. Basic Structure Tags in HTML

##### 3.1 `<html>` Tag

Defines the beginning and end of an HTML document.

`<html> ... </html>`

##### 3.2 `<head>` Tag

Contains important document information such as:

- Title
- Meta-data
- Styles

- Scripts

### 3.3 <title> Tag

Gives the **title of the webpage** shown on the browser tab.

### 3.4 <body> Tag

Contains **all visible content** shown on the webpage.

## BLOCK LEVEL TAGS

### 3.1 HTML Headings

Defined using <h1> to <h6>

- <h1> → largest heading
- <h6> → smallest heading

### 3.2 HTML Paragraphs

Defined using:

<p>This is a paragraph.</p>

### 3.3 Line Break

For a line break without a new paragraph:

<br/>

### 3.4 Horizontal Rule

Used as a divider between content:

<hr>

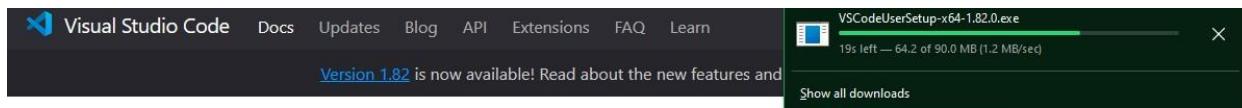
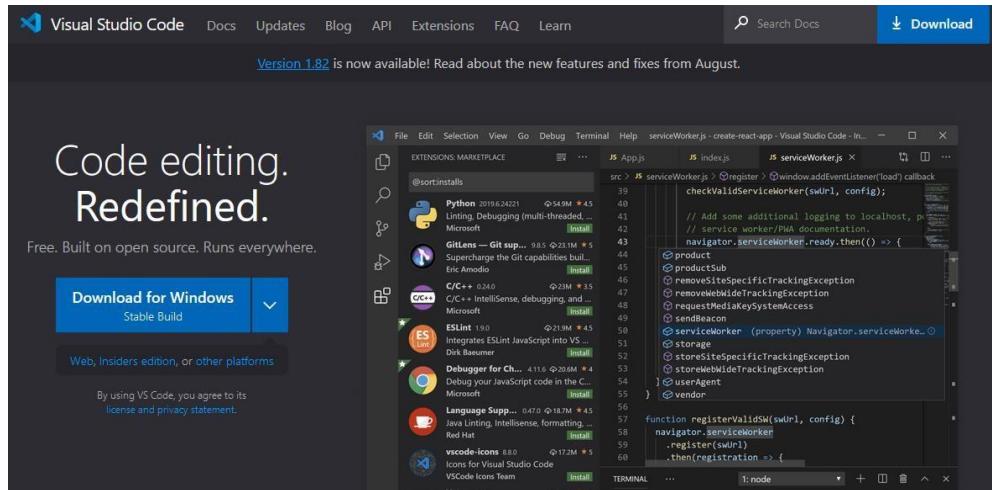
## 4. HTML Text Formatting Tags

Tag	Description
<b>	Bold text
<em>	Emphasized text
<i>	Italic text
<small>	Small text
<strong>	Strong (important) text
<sub>	Subscript text
<sup>	Superscript text
<ins>	Inserted text
<del>	Deleted text

## SETTING UP VISUAL STUDIO CODE FOR HTML

### 1. Download & Install VS Code

1. Visit: <https://code.visualstudio.com/>
2. Click **Download** for your operating system.
3. Run the installer and follow instructions.



**OVERVIEW**

- SETUP
- GET STARTED
- USER GUIDE
- SOURCE CONTROL
- TERMINAL
- LANGUAGES
- NODEJS / JAVASCRIPT
- TYPESCRIPT
- PYTHON
- IAVA

**Thanks for downloading VS Code for Windows!**

Download not starting? Try this [direct download link](#).

Please take a few seconds and help us improve ... click to [take survey](#).

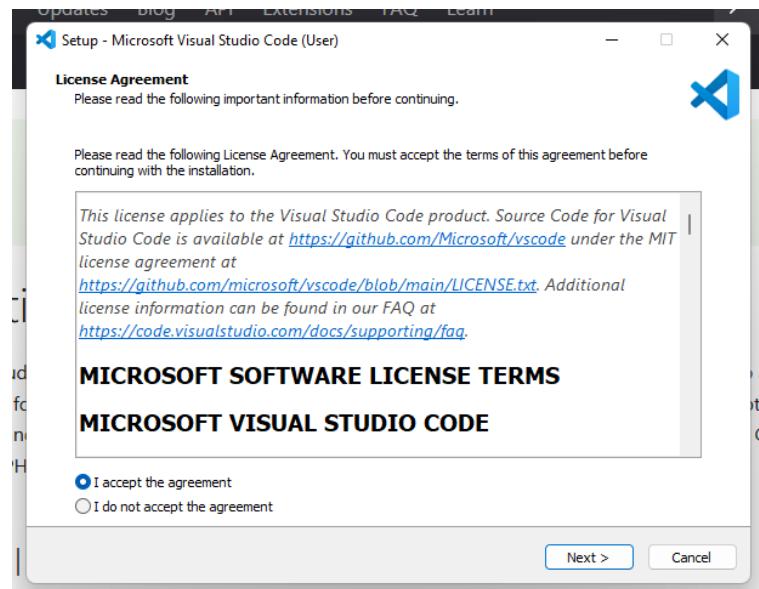
## Getting Started

Visual Studio Code is a lightweight but powerful source code editor which runs on your desktop and is available for Windows, macOS and Linux. It comes with built-in support for JavaScript, TypeScript and Node.js and has a rich ecosystem of extensions for other languages and runtimes (such as C++, C#, Java, Python, PHP, Go, .NET). Begin your journey with VS Code with these [introductory videos](#).

**GETTING STARTED**

- VS Code in Action
- Top Extensions
- First Steps
- Keyboard Shortcuts
- Downloads
- Privacy

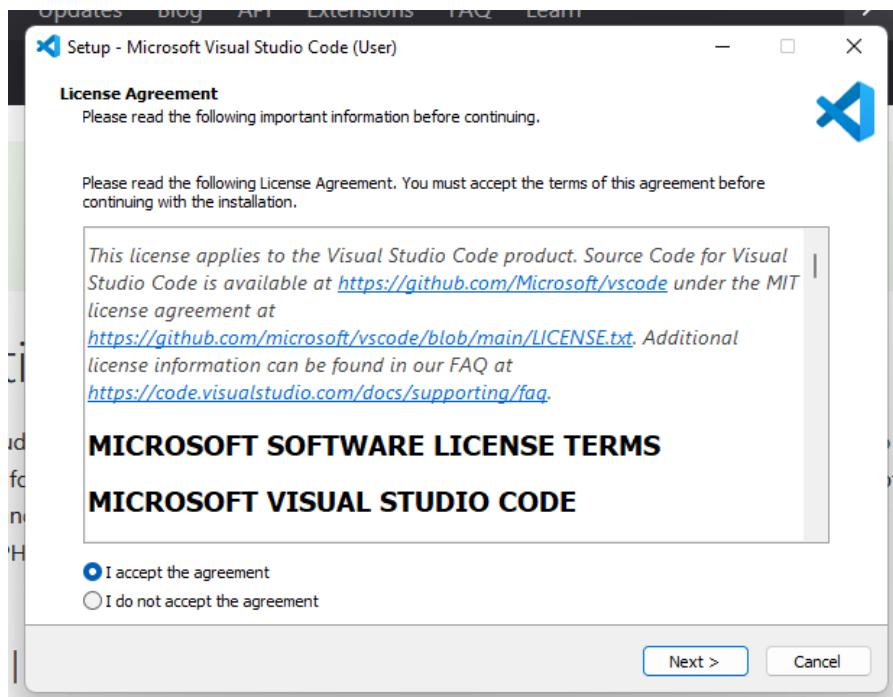
[Subscribe](#)  
 [Ask questions](#)  
 [Follow @code](#)  
 [Request features](#)  
 [Report issues](#)

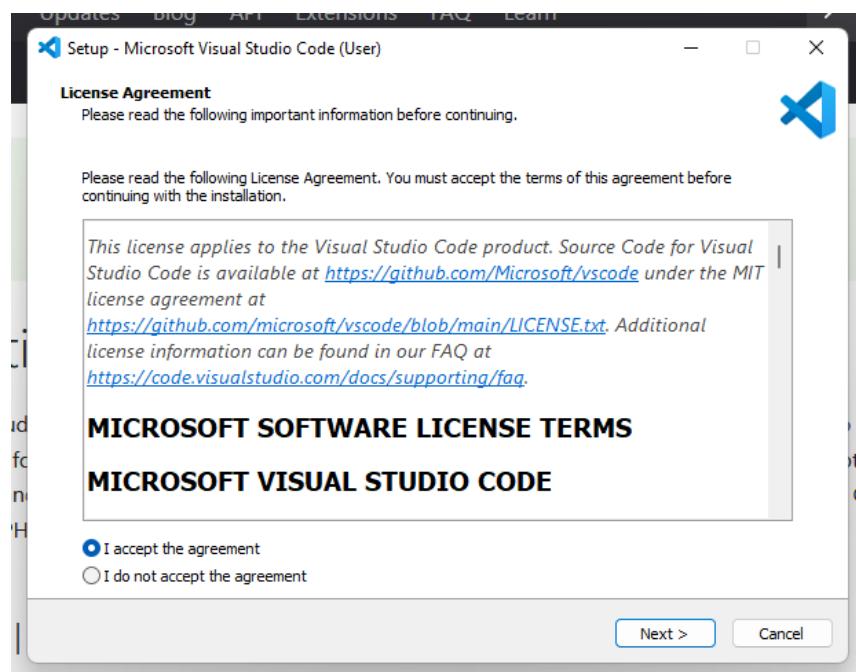


## 2. Install Helpful Extensions

Open VS Code → Click **Extensions** icon → Search and install:

- **HTML Language Features**
- **Live Server**
- **Auto Close Tag**
- **Auto Rename Tag**
- **Emmet**
- **Prettier – Code Formatter**
- **HTML Snippets**





### 3. Create a New HTML File

1. Open VS Code
2. File → New File
3. Save as index.html
4. Start writing HTML code

To preview:

- Right-click → **Open with Live Server**

VS Code will auto-refresh changes.

## ADDITIONAL HTML ELEMENTS

### 1. Lists

Ordered List

```
<ol>
<li>Item 1</li>
<li>Item 2</li>
</ol>
```

Unordered List

```
<ul>
<li>Item A</li>
<li>Item B</li>
</ul>
```

## 2. Hyperlinks

<a href="https://www.example.com">Visit Example</a>

## 3. Images



## 4. Tables

```
<table border="1">
<tr>
  <th>Header 1</th>
  <th>Header 2</th>
</tr>
<tr>
  <td>Data 1</td>
  <td>Data 2</td>
</tr>
</table>
```

# LAB ACTIVITY

## Task 1 — Create Your First HTML Page

1. Open VS Code or Notepad.
2. Create a new file named **index.html**.
3. Write the basic HTML structure.
4. Save and open in a browser.

## Task 2 — Explore Basic HTML Tags

In **index.html**, include:

- <h2> (subheading)
- <p> (paragraph)
- <em> (emphasized text)
- <strong> (bold/strong text)
- <a> (hyperlink)

Save and refresh your browser.

## Task 3 — Create Lists

1. Create a new file: **lists.html**
2. Add:
  - Ordered list of 3 hobbies
  - Unordered list of 3 favorite movies
3. Open in browser.

## Task 4 — Add Hyperlinks

In **lists.html**:

- Add hyperlinks to your favorite websites using <a href="">.

## Task 5 — Insert Images

Still in **lists.html**:

- Insert one or more images using <img>
- Add an alt description

## Task 6 — Create a Table

In **lists.html**:

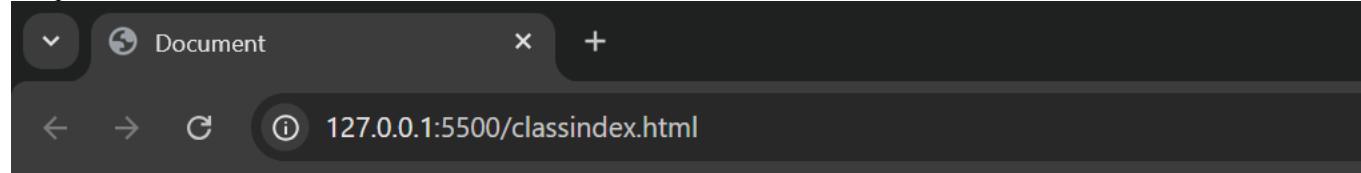
- Make a table with **3 rows and 3 columns**
- Add headers using <th>
- Fill remaining cells using <td>

## TASK 1

Program:

```
1  Task 1
2  <!DOCTYPE html>
3  <html lang="en">
4  <head>
5  |  <meta charset="UTF-8">
6  |  <meta name="viewport" content="width=device-width, initial-scale=1.0">
7  |  <title>Document</title>
8  </head>
9  <body>
10
11 </body>
12 </html>
```

Output:



Task 1

Task 2:

Program:

```

1  Task 2
2  <!DOCTYPE html>
3  <html lang="en">
4  <head>
5  | <meta charset="UTF-8">
6  | <meta name="viewport" content="width=device-width, initial-scale=1.0">
7  | <title>Document</title>
8  </head>
9  <body>
10 <h2>lorem</h2>
11 <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. <em>do eiusmod
12 tempor incididunt ut labore et dolore magna aliqua.</em> <br>do eiusmod
13 tempor incididunt ut labore et dolore magna aliqua.<strong> Ut enim ad
14 minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex
15 ea commodo consequat</strong> Ut enim ad minim veniam, quis nostrud
16 exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.</p>
17 <a href="https://www.youtube.com/"> https://www.youtube.com/</a>
18 </body>
19 </html>

```

Output:

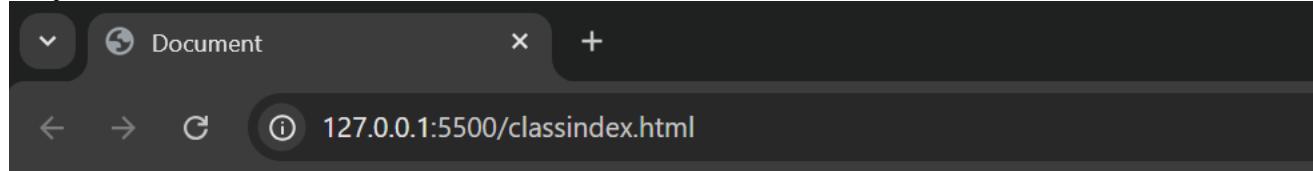


Task 3:

Program:

```
1  Task 3
2  <!DOCTYPE html>
3  <html lang="en">
4  <head>
5  |<meta charset="UTF-8">
6  |<meta name="viewport" content="width=device-width, initial-scale=1.0">
7  |<title>Document</title>
8  </head>
9  <body>
10 <ul>hobbies
11 |<li>eating</li>
12 |<li>sleeping</li>
13 |<li>complaining about life</li>
14 </ul>
15 <ol>fav movies
16 |<li>harry potter</li>
17 |<li>train to busan</li>
18 |<li>uncanny counter</li>
19 </ol>
20 </html>
```

Output:



Task 3

hobbies

- eating
- sleeping
- complaining about life

fav movies

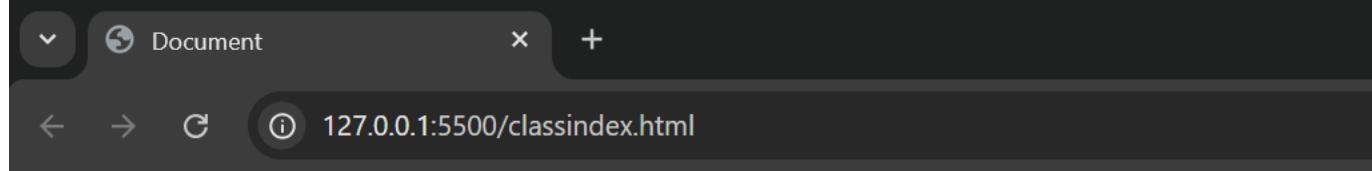
1. harry potter
2. train to busan
3. uncanny counter

Task 4:

Program:

```
1  Task 4
2  <!DOCTYPE html>
3  <html lang="en">
4  <head>
5    <meta charset="UTF-8">
6    <meta name="viewport" content="width=device-width, initial-scale=1.0">
7    <title>Document</title>
8  </head>
9  <body>
10   <p>
11     <a href="https://www.google.com/"> https://www.google.com/</a>
12     <a href="https://www.facebook.com/"> https://www.facebook.com/</a>
13     <a href="https://www.instagram.com/"> https://www.instagram.com/</a>
14   </p>
15 </html>
```

Output:



Task 4

<https://www.google.com/> <https://www.facebook.com/> <https://www.instagram.com/>

Task 5:

Program:

```
1 Task 5
2 <!DOCTYPE html>
3 <html lang="en">
4 <head>
5   <meta charset="UTF-8">
6   <meta name="viewport" content="width=device-width, initial-scale=1.0">
7   <title>Document</title>
8 </head>
9 <body>
10 
11 </html>
```

Output:

<https://www.google.com/> <https://www.facebook.com/>



<https://www.instagram.com/>

Task 6: \*\*task 5 rehta hai

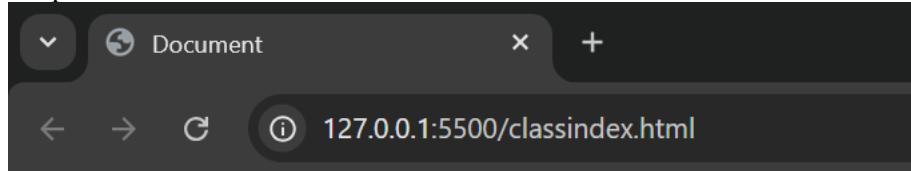
Program:

```

1  Task 6
2  <!DOCTYPE html>
3  <html lang="en">
4  <head>
5  <meta charset="UTF-8">
6  <meta name="viewport" content="width=device-width, initial-scale=1.0">
7  <title>Document</title>
8  </head>
9  <body>
10 <table border="1">
11 <tr>
12 <th>Name</th>
13 <th>Age</th>
14 <th>City</th>
15 </tr>
16 <tr>
17 <td>qandeel</td>
18 <td>18</td>
19 <td>Karachi</td>
20 </tr>
21 <tr>
22 <td>sofia</td>
23 <td>18</td>
24 <td>hyderabad</td>
25 </tr>
26 </table>
27 </html>

```

Output:



Task 6

Name	Age	City
qandeel	18	Karachi
sofia	18	hyderabad

# Lab 2

## INTGRATION HTML5 – CSS

### Objectives

In this lab, you will learn:

- How to use HTML forms and iframes
- Fundamentals of CSS
- Types of CSS (inline, internal, external)
- CSS properties used for designing and styling web elements

### Tools/Software Requirement

- **Visual Studio Code**
- **Web Browser**

### Description

#### HTML Forms and Iframes

#### HTML Forms

HTML stands for **HyperText Markup Language**, a markup language used to design and structure web pages. HTML uses predefined tags that help the browser display content properly — and one important tag is the **form**.

In this lab, we will learn:

- What HTML <form> is
- What form elements exist
- How to use forms in webpages to collect user input

#### What is an HTML <form>?

The <form> element is used to **collect input data** from users. It contains interactive controls such as:

- Text fields
- Email input
- Password fields
- Number inputs
- Checkboxes
- Radio buttons
- Submit buttons

Forms are used whenever you need to collect user data.

For example, when buying a product online, users must fill:

- Shipping Address Form
- Payment Details Form

Forms can be placed inside paragraphs, lists, tables, or divs for flexible layouts.

## Syntax

```
<form>
  <!-- form elements -->
</form>
```

## Form Elements

HTML forms include the following elements:

- **<label>** – Defines a label for form elements
- **<input>** – Used to take various types of input (text, password, email, etc.)
- **<button>** – Clickable button
- **<select>** – Drop-down list
- **<textarea>** – Multi-line text input
- **<fieldset>** – Groups related form elements
- **<legend>** – Caption for a fieldset
- **<datalist>** – Predefined list of input suggestions
- **<output>** – Displays calculation results
- **<option>** – Options inside a dropdown
- **<optgroup>** – Groups related dropdown options

## Textbox in HTML Form

To create a single-line input field, use:

```
<input type="text" />
```

Or shorthand (default type is text):

```
<input />
```

## Password in an HTML Form

To hide user input, set:

```
<input type="password" />
```

Example

```
<!DOCTYPE html>
<html>
<head>
  <title>Page Title</title>
</head>
<body>
  <h2>Welcome To IoBM</h2>

  <form>
    <div>
      <label>Username:</label>
```

```

<input type="text" name="username" required>
</label>
</div>

<div>
<label>Password:
<input type="password" name="password" required>
</label>
</div>

<div>
<button type="submit">Submit</button>
</div>
</form>
</body>
</html>

```

## Welcome To IoBM

Username :

Password :

### Radio Button

Used when the user must choose *one option only*.

```
<input type="radio" name="gender" value="male" />
```

**Important:** All radio buttons in one group must share the same **name**.

Example – Select Gender

```

<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>
<h2>Select your gender</h2>

<form>
<label>
<input type="radio" name="gender" value="male"> Male
</label>

<label>
<input type="radio" name="gender" value="female"> Female
</label>

```

```
</form>
</body>
</html>
```

## Select your gender

Male  Female

## Checkbox

Used when multiple selections are allowed.

```
<input type="checkbox" name="language" value="urdu" />
```

Example – Select Languages

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>
<h2>Choose Language</h2>
<form>
<ul style="list-style-type:none; padding: 0;">
<li><input type="checkbox" name="language" value="urdu"> Urdu</li>
<li><input type="checkbox" name="language" value="english"> English</li>
<li><input type="checkbox" name="language" value="arabic"> Arabic</li>
</ul>
</form>
</body>
</html>
```

## Choose Language

- Urdu
- English
- Arabic

## Combobox (Dropdown)

Created using <select> and <option>.

### Syntax

```
<select name="select_box_name">
  <option value="value1">Option 1</option>
</select>
```

Example – Choose Nationality

```
<!DOCTYPE html>
<html>
<head>
  <title>Page Title</title>
</head>
<body>
<h2>Select Your Nationality</h2>

<form>
<select name="language">
  <option value="pakistani">Pakistani</option>
  <option value="nepali">Nepali</option>
  <option value="others">Others</option>
</select>
</form>

</body>
</html>
```

## Select Your Nationality

Pakistani ▾

### Submit Button

```
<button type="submit">Submit</button>
```

### TextArea

Used for long text (comments, reviews, address, etc.).

```
<textarea name="textarea_name" rows="3" cols="40"></textarea>
```

## Welcome To IoBM

```
IoBM is a Higher
Education Institute in Karachi.
```

## HTML Iframes

Iframe = Inline Frame

Used to embed another webpage inside your webpage.

Syntax

```
<iframe src="URL" title="description"></iframe>
```

Example

```
<iframe src="https://www.google.com/" height="200" width="400"></iframe>
```

### HTML iframe Tag



The screenshot shows a code editor window titled "EG IDE". The interface includes a toolbar with "PHP", a green plus icon, "Copy", "Shortcuts", and "Reset" buttons. The main code area contains the following PHP code:

```

1 k?php
2 // Program to display URL of current page
3
4 if(isset($_SERVER['HTTPS']) &&
5     $link = "https";
6 else
7     $link = "http";
8

```

## CSS Introduction

CSS (Cascading Style Sheets) controls the **appearance** of a webpage.

CSS is used for:

- Colors
- Fonts
- Layout
- Spacing
- Borders
- Positioning

### Why CSS?

- Saves time
- Easy to maintain
- Clean for search engines
- More styling options than HTML
- Supports offline caching

## CSS Syntax

A CSS rule has:

- **Selector** (targets HTML element)
- **Declaration block**
- **Property: value;** pairs

Example:

```
p {
  color: blue;
  text-align: center;
}
```

Hello World!

These paragraphs are styled with CSS.

## Types of CSS

### 1. Inline CSS:

Inline CSS contains the CSS property in the body section attached to the element is known as inline CSS. This kind of style is specified within an HTML tag using the style attribute.

### 2. Internal/Embedded CSS:

This can be used when a single HTML document must be styled uniquely. The CSS rule set should be within the HTML file in the head section i.e. the CSS is embedded within the <style> tag inside the head section of the HTML file.

### 3. External CSS:

External CSS contains separate CSS files that contain only style properties with the help of tag attributes (For example class, id, heading, ... etc). CSS property is written in a separate file with a .css extension and should be linked to the HTML document using a link tag. It means that, for each element, style can be set only once and will be applied across web pages.

## Inline CSS Example

```
<p style="color: #009900; font-size: 50px; font-style: italic; text-align: center;">
  Institute of Business Management
</p>
```

# Institute of Business Management

## Internal CSS Example

Uses <style> inside <head>.

```
<!DOCTYPE html>
<html>
<head>
<title>Internal CSS</title>
<style>
.main {
    text-align: center;
    margin-top: 50px;
}

.IOBM {
    color: #009900;
    font-size: 50px;
    font-weight: bold;
}

.geeks {
    font-size: 20px;
    font-weight: bold; /* Corrected from font-style to
font-weight */
}
</style>
</head>

<body>
<div class="main">
<div class="IOBM">IoBM</div>
<div class="geeks">
    A Higher Education Institute in Karachi.
</div>
</div>
</body>
</html>
```

### Output:

**IoBM**  
A Higher Education Institute in Karachi.

## External CSS Example

Uses a separate .css file linked with:

```
<link rel="stylesheet" href="iobm.css" />
```

## CSS Priority Order

Inline CSS has the highest priority, then comes Internal/Embedded followed by External CSS which has the least priority. Multiple style sheets can be defined on one page. For an HTML tag, styles can be defined in multiple style types and follow the below order.

- As Inline has the highest priority, any styles that are defined in the internal and external style sheets are overridden by Inline styles.
- Internal or Embedded stands second in the priority list and overrides the styles in the external style sheet.
- External style sheets have the least priority.
- If there are no styles defined either in inline or internal style sheet then external style sheet rules are applied for the HTML tags.

## CSS Box Model:

In CSS, the term "box model" is used when talking about design and layout.

The CSS box model is essentially a box that wraps around every HTML element.

It consists of: margins, borders, padding, and the actual content. The image below illustrates the box model:

Consists of:

- Content
- Padding
- Border
- Margin



## Explanation of the different parts:

- **Content** - The content of the box, where text and images appear
- **Padding** - Clears an area around the content. The padding is transparent
- **Border** - A border that goes around the padding and content
- **Margin** - Clears an area outside the border. The margin is transparent

Example:

```
div {
    width: 300px;
    border: 15px solid green;
    padding: 50px;
    margin: 20px;
}
```

## CSS Text Properties

CSS has a lot of properties for formatting text.

### Text Color:

The color property is used to set the color of the text. The color is specified by:

- a color name - like "red"
- a HEX value - like "#ff0000"
- an RGB value - like "rgb(255,0,0)"

The default text color for a page is defined in the body selector.

### Example:

```
body { color: blue;

}

h1 {

    color: green;

}
```

### Text Color and Background Color:

In this example, we define both the background-color property and the color property:

### Example

```
body {  
    background-color: lightgrey; color: blue;  
}  
  
h1 {  
    background-color: black; color: white;  
}  
  
div {  
    background-color: blue; color: white;  
}
```

## LAB ACTIVITY

### PART A – HTML Forms and Iframes

- Create a login form with Username, Password, and Submit button.
- Create a form with gender selection using radio buttons.
- Create a language selection form using checkboxes.
- Create a nationality dropdown using <select>.
- Create a complete registration form using all elements.
- Display an external website using an iframe.
- Display a local webpage using an iframe.
- Create a form using <fieldset> and <legend>.
- Create an email input field with validation.

### PART B – CSS

- Use Inline CSS to style a green, centered heading.
- Use Internal CSS to change background color and paragraph styles.
- Link an External CSS file.
- Write CSS rules for <h1> styling.
- Create class. highlight with yellow background and red text.
- Create ID #title with green text, bold, 30px font.
- Demonstrate the box model using borders, padding, margins.
- Style a paragraph with blue text and light grey background.
- Show CSS priority using inline, internal, external.
- Style all <div> with width 400px, centered, light blue background.

## PART A – HTML Forms and Iframes:

- Create a login form with Username, Password, and Submit button.

Program:

```
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <meta charset="UTF-8">
5      <meta name="viewport" content="width=device-width, initial-scale=1.0">
6      <title>login form</title>
7  </head>
8  <body>
9
10 <form>
11     <div>
12         <label for="username">username:</label>
13         <input type="text" name="username" required>
14     </div>
15
16     <div>
17         <label for="password">password:</label>
18         <input type="password" name="password" required>
19     </div>
20
21     <button type="submit">submit</button>
22
23 </form>
24
25
26 </body>
27 </html>
28
```

Output:

The image shows a web page with a light blue header. Below the header, there is a form with the following structure:

```
username:   
password:   

```

The 'username:' label is in orange, and the 'password:' label is also in orange. The input fields and submit button are standard HTML elements.

- Create a form with gender selection using radio buttons.

Program:

```
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <meta charset="UTF-8">
5      <meta name="viewport" content="width=device-width, initial-scale=1.0">
6      <title>gender form</title>
7  </head>
8  <body>
9
10 <h2>select your gender</h2>
11
12 <form>
13     <label>
14         <input type="radio" name="gender" value="male"> male
15     </label>
16
17     <label>
18         <input type="radio" name="gender" value="female"> female
19     </label>
20 </form>
21
22 </body>
23 </html>
```

Output:

## select your gender

male  female

- Create a language selection form using checkboxes.

Program:

```
④ manual3.html > html
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <meta charset="UTF-8">
5      <meta name="viewport" content="width=device-width, initial-scale=1.0">
6      <title>language form</title>
7  </head>
8  <body>
9      <h2>choose a language</h2>
10     <form>
11         <ul style="list-style: none; padding: 0%;">
12             <li><input type="checkbox" name="language" value="urdu">urdu</li>
13             <li><input type="checkbox" name="language" value="english">english</li>
14             <li><input type="checkbox" name="language" value="arabic">arabic</li>
15         </ul>
16     </form>
17 </body>
18 </html>
```

Output:

## choose a language

- urdu
- english
- arabic

- Create a nationality dropdown using <select>.

Program:

```
④ manual3.html > ...
1   <!DOCTYPE html>
2   <html>
3   <head>
4   | <title>Nationality form</title>
5   </head>
6   <body>
7   <h2>Select Your Nationality</h2>
8
9   <form>
10  <select name="language">
11  | <option value="pakistani">Pakistani</option>
12  | <option value="nepali">Nepali</option>
13  | <option value="others">Others</option>
14  </select>
15  </form>
16
17  </body>
18  </html>
19  |
```

Output:

## Select Your Nationality

Pakistani ▾

- Create a complete registration form using all elements.

Program:

```
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <meta charset="UTF-8">
5      <meta name="viewport" content="width=device-width, initial-scale=1.0">
6      <title>feedback form</title>
7  </head>
8  <body>
9      <form>
10         <div>
11             <label for="comments">Comments/Feedback:</label><br>
12             <textarea id="comments" name="comments" rows="4" cols="40"></textarea>
13         </div>
14     </form>
15 </body>
16 </html>
```

Output:

Comments/Feedback:

- Create a complete registration form using all elements.

Output:

## REGISTRATION FORM

username:

password:

gender  male  female

languages  urdu  english  arabic

country

Comments/Feedback:

- Display an external website using an iframe.

Output:

## REGISTRATION FORM

username:

password:

gender  male  female

languages  urdu  english  arabic

country

Comments/Feedback:

Terms & Conditions:

### Example Domain

This domain is for use in documentation examples without needing permission. Avoid use in operations.

[Learn more](#)

- Display a local webpage using an iframe.

Output:

## Embedding a Local Webpage

Cannot GET /localpage.html

- Create a form using <fieldset> and <legend>.

Program:

```
④ ict.html > ⌂ html > ⌂ body
1   <!DOCTYPE html>
2   <html>
3   <head>
4       <title>Registration Form</title>
5   </head>
6   <body>
7
8   <form>
9       <fieldset>
10      <legend>User Information</legend>
11
12      Name: <input type="text" name="name"><br><br>
13      Email: <input type="email" name="email"><br><br>
14      Password: <input type="password" name="password"><br><br>
15
16      <input type="submit" value="Submit">
17  </fieldset>
18 </form>
19
20 </body>
21 </html>
22
```

Output:

User Information

Name:

Email:

Password:

- Create an email input field with validation.

Program:

```
④ ict.html > ...
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Email Validation</title>
5  </head>
6  <body>
7
8  <form>
9      Email:
10     <input type="email" name="email" required>
11     <input type="submit" value="Submit">
12 </form>
13
14 </body>
15 </html>
16
```

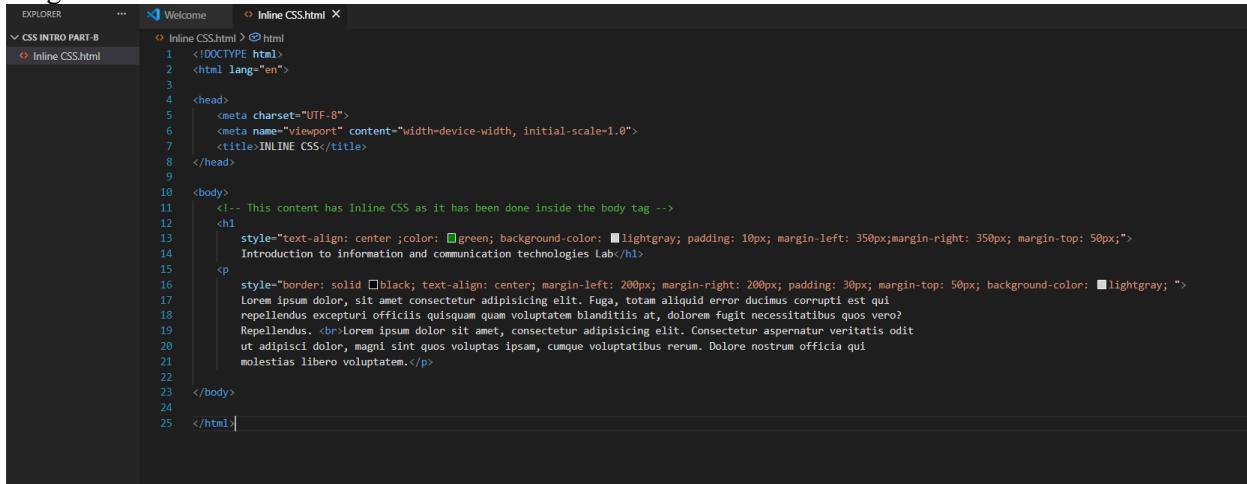
Output:

Email:

## PART B – CSS:

- Use Inline CSS to style a green, centered heading.

Program:

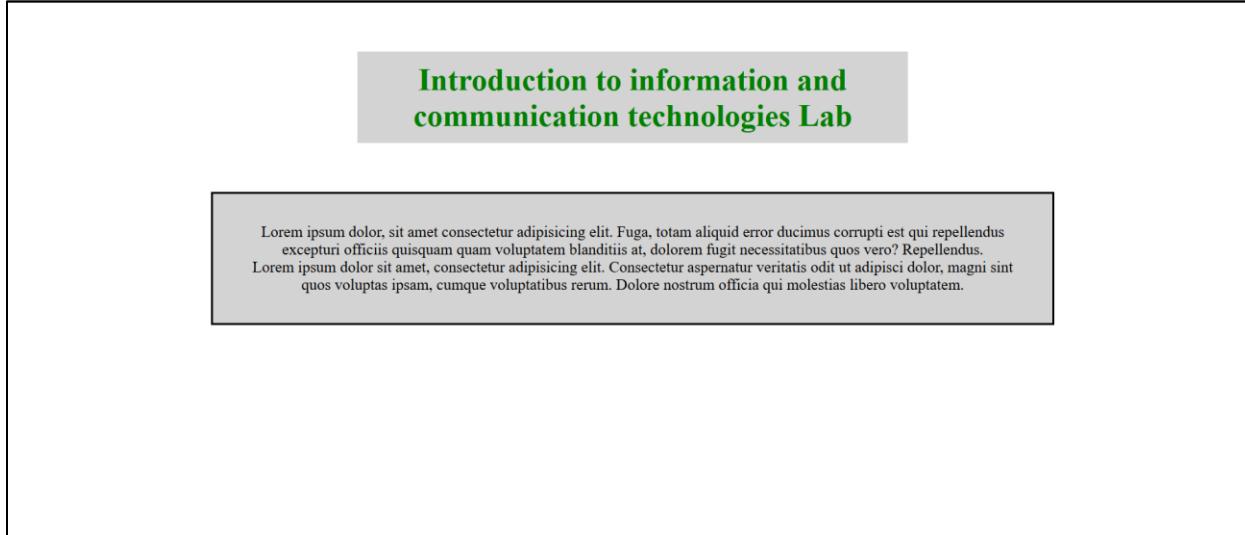


```

1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5   <meta charset="UTF-8">
6   <meta name="viewport" content="width=device-width, initial-scale=1.0">
7   <title>INLINE CSS</title>
8 </head>
9
10 <body>
11   <!-- This content has Inline CSS as it has been done inside the body tag -->
12   <h1 style="text-align: center; color: green; background-color: #lightgray; padding: 10px; margin-left: 350px; margin-right: 350px; margin-top: 50px;">
13     Introduction to information and communication technologies Lab</h1>
14   <p style="border: solid 1px black; text-align: center; margin-left: 200px; margin-right: 200px; padding: 30px; margin-top: 50px; background-color: #lightgray; ">
15     Lorem ipsum dolor, sit amet consectetur adipisicing elit. Fuga, totam aliquid error ducimus corrupti est qui
16     repellendus excepturi officiis quisquam quam voluptatem blanditiis at, dolorem fugit necessitatibus quos vero?
17     Repellendus. <br>Lorem ipsum dolor sit amet, consectetur adipisicing elit. Consectetur aspernatur veritatis odit
18     ut adipisci dolor, magni sint quos voluptas ipsam, cumque voluptatibus rerum. Dolore nostrum officia qui
19     molestias libero voluptatem.</p>
20
21 </body>
22
23 </html>
24
25

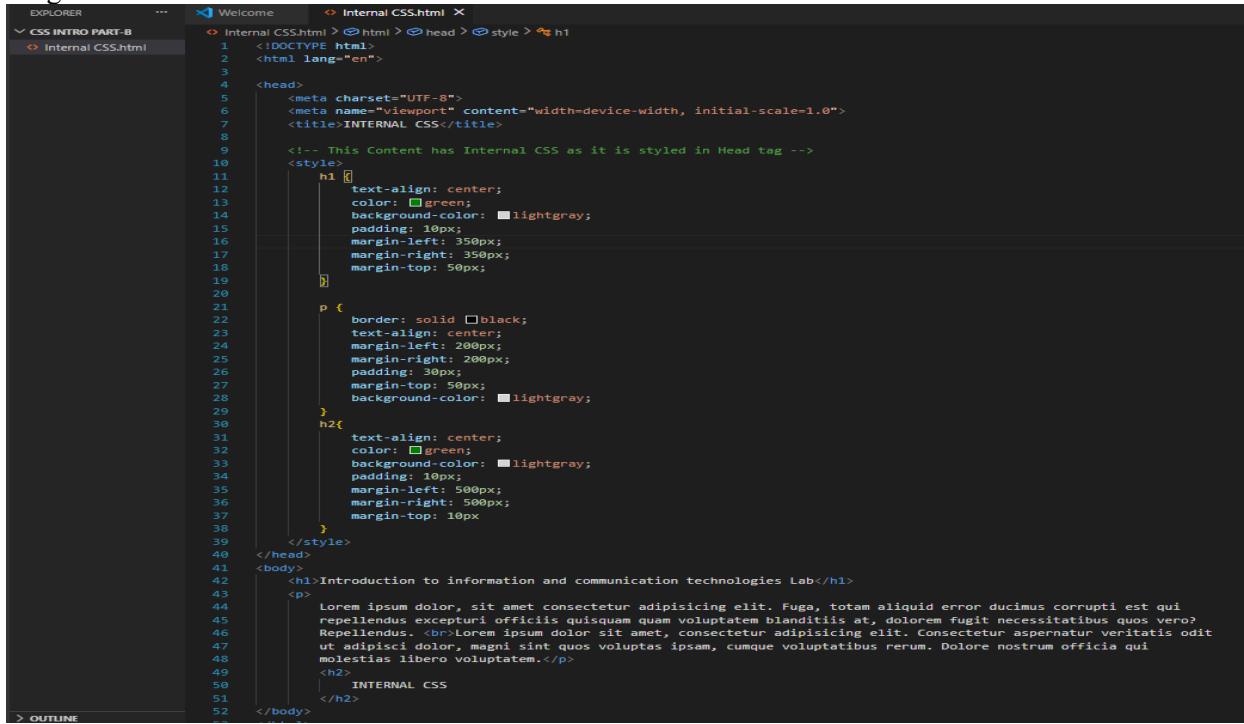
```

Output:



- Use Internal CSS to change background color and paragraph styles.

Program:

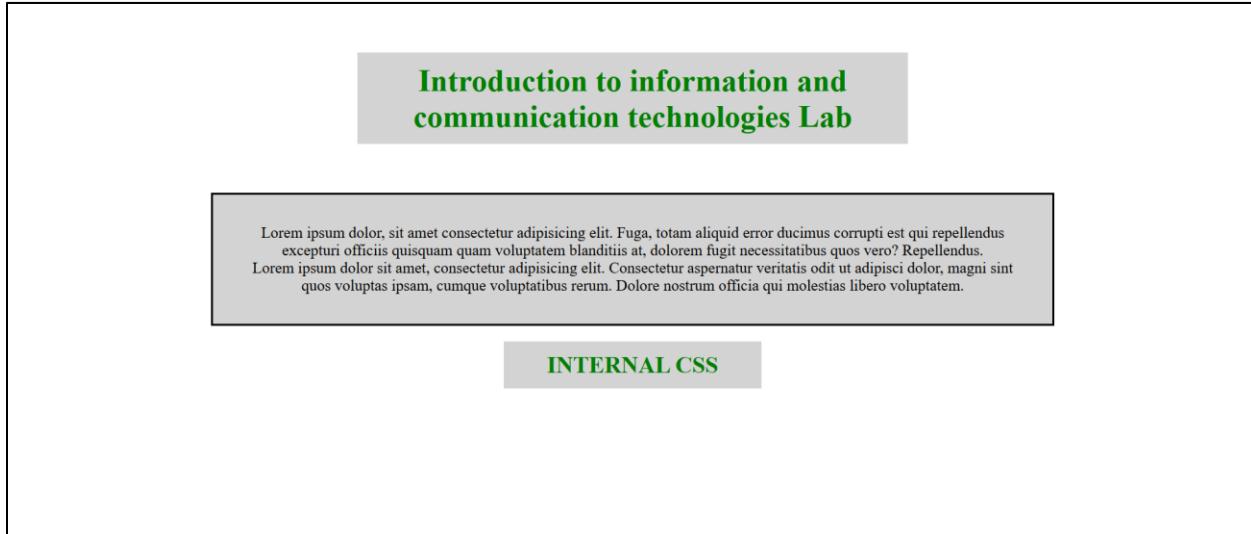


```

1  <!DOCTYPE html>
2  <html lang="en">
3
4  <head>
5      <meta charset="UTF-8">
6      <meta name="viewport" content="width=device-width, initial-scale=1.0">
7      <title>INTERNAL CSS</title>
8
9      <!-- This Content has Internal CSS as it is styled in Head tag -->
10     <style>
11         h1 {
12             text-align: center;
13             color: green;
14             background-color: lightgray;
15             padding: 10px;
16             margin-left: 350px;
17             margin-right: 350px;
18             margin-top: 50px;
19         }
20
21         p {
22             border: solid black;
23             text-align: center;
24             margin-left: 200px;
25             margin-right: 200px;
26             padding: 30px;
27             margin-top: 50px;
28             background-color: lightgray;
29         }
30         h2{
31             text-align: center;
32             color: green;
33             background-color: lightgray;
34             padding: 10px;
35             margin-left: 500px;
36             margin-right: 500px;
37             margin-top: 10px;
38         }
39     </style>
40 </head>
41 <body>
42     <h1>Introduction to information and communication technologies Lab</h1>
43     <p>
44         Lorem ipsum dolor, sit amet consectetur adipisicing elit. Fuga, totam aliquid error ducimus corrupti est qui repellendus excepturi officiis quisquam quam voluptatem blanditiis at, dolorem fugit necessitatibus quos vero? Repellendus.
45         Repellendus. <br>Lorem ipsum dolor sit amet, consectetur adipisicing elit. Consectetur aspernatur veritatis odit ut adipisci dolor, magni sint quos voluptas ipsam, cumque voluptatibus rerum. Dolore nostrum officia qui
46         molestias libero voluptatem.</p>
47     <h2>
48         INTERNAL CSS
49     </h2>
50
51 </body>
52 </html>

```

Output:



- Link an External CSS file.
  - Write CSS rules for <h1> styling.
  - Create class. highlight with yellow background and red text.
  - Create ID #title with green text, bold, 30px font.
  - Demonstrate the box model using borders, padding, margins.
  - Style a paragraph with blue text and light grey background.

## Program:

The screenshot shows a code editor with two tabs open: 'External CSS.html' and 'style.css'.

**External CSS.html:**

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>INTERNAL CSS</title>
    <link rel="stylesheet" href="style.css">
</head>
<body>
    <h1>Introduction to information and communication technologies Lab</h1>
    <div>
        <p class="highlight">
            Lorem ipsum dolor, sit amet consectetur adipisicing elit. Fuga, totam aliquid error ducimus repellendus excepturi officiis quisquam quam voluptatem blanditiis at, dolorem fugit necess vero?
            Repellendus. <br>Lorem ipsum dolor sit amet, consectetur adipisicing elit. Consectetur aspernatur ut adipisci dolor, magni sint quos voluptas ipsam, cumque voluptatibus rerum. Dolore nostru molestias libero voluptatem.</p>
        <p id="title">
            EXTERNAL CSS
        </p>
    </div>
    <p class="Lorem">
        Lorem ipsum dolor sit amet consectetur adipisicing elit. Facere dolorum cupiditate, at quisquam autem iusto expedita, non, ea perspiciatis aut doloribus quidem aperiam quo quis. Corporis, harum unde odit, numquam dolores tempore facilis perferendis, sit perspiciatis accusamus at beatae corporis nostrum, eaque adipisci ipsum sapiente placeat dicta a reiciendis optio non provident. In consequatur.
        Excepturi culpa cumque eum odio molestiae. Autem, alias commodi? Odio sunt accusantium vero maxima animi labore a temporibus debitibus est? Nostrum eos doloremque dolorem iure, sunt esse voluptate
    </p>
</body>
</html>
```

**style.css:**

```
#highlight {
    text-align: center;
    color: green;
    background-color: lightgray;
    padding: 10px;
    margin-left: 350px;
    margin-right: 350px;
    margin-top: 50px;
}

.highlight {
    border: solid black;
    text-align: center;
    margin-left: 200px;
    margin-right: 200px;
    padding: 30px;
    margin-top: 50px;
    background-color: yellow;
    color: red;
}

#title{
    text-align: center;
    color: green;
    background-color: lightgray;
    padding: 10px;
    margin-left: 500px;
    margin-right: 500px;
    margin-top: 50px;
    font-weight: bold;
    font-size: large;
    border-radius: 25px;
    border: 20px;
    border-color: black;
}

>Lorem{
    color: blue;
    background-color: lightgray;
    border: double black;
    text-align: center;
    margin-left: 200px;
    margin-right: 200px;
    padding: 30px;
    margin-top: 10px;
}
```

## Output:

**Introduction to information and communication  
technologies Lab**

**EXTERNAL CSS**

**Placeholder Text:**  
Lorem ipsum dolor, sit amet consectetur adipisicing elit. Fuga, totam aliquid error ducimus corrupti est qui repellendus excepturi officiis quisquam quam voluptatem blanditiis at, dolorem fugit necessitatibus quos vero? Repellendus.  
Lorem ipsum dolor sit amet, consectetur adipisicing elit. Consectetur aspernatur veritatis odit ut adipisci dolor, magni sint quos voluptas ipsam, cumque voluptatibus rerum. Dolore nostrum officia qui molestias libero voluptatem.

**Bottom Text:**  
Lorem ipsum dolor sit amet consectetur adipisicing elit. Facere dolorum cupiditate, at quisquam maiores quod autem iusto expedita, non, ea perspiciat aut doloribus quidem aperiam quo quis. Corporis, harum fugiat! Unde odit, numquam dolores tempore facilis perferendis, sit perspiciat accusamus at beatae commodi tempora ipsam nostrum, eaque adipisci ipsum sapiente placeat dicta a reiciendis optio non provident. Incidunt, at consequatur. Excepturi culpa cumque eum odio molestiae. Autem, alias commodi? Odio sunt accusantium vero maxime doloribus animi labore a temporibus debitis est? Nostrum eos doloremque dolorem iure, sunt esse volupate est.

- Show CSS priority using inline, internal, external.

Program:

```

EXPLORER ... Welcome External CSS.html priority.html # priority.css # style.css

CSS INTRO PART-B
External CSS.html
# priority.css
priority.html
# style.css

priority.html > html
1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5   <meta charset="UTF-8">
6   <meta name="viewport" content="width=device-width, initial-scale=1.0">
7   <title>Priority</title>
8   <link rel="stylesheet" href="priority.css">
9   <style>
10    /* This Internal CSS has not been prioritized by the System */
11    .check{
12      color: green;
13      background-color: gray;
14      text-align: right;
15      margin: 500px;
16      padding: 500px;
17    }
18
19 </style>
20 </head>
21 <!-- The Priority is given to Inline CSS instead of Internal and External CSS. -->
22 <body>
23   <div class="check" style="color: beige; background-color: rgba(157, 61, 61, 0.584); text-align: center; margin: 10%; padding: 10px;">
24     <h1>Priority Check</h1>
25
26     <p>Lorem ipsum, dolor sit amet consectetur adipisicing elit. <br> Eligendi quaerat nisi ad exercitationem minima et
27       voluptatem sapiente assumenda. <br> Maxime nihil exercitationem fugit recusandae autem ducimus impedit modi
28       quibusdam a inventore!</p>
29   </div>
30 </body>
31
32 </html>

```

```

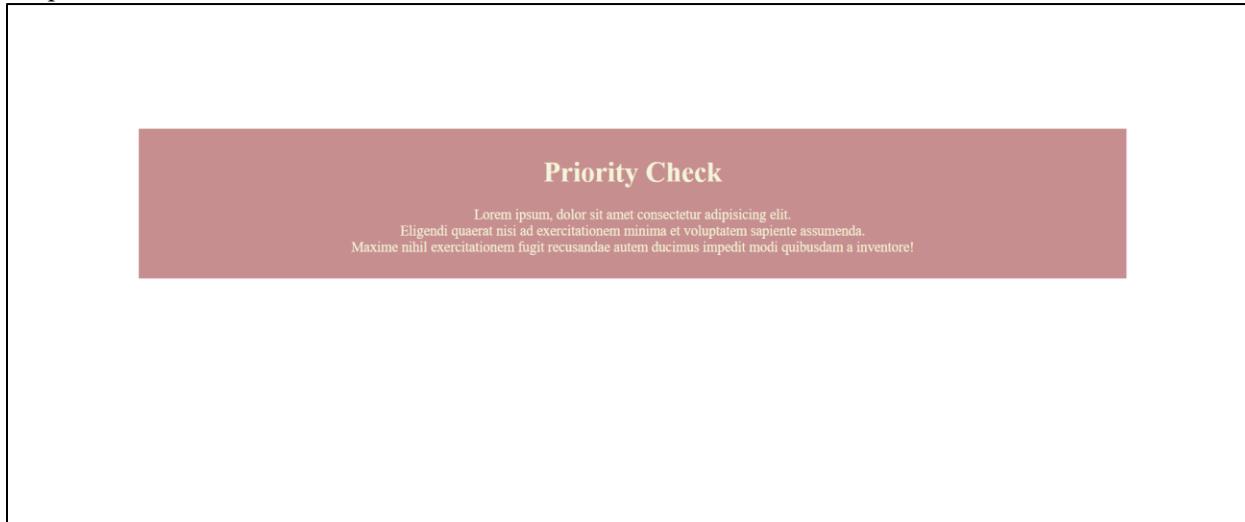
EXPLORER ... Welcome External CSS.html priority.html # priority.css # style.css

CSS INTRO PART-B
External CSS.html
# priority.css
priority.html
# style.css

# priority.css > ...
1 .check{
2   color: blue;
3   background-color: brown;
4   text-align: left;
5   margin: 1000px;
6   padding: 1000px;
7 }
8 /* This External CSS file has not been prioritized by the system. */
9

```

Output:



- Style all <div> with width 400px, centered, light blue background.

Program:

```

EXPLORER    ... Welcome    External.CSS.html priority.html divs.html # priority.css # style.css
CSS INTRO PART-B
divs.html
External.CSS.html
priority.css
priority.html
style.css


<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Divs</title>
    <style>
      div {
        width: 400px;
        text-align: center;
        background-color: #lightblue;
        margin: auto;
        /* border: solid 1px; */
      }
    </style>
  </head>
  <body>
    <div>
      <h1>Heading 1</h1>
      <p>Lorem ipsum dolor sit amet consectetur, adipisicing elit. Explicabo fugiat, reiciendis voluptatibus eligendi beatae saepe rem. Libero aperiam eum corrupti temporibus iusto, voluptas in ea, iure tenetur fugit voluptatem cum?</p>
    </div>
    <div>
      <h2>Heading 2</h2>
      <p>Lorem ipsum dolor sit, amet consectetur adipisicing elit. Sapiente veniam maiores eius numquam dolor! Explicabo adipisci accusantium quaerat consequatur ad beatae asperiores quidem nemo, temporibus aperiam deleniti accusamus, fugit aliquid. Eaque excepturi dolorem aliquam fugiat et inventore reprehenderit repudiandae esse dicta nobis illo nesciunt laboriosam eveniet, soluta ea itaque porro assumenda cumque hic deleniti dignissimos amet earum. Doloribus, ullam consequuntur.</p>
    </div>
    <div>
      <h3>Heading 3</h3>
      <p>Lorem, ipsum dolor sit amet consectetur adipisicing elit. Beatae, iste possimus mollitia nihil aperiam eligendi ipsam, perferendis impedit sunt, voluptatibus doloribus nam nemo sequi tempora commodi quis aspernatur voluptate eos. Fuga animi distinctio fugit amet doloribus dolor consequatur repellat, dolorum sapiente porro rerum recusandae beatae et nihil quidem odit? Blanditiis impedit itaque reprehenderit dolore quod sint voluptatibus ad deleniti! Quas..</p>
    </div>
  </body>
</html>


```

Output:

# Heading 1

Lorem ipsum dolor sit amet consectetur, adipisicing elit. Explicabo fugiat, reiciendis voluptatibus eligendi beatae saepe rem. Libero aperiam eum corrupti temporibus iusto, voluptas in ea, iure tenetur fugit voluptatem cum?

## Heading 2

Lorem ipsum dolor sit, amet consectetur adipisicing elit. Sapiente veniam maiores eius numquam dolor! Explicabo adipisci accusantium quaerat consequatur ad beatae asperiores quidem nemo, temporibus aperiam deleniti accusamus, fugit aliquid. Eaque excepturi dolorem aliquam fugiat et inventore reprehenderit repudiandae esse dicta nobis illo nesciunt laboriosam eveniet, soluta ea itaque porro assumenda cumque hic deleniti dignissimos amet earum. Doloribus, ullam consequuntur.

### Heading 3

Lorem, ipsum dolor sit amet consectetur adipisicing elit. Beatae, iste possimus mollitia nihil aperiam eligendi ipsam, perferendis impedit sunt, voluptatibus doloribus nam nemo sequi tempora commodi quis aspernatur voluptate eos. Fuga animi distinctio fugit amet doloribus dolor consequatur repellat, dolorum sapiente porro rerum recusandae beatae et nihil quidem odit? Blanditiis impedit itaque reprehenderit dolore quod sint voluptatibus ad deleniti! Quas..

# Lab 3

## DIVISION, IMAGE GALLERY, RESPONSIVENESS

### **Objectives:**

In this lab, you will learn about HTML Divisions, Navigation Bar, Image Galleries and CSS.

### **Tools/Software Requirement:**

- Visual Studio Code
- Web Browser

### **Description:**

#### **HTML Division:**

The HTML <div> tag is used to group the large section of HTML elements together.

We know that every tag has a specific purpose e.g. p tag is used to specify paragraph, <h1> to <h6> tag are used to specify headings but the <div> tag is just like a container unit which is used to encapsulate other page elements and divides the HTML documents into sections.

The div tag is generally used by web developers to group HTML elements together and apply CSS styles to many elements at once. For example: If you wrap a set of paragraph elements into a div element so you can take the advantage of CSS styles and apply font style to all paragraphs at once instead of coding the same style for each paragraph element.

#### **Example:**

```
<!DOCTYPE>
<html>
<body>
<div style="border:1px solid pink;padding:20px;font-size:20px">
<p>Welcome to IoBM, Karachi.</p>
<p>This is second paragraph</p>
</div>
</body>
</html>
```

Welcome to IoBM, Karachi.

This is second paragraph

## HTML div example: Login Form

In this example, we are creating a box using a div tag. There is a login form inside the box. Let's see the CSS and HTML code.

### CSS Code:

```
loginform{ padding:10px; border:1px solid pink; border-radius:10px; float:right;
margin-top:10px;
}
.formheading{ background-color:red; color:white; padding:4px;
text-align:center;
}
.sub{
background-color:blue; padding: 7px 40px 7px 40px; color:white;
font-weight:bold; margin-left:70px; border-radius:5px;
}
```

### HTML Code:

```
<div class="loginform">
<h3 class="formheading">Please Login</h3>
<form action="LoginServlet" method="post">
<table>
<tr><td>Email:</td><td><input type="email" name="email"/></td></tr>
<tr><td>Password:</td><td><input type="password" name="password"/></td></tr>
<tr><td colspan="2" style="text-align:center"><input type="submit" value="login"/></td></tr>
</table>
</form>
</div>
```

Please Login

Email:

Password:

**login**

## CSS Navigation Bar:

### Demo: Navigation Bars

Vertical

- [Home](#)
- [News](#)
- [Contact](#)
- [About](#)

Horizontal

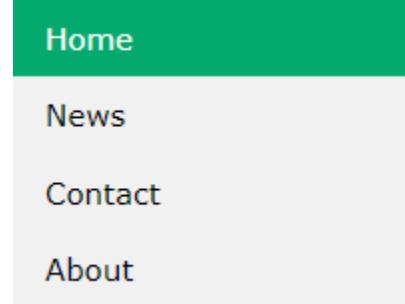
- [Home](#)
- [News](#)
- [Contact](#)
- [About](#)

```
on hover */li a:hover {
    background-color: #555; color: white;
}
```

## Active/Current Navigation Link

Add an "active" class to the current link to let the user know which page he/she is on:

```
.active {
    background-color: #04AA6D; color: white;
}
```



## Center Links & Add Borders

Add text-align:center to <li> or <a> to center the links.

Add the border property to <ul> add a border around the navbar. If you also want borders inside the navbar, add a border-bottom to all <li> elements, except for the last one:

```

ul {
    border: 1px solid #555;
}

li {
    text-align: center;
    border-bottom: 1px solid #555;
}

li:last-child {
    border-bottom: none;
}

```



### Full-height Fixed Vertical Navbar:

Create a full-height, "sticky" side navigation:

The screenshot displays a web page with a fixed full-height sidebar on the left. The sidebar has a green header with the word "Home" and a white body containing "News", "Contact", and "About". The main content area to the right has a title "Fixed Full-height Side Nav" and a paragraph "Try to scroll this area, and see how the sidenav sticks to the page". Below this are three lines of placeholder text: "Some text..", "Some text..", and "Some text..". A vertical scrollbar is visible on the right side of the content area.

```

ul {
    list-style-type: none; margin: 0;
    padding: 0;
    width: 25%;
    background-color: #f1f1f1; height: 100%; /* Full height */
    position: fixed; /* Make it stick, even on scroll */
}

```

```
overflow: auto; /* Enable scrolling if the sidenav has too much content */
}
```

**Note:** This example might not work properly on mobile devices.

### CSS Horizontal Navigation Bar:



There are two ways to create a horizontal navigation bar. Using inline or floating list items.

#### Inline List Items:

One way to build a horizontal navigation bar is to specify the <li> elements as inline, in addition to the "standard" code from the previous page:

```
li {
  display: inline;
}
```

#### Example explained:

**display: inline;** - By default, <li> elements are block elements. Here, we remove the line breaks before and after each list item, to display them on one line

#### Floating List Items:

Another way of creating a horizontal navigation bar is to float the <li> elements, and specify a layout for the navigation links:

```
li {
  float: left;
}

a {
  display: block; padding: 8px;
  background-color: #dddddd;
}
```

#### Example explained:

**float: left;** - Use float to get block elements to float next to each other

**display: block;** - Allows us to specify padding (and height, width, margins, etc. if you want) **padding: 8px;** -

Specify some padding between each <a> element, to make them look good **background-color: #dddddd;** - Add a gray background-color to each <a> element

**Tip:** Add the background-color to <ul> instead of each <a> element if you want a full-width background color:

```
ul {
    background-color: #dddddd;
}
```

## Horizontal Navigation Bar Examples:

Create a basic horizontal navigation bar with a dark background color and change the background color of the links when the user moves the mouse over them:



Home    News    Contact    About

```
ul {
    list-style-type: none; margin: 0;
    padding: 0; overflow: hidden;
    background-color: #333;
}

li {
    float: left;
}

li a {
    display: block; color: white;
    text-align: center; padding: 14px 16px; text-decoration: none;
}

/* Change the link color to #111 (black) on hover */
li a:hover {
    background-color: #111;
}
```

## Active/Current Navigation Link:

Add an "active" class to the current link to let the user know which page he/she is on:

```
Home News Contact About
```

```
.active {
    background-color: #04AA6D;
}
```

## Right-Align Links:

Right-align links by floating the list items to the right (float:right);

```
Home News Contact
```

```
About
```

```
<ul>
    <li><a href="#home">Home</a></li>
    <li><a href="#news">News</a></li>
    <li><a href="#contact">Contact</a></li>
    <li style="float:right"><a class="active" href="#about">About</a></li>
</ul>
```

## Border Dividers:

Add the border-right property to <li> to create link dividers:

```
Home News Contact
```

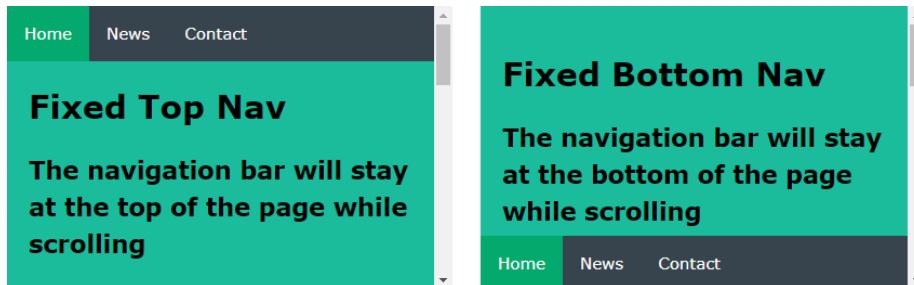
```
About
```

```
/* Add a gray right border to all list items, except the last item (last-child)
*/ li {
    border-right: 1px solid #bbb;
}

li:last-child { border-right: none;
}
```

## Fixed Navigation Bar:

Make the navigation bar stay at the top or the bottom of the page, even when the user scrolls the page:



### Fixed Top:

```
ul {
  position: fixed; top: 0;
  width: 100%;
}
```

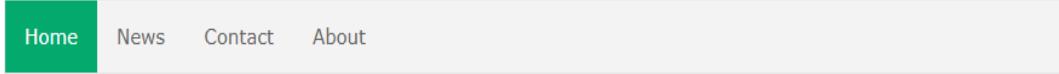
### Fixed Bottom:

```
ul {
  position: fixed; bottom: 0;
  width: 100%;
}
```

**Note:** Fixed position might not work properly on mobile devices.

## Gray Horizontal Navbar

An example of a gray horizontal navigation bar with a thin gray border:



```
ul {
  border: 1px solid #e7e7e7; background-color: #f3f3f3;
}

li a {
  color: #666;
}
```

## Sticky Navbar:

Add position: sticky; to <ul> to create a sticky navbar.

A sticky element toggles between relative and fixed, depending on the scroll position. It is positioned relative until a given offset position is met in the viewport - then it "sticks" in place (like position:fixed).

# Scroll Down

Scroll down to see the sticky effect.

**Home** News Contact

## Sticky Navigation Example

```
ul {
  position: -webkit-sticky; /* Safari */
  position: sticky;
  top: 0;
}
```

**Note:** Internet Explorer do not support sticky positioning. Safari requires a -webkit- prefix (see example above). You must also specify at least one of top, right, bottom or left for sticky positioning to work.

### CSS Image Gallery:

CSS can be used to create an image gallery.



Add a description of the image here



Add a description of the image here



Add a description of the image here



Add a description of the image here

## Image Gallery:

The following image gallery is created with CSS:

```
<!DOCTYPE html>
<html>
<head>
<style> div.gallery { margin: 5px;
  border: 1px solid #ccc; float: left;
  width: 180px;
}

div.gallery:hover { border: 1px solid #777;
}

div.gallery img { width: 100%; height: auto;
}

div.desc { padding: 15px; text-align: center;
}
</style>
</head>
<body>

<div class="gallery">
<a target="_blank" href="img_5terre.jpg">
  
</a>
<div class="desc">Add a description of the image here</div>
</div>

<div class="gallery">
<a target="_blank" href="img_forest.jpg">
  
</a>
<div class="desc">Add a description of the image here</div>
</div>

<div class="gallery">
<a target="_blank" href="img_lights.jpg">
  
</a>
<div class="desc">Add a description of the image here</div>
</div>

<div class="gallery">
<a target="_blank" href="img_mountains.jpg">
  
</a>
<div class="desc">Add a description of the image here</div>
</div>
```

```
</body>
</html>
```

# LAB ACTIVITY

- **HTML Divisions**

- Create an HTML file named `div_example.html`.
- Define the necessary HTML structure with `<!DOCTYPE html>`, `<html>`, `<head>`, and `<body>` tags.
- Inside the `<body>` element, create a `<div>` element and give it the class name `myDiv`. Add some text content within the `<div>` to create a message or description.
- Add another `<div>` element below the first one and give it the class name `anotherDiv`. Insert some content in this `<div>` as well.
- Apply CSS styles to both `myDiv` and `anotherDiv` classes to give them different border colors, padding, and font sizes. Ensure that these styles are defined in a `<style>` section within the `<head>` of your HTML document.
- Create a third `<div>` element and use it to group the previous two `<div>` elements. Give this third `<div>` a class name like `containerDiv`.
- Style the `containerDiv` to have a background color and some margin to separate it from the rest of the content.
- Save your HTML file and open it in a web browser to view the divisions and styles. Observe how the `<div>` elements group content and apply CSS styles.

- **CSS Navigation Bar**

- Create an HTML file named `navigation_bar.html`.
- Inside the `<body>` element, create an unordered list (`<ul>`) to represent the navigation bar. Add list items (`<li>`) for each navigation item, such as "Home," "About," "Services," and "Contact."
- Apply CSS styles to format the navigation bar. Customize the styles for `<ul>`, `<li>`, and `<a>` elements to create a horizontal navigation layout.
- Use CSS to change the appearance of navigation links on hover. For example, change the background color or text color when the mouse hovers over a link.
- Optionally, add an "active" class to one of the navigation items (e.g., "Home") to indicate the current page.
- Save your HTML file and open it in a web browser to view the navigation bar. Test its functionality by clicking on the links.

- **CSS Image Gallery**

- Create an HTML file named `image_gallery.html`.
- Inside the `<body>` element, create a series of `<div>` elements, each representing an image in the gallery.
- For each `<div>`, include an `<img>` element to display an image. Use placeholder image URLs or provide your own image files.
- Add a description or caption for each image below the `<img>` element, using text or `<p>` elements.

- Apply CSS styles to format the gallery. Customize the styles for <div>, <img>, and text elements to create a visually appealing gallery layout.
- Implement hover effects using CSS to change the appearance of images when the mouse hovers over them. For example, increase the image size or apply a border.
- Save your HTML file and open it in a web browser to view the image gallery. Test the hover effects and observe how the images respond.

## TASK 1: HTML Divisions:

Program and output:

The screenshot shows a code editor interface with a dark theme. On the left is the code editor pane, and on the right is the preview pane. The code editor contains the following HTML and CSS:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>HTML Divisions Example</title>
    <style>
        .containerDiv {
            background-color: #f3e9dd;
            margin: 30px;
            padding: 20px;
        }
        .myDiv {
            border: 2px solid #7b4f2a;
            padding: 15px;
            font-size: 18px;
            margin-bottom: 15px;
            color: #4e2e14;
        }
        .anotherDiv {
            border: 2px solid #a06d3c;
            padding: 15px;
            font-size: 16px;
            color: #5a3a1a;
        }
    </style>
</head>
<body>
    <div class="containerDiv">
        <div class="myDiv">
            This is the first division. It contains a simple message.
        </div>
        <div class="anotherDiv">
            This is the second division. It has different styling.
        </div>
    </div>
</body>
</html>
```

The preview pane shows two separate boxes. The top box, with a light orange background, contains the text "This is the first division. It contains a simple message." The bottom box, with a light beige background, contains the text "This is the second division. It has different styling."

## TASK 2: CSS Navigation Bar

Program:

```
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <meta charset="UTF-8">
5      <title>Coffee Shop Website</title>
6
7      <style>
8          body {
9              margin: 0;
10             font-family: Arial, sans-serif;
11             background-color: #f3e9dd;
12         }
13
14         ul {
15             list-style-type: none;
16             margin: 0;
17             padding: 0;
18             background-color: #6f4e37;
19             overflow: hidden;
20             position: sticky;
21             top: 0;
22         }
23
24         li {
25             float: left;
26         }
27
28         li a {
29             display: block;
```

```
30         color: #f5ede3;
31         text-align: center;
32         padding: 14px 22px;
33         text-decoration: none;
34         font-size: 18px;
35     }
36
37     li a:hover {
38         background-color: #a47148;
39         color: #ffffff;
40     }
41
42     section {
43         padding: 60px 40px;
44         margin: 30px;
45         background-color: #fff7ef;
46         border: 2px solid #a47148;
47         border-radius: 8px;
48     }
49
50     h2 {
51         color: #6f4e37;
52     }
53
54     p {
55         color: #4e2e14;
56         font-size: 16px;
57         line-height: 1.6;
58     }
59 
```

</style>

```
60 </head>
61
62 <body>
63
64     <ul>
65         <li><a href="#home">Home</a></li>
66         <li><a href="#about">About</a></li>
67         <li><a href="#menu">Menu</a></li>
68         <li><a href="#contact">Contact</a></li>
69     </ul>
70
71     <section id="home">
72         <h2>Welcome to Our Coffee Shop</h2>
73         <p>
74             Our coffee shop offers freshly brewed coffee made from carefully selected beans.
75             We focus on quality, comfort, and a relaxing environment.
76         </p>
77     </section>
78
```

```
79      <section id="about">
80          <h2>About Us</h2>
81          <p>
82              We are passionate about coffee and believe that every cup should deliver warmth
83              and satisfaction. Our goal is to create a cozy place for coffee lovers.
84          </p>
85      </section>
86
87      <section id="menu">
88          <h2>Our Menu</h2>
89          <p>
90              Our menu includes espresso, cappuccino, latte, mocha, and a variety of
91              freshly baked snacks that pair perfectly with coffee.
92          </p>
93      </section>
94
95      <section id="contact">
96          <h2>Contact Us</h2>
97          <p>
98              Visit us at our coffee shop or reach out through email and phone for any inquiries.
99              We would love to hear from you.
100         </p>
101     </section>
102
103 </body>
104 </html>
```

## Output:

Coffee Shop Website

127.0.0.1:5500/classindex.html

Home About Menu Contact

## Welcome to Our Coffee Shop

Our coffee shop offers freshly brewed coffee made from carefully selected beans. We focus on quality, comfort, and a relaxing environment.

## About Us

We are passionate about coffee and believe that every cup should deliver warmth and satisfaction. Our goal is to create a cozy place for coffee lovers.

The screenshot shows a web browser window titled "Coffee Shop Website". The address bar displays the URL "127.0.0.1:5500/classindex.html". The page content is organized into two main sections, each enclosed in a light orange rounded rectangle. The top section is titled "Our Menu" and contains the text: "Our menu includes espresso, cappuccino, latte, mocha, and a variety of freshly baked snacks that pair perfectly with coffee." The bottom section is titled "Contact Us" and contains the text: "Visit us at our coffee shop or reach out through email and phone for any inquiries. We would love to hear from you."

Coffee Shop Website

127.0.0.1:5500/classindex.html

Home About Menu Contact

**Our Menu**

Our menu includes espresso, cappuccino, latte, mocha, and a variety of freshly baked snacks that pair perfectly with coffee.

**Contact Us**

Visit us at our coffee shop or reach out through email and phone for any inquiries. We would love to hear from you.

## TASK 3: CSS Image Gallery

Program:

```
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <meta charset="UTF-8">
5      <title>My Image Gallery</title>
6
7      <style>
8          body {
9              font-family: Arial, sans-serif;
10             margin: 0;
11             background-color: #b1a3b5;
12             padding: 20px;
13             display: flex;
14             flex-direction: column;
15             align-items: center;
16         }
17
18         h1 {
19             text-align: center;
20             margin-bottom: 30px;
21             font-size: 40px;
22             color: #4e4c4f;
23         }
24
25         .container {
26             display: flex;
27             justify-content: center;
28             gap: 25px;
29             flex-wrap: wrap;
```

```

30         max-width: 1000px;
31     }
32
33     .gallery {
34         width: 250px;
35         background: #ffffff;
36         border: 1px solid #e0d7cf;
37         border-radius: 12px;
38         overflow: hidden;
39         transition: 0.3s;
40         box-shadow: 0 4px 15px rgba(0,0,0,0.1);
41         text-align: center;
42     }
43
44     .gallery:hover {
45         transform: scale(1.07);
46         box-shadow: 0 8px 20px rgba(0,0,0,0.2);
47     }
48
49     .gallery img {
50         width: 100%;
51         height: 320px;
52         object-fit: cover;
53         display: block;
54     }

```

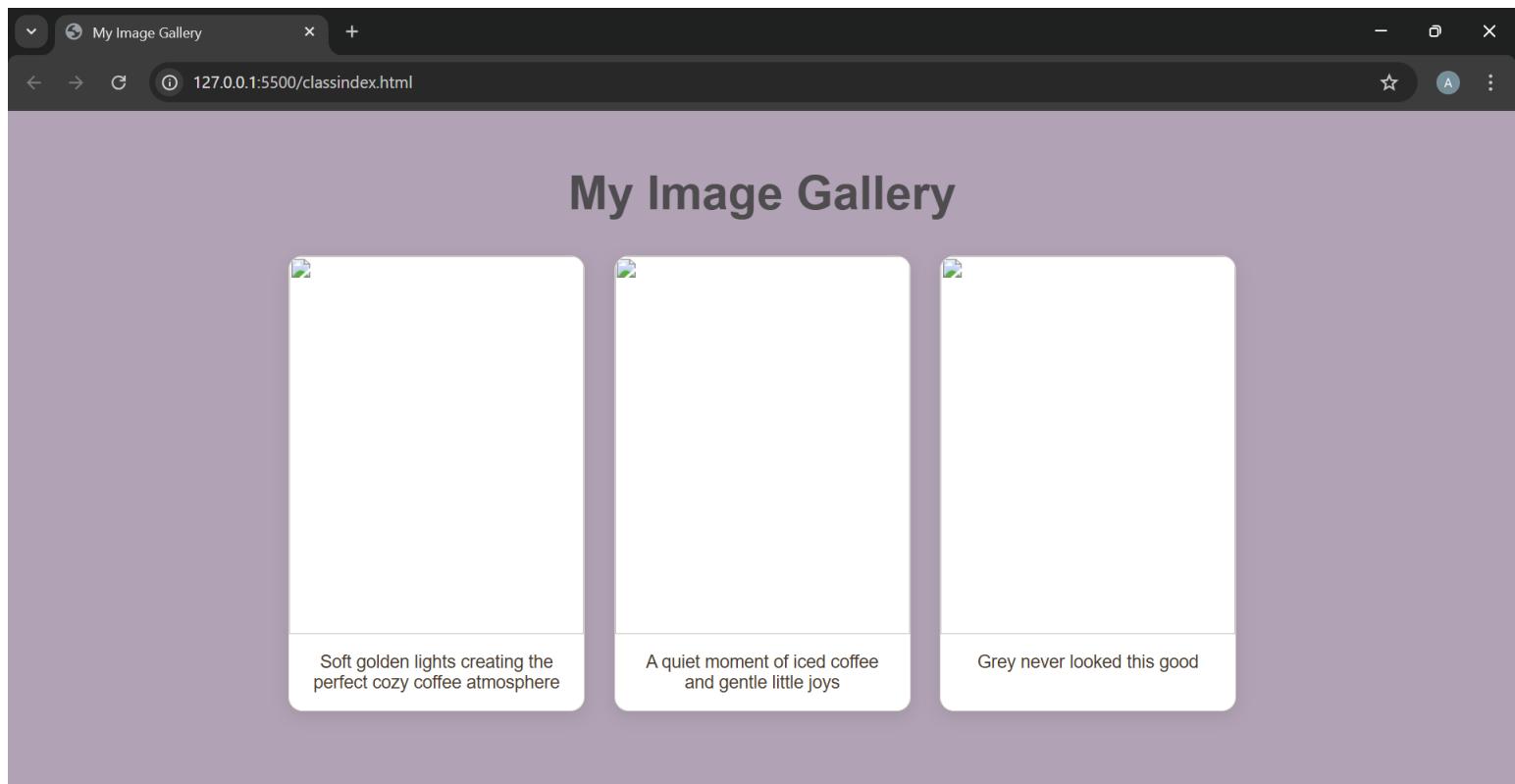
```

56     .desc {
57         padding: 15px;
58         font-size: 15px;
59         color: #4a3b2d;
60     }
61 </style>
62 </head>
63 <body>
64
65     <h1>My Image Gallery</h1>
66
67     <div class="container">
68
69         <div class="gallery">
70             
71             <div class="desc">Soft golden lights creating the perfect cozy coffee atmosphere</div>
72         </div>
73
74         <div class="gallery">
75             
76             <div class="desc">A quiet moment of iced coffee and gentle little joys</div>
77         </div>
78
79         <div class="gallery">
80             
81             <div class="desc">Grey never looked this good</div>

```

```
82      |     </div>
83      |
84      </div>
85
86  </body>
87  </html>
```

Output:



# Lab 4

## INTRODUCTION TO JAVASCRIPT

### Introduction to JavaScript

JavaScript is a high-level, interpreted programming language primarily used to make web pages interactive. It can modify HTML and CSS dynamically and allows you to handle events, perform calculations, and manipulate page content. JavaScript runs in the browser and can also be used on servers via Node.js.

#### Code Example:

```
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript Introduction</title>
</head>
<body>
  <h1>JavaScript Lab</h1>
  <script>
    console.log("JavaScript is running!");
    alert("Welcome to JavaScript Lab!");
  </script>
</body>
</html>
```

### Variables

Variables are used to store data in memory. In JavaScript, you can declare variables using let, const, or var.

- let – can be reassigned.
- const – cannot be reassigned.
- var – older declaration method; function-scoped.

#### Code Example:

```
let name = "Ali";      // can change
const pi = 3.14;       // constant
var age = 20;          // older style
console.log(name, pi, age);
```

### Data Types

JavaScript is dynamically typed, meaning a variable can hold any type of data. Common types include:

- String
- Number
- Boolean
- Array
- Object
- Undefined
- Null

**Code Example:**

```
let username = "Sara";           // string
let age = 25;                  // number
let isStudent = true;          // boolean
let colors = ["red", "blue"];   // array
let student = {name:"Ali", id:1}; // object
let address;                  // undefined
let phone = null;              // null
console.log(username, age, isStudent, colors, student, address, phone);
```

**Operators**

Operators perform operations on values:

- Arithmetic: +, -, \*, /, %
- Comparison: >, <, >=, <=, ==, ===
- Logical: &&, ||, !

**Code Example:**

```
// Arithmetic
let sum = 5 + 3; // 8

// Comparison
console.log(5 > 3); // true

// Logical
console.log(true && false); // false
```

**Conditional Statements**

Conditional statements execute code based on conditions.

- if / else if / else – check conditions sequentially
- switch – checks multiple possible values

**Code Example:**

```
let age = 18;

if(age >= 18){
  console.log("Adult");
} else {
  console.log("Minor");
}

// switch statement
let day = 2;
switch(day){
  case 1:
    console.log("Monday");
    break;
```

case 2:

```
console.log("Tuesday");
break;
default:
  console.log("Other day");
}
```

## Loops

Loops are used to execute code repeatedly:

- for – repeat for a set number of times
- while – repeat while a condition is true

### Code Example:

```
// for loop
for(let i = 1; i <= 5; i++){
  console.log(i);
}
```

```
// while loop
let j = 1;
while(j <= 5){
  console.log(j);
  j++;
}
```

## Functions

Functions are reusable blocks of code that perform a specific task. They can accept parameters and return values.

### Code Example:

```
function greet(name){
  return "Hello, " + name + "!";
}
console.log(greet("Ali"));
```

## Arrays

Arrays store multiple values in a single variable. They are zero-indexed and provide many methods for manipulation like push, pop, length, etc.

### Code Example:

```
let fruits = ["Apple", "Mango", "Banana"];
console.log(fruits[0]); // Apple
fruits.push("Orange"); // add item
console.log(fruits.length); // 4
```

## Introduction to DOM

The DOM (Document Object Model) is a structured representation of the HTML elements of a page. JavaScript can interact with the DOM to dynamically change content, styles, and structure.

### Code Example – Change Text:

```
<p id="demo">Original Text</p>
<button onclick="changeText()">Click Me</button>
<script>
function changeText(){
  document.getElementById("demo").innerHTML = "Text has changed!";
}
</script>
```

### Changing Styles

You can manipulate CSS styles dynamically using JavaScript.

### Code Example – Change Background Color:

```
<div id="box" style="width:100px;height:100px;background-color:red;"></div>
<button onclick="changeColor()">Change Color</button>
<script>
function changeColor(){
  document.getElementById("box").style.backgroundColor = "blue";
}
</script>
```

### Event Handling

Events occur when users interact with the webpage (clicks, mouseover, input, etc.). Event listeners can respond to these events.

### Code Example – Mouseover Event:

```
<h1 id="title">Hover over me</h1>
<script>
document.getElementById("title").addEventListener("mouseover", function() {
  this.style.color = "red";
});
</script>
```

### Input Fields & Output

You can take input from users and dynamically display results using DOM methods.

### Code Example:

```
<input type="text" id="nameInput" placeholder="Enter your name">
<button onclick="welcomeUser()">Submit</button>
<p id="output"></p>
```

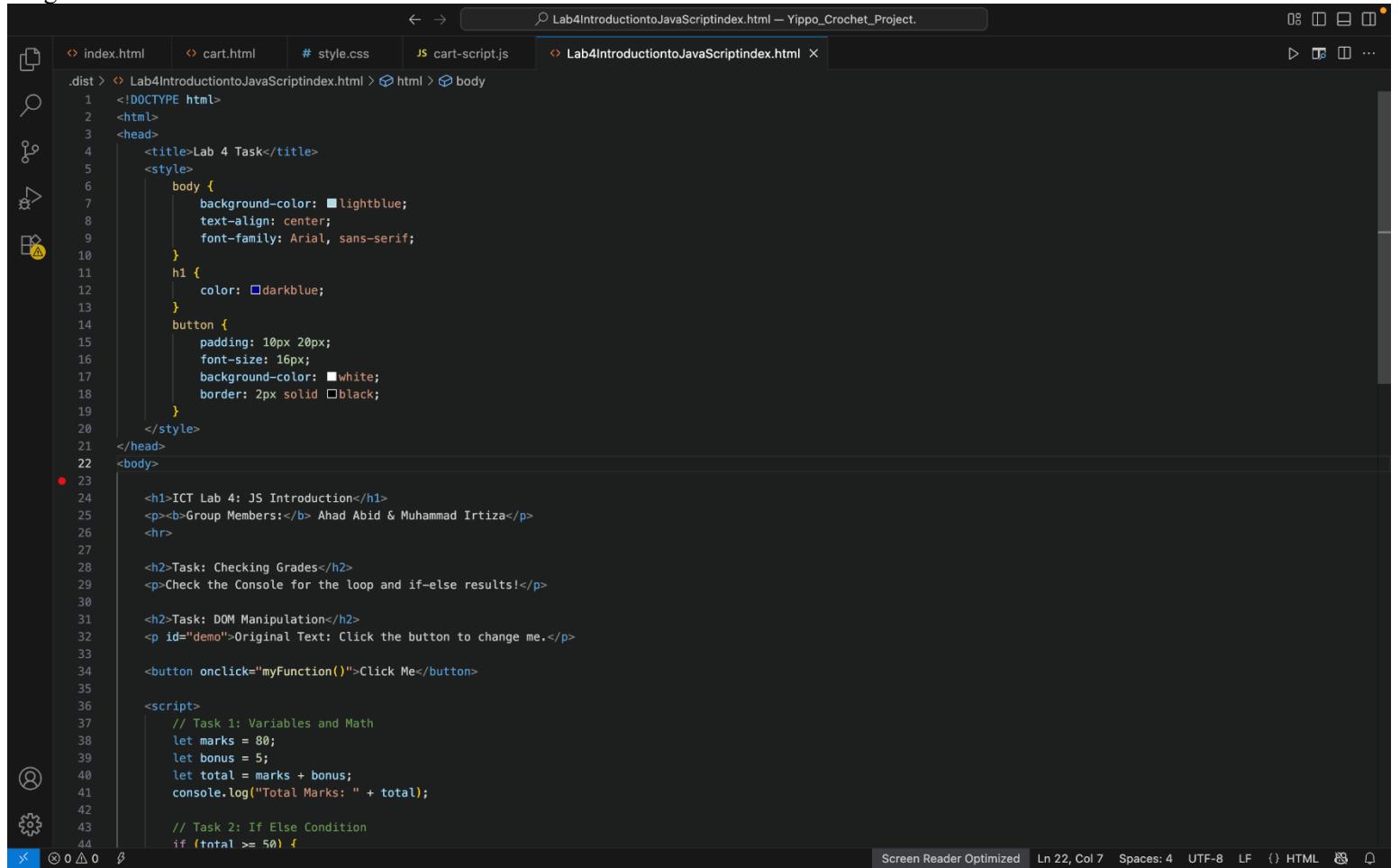
```
<script>
function welcomeUser(){
    let name = document.getElementById("nameInput").value;
    document.getElementById("output").innerHTML = "Welcome " + name + "!";
}
</script>
```

## LAB ACTIVITY

1. **Hello World:** Display message in alert and console.
2. **Variables and Data Types:** Declare variables of all types and display them in console.
3. **Conditional Statements:** Input a number and check if positive, negative, or zero.
4. **Loops:** Display numbers 1–20 and even numbers using loops.
5. **Functions:** Create a function to calculate area of a circle.
6. **Arrays:** Create an array of colors and perform push/pop operations.
7. **DOM Manipulation:** Change text, color, and styles dynamically using buttons.
8. **Event Handling:** Create mouseover and click events for elements.
9. **Form Input & Output:** Take user input and display dynamic greeting.

# TASK

Program:



The screenshot shows a code editor interface with the following details:

- Title Bar:** Lab4IntroductiontoJavaScriptindex.html — Yippo\_Crochet\_Project.
- File Explorer:** Shows files: index.html, cart.html, style.css, cart-script.js, and Lab4IntroductiontoJavaScriptindex.html (the active file).
- Code Area:**

```

1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Lab 4 Task</title>
5      <style>
6          body {
7              background-color: #lightblue;
8              text-align: center;
9              font-family: Arial, sans-serif;
10         }
11        h1 {
12            color: #darkblue;
13        }
14        button {
15            padding: 10px 20px;
16            font-size: 16px;
17            background-color: #white;
18            border: 2px solid #black;
19        }
20    </style>
21 </head>
22 <body>
23
24     <h1>ICT Lab 4: JS Introduction</h1>
25     <p><b>Group Members:</b> Ahad Abid & Muhammad Irtiza</p>
26     <br>
27
28     <h2>Task: Checking Grades</h2>
29     <p>Check the Console for the loop and if-else results!</p>
30
31     <h2>Task: DOM Manipulation</h2>
32     <p id="demo">Original Text: Click the button to change me.</p>
33
34     <button onclick="myFunction()">Click Me</button>
35
36     <script>
37         // Task 1: Variables and Math
38         let marks = 88;
39         let bonus = 5;
40         let total = marks + bonus;
41         console.log("Total Marks: " + total);
42
43         // Task 2: If Else Condition
44         if (total >= 50) {

```
- Status Bar:** Screen Reader Optimized, Ln 22, Col 7, Spaces: 4, UTF-8, LF, HTML, etc.

The screenshot shows a web browser window with the title "Lab4IntroductiontoJavaScriptindex.html — Yippo\_Crochet\_Project." The address bar also displays the same URL. The browser interface includes standard navigation buttons (back, forward, search) and a toolbar with icons for file operations. On the left, there's a sidebar with various icons for file management. The main content area is a code editor displaying the following HTML and JavaScript code:

```
.dist > Lab4IntroductiontoJavaScriptindex.html > html > body
2   <html>
22  <body>
36    <script>
43      // Task 2: If Else Condition
44      if (total >= 50) {
45        console.log("Status: You have Passed");
46      } else {
47        console.log("Status: You Failed");
48      }
49
50      // Task 3: For Loop
51      console.log("Printing numbers 1 to 5:");
52      for (let i = 1; i <= 5; i++) {
53        console.log(i);
54      }
55
56      // Task 4: Function to change text
57      function myFunction() {
58        // changing the text inside the p tag
59        document.getElementById("demo").innerHTML = "Hello! The text has changed successfully.";
60
61        // showing an alert box
62        alert("Button was clicked!");
63
64        // changing the color
65        document.getElementById("demo").style.color = "red";
66      }
67    </script>
68
69  </body>
70 </html>
```

At the bottom of the browser window, there are status indicators: "Screen Reader Optimized", "Ln 22, Col 7", "Spaces: 4", "UTF-8", "LF", "HTML", and a refresh icon.

Output:

The screenshot shows a web page titled "ICT Lab 4: JS Introduction". Below the title, it says "Group Members: Ahad Abid & Muhammad Irtiza". A horizontal line separates this from the first task section. The first task is titled "Task: Checking Grades" and includes the instruction "Check the Console for the loop and if-else results!". The second task is titled "Task: DOM Manipulation" and includes the instruction "Original Text: Click the button to change me." followed by a button labeled "Click Me".

w

## ICT Lab 4: JS Introduction

Group Members: Ahad Abid & Muhammad Irtiza

---

### Task: Checking Grades

Check the Console for the loop and if-else results!

### Task: DOM Manipulation

Original Text: Click the button to change me.

Click Me

# Lab 5,6

## INTRODUCTION TO MS WORD

### Objectives:

In this lab, you will learn to use Microsoft Word.

### Tools/Software Requirement:

- Microsoft Word

### Description:

#### MS Word:

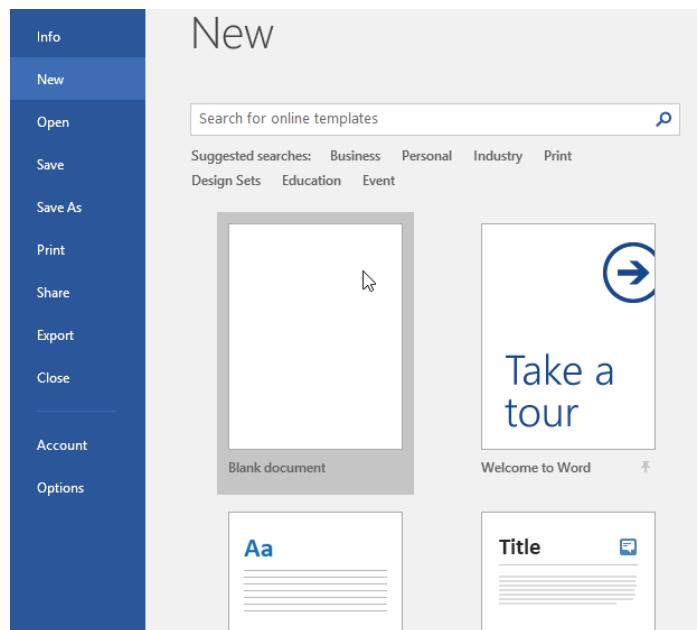
Microsoft Word is a word processing application that allows you to create a variety of documents, including letters, resumes, and more. In this lab, you'll learn how to navigate the Word interface and become familiar with some of its most important features of MS Word.

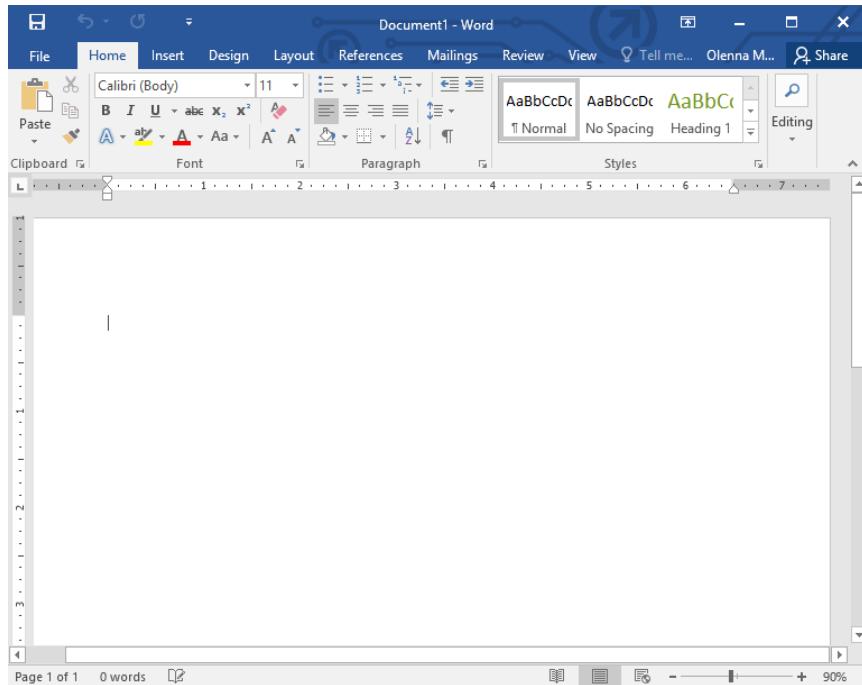
#### Note:

The procedures in this lab will work for all recent versions of Microsoft Word, including Word 2019, Word 2016, and Office 365. There may be some slight differences, but for the most part these versions are similar.

### The Word interface

When you open Word for the first time, the Start Screen will appear. From here, you'll be able to create a new document, choose a template, and access your recently edited documents. From the Start Screen, locate and select Blank document to access the Word interface.



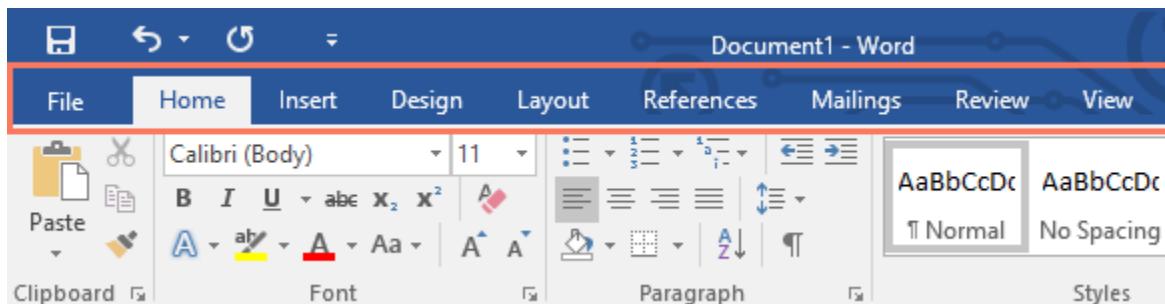


## Working with the Word environment

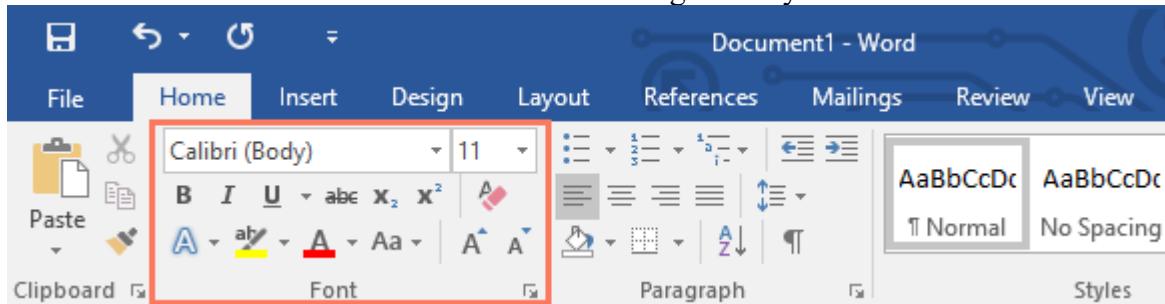
All recent versions of Word include the Ribbon and the Quick Access Toolbar, where you'll find commands to perform common tasks in Word, as well as Backstage view.

### The Ribbon

Word uses a tabbed Ribbon system instead of traditional menus. The Ribbon contains multiple tabs, which you can find near the top of the Word window.

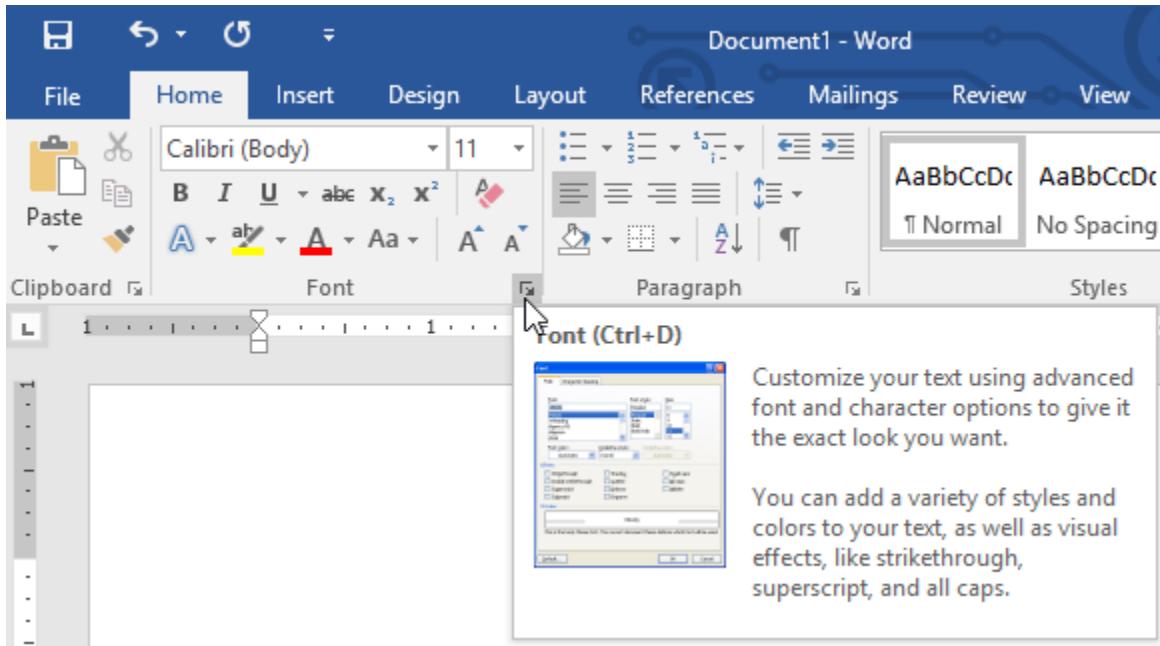


Each tab contains several groups of related commands. For example, the Font group on the Home tab contains commands for formatting text in your document.

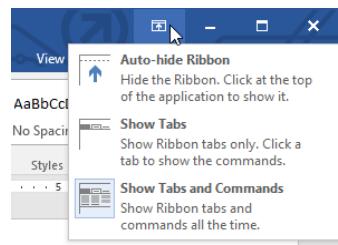


Some also have a arrow in the right corner that you can click for even more options.

groups  
small  
bottom-



**Showing and hiding the Ribbon** If you find that the Ribbon takes up too much screen space, you can hide it. To do this, click the Ribbon Display Options arrow in the upper-right corner of the Ribbon, then select the desired option from the drop-down menu:



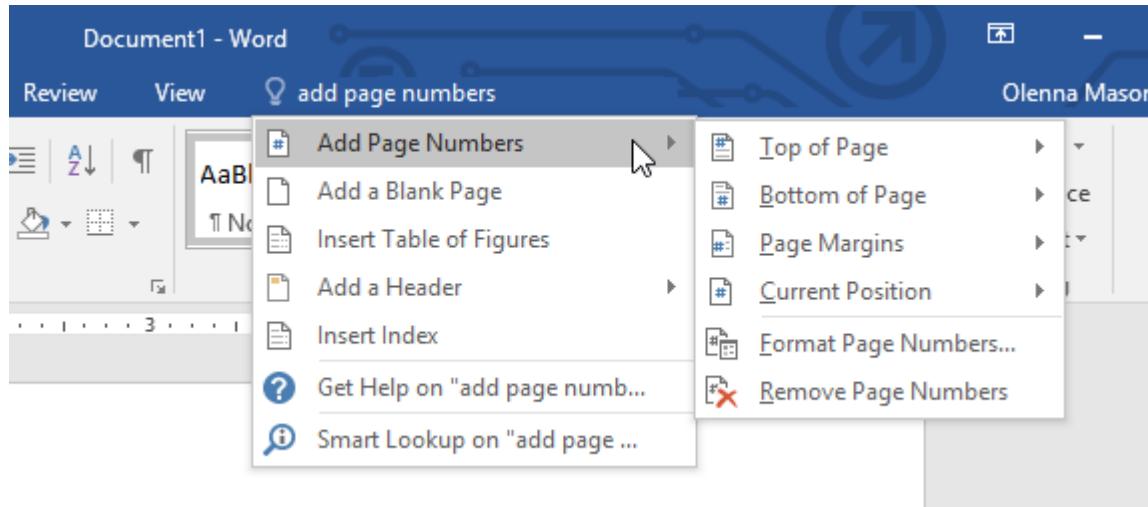
**Auto-hide Ribbon:** Auto-hide displays your document in full-screen mode and completely hides the Ribbon from view. To show the Ribbon, click the Expand Ribbon command at the top of screen.

**Show Tabs:** This option hides all command groups when they're not in use, but tabs will remain visible. To show the Ribbon, simply click a tab.

**Show Tabs and Commands:** This option maximizes the Ribbon. All of the tabs and commands will be visible. This option is selected by default when you open Word for the first time.

### Using the Tell me feature

If you're having trouble finding a command you want, the Tell Me feature can help. It works just like a regular search bar. Type what you're looking for, and a list of options will appear. You can then use the command directly from the menu without having to find it on the Ribbon.

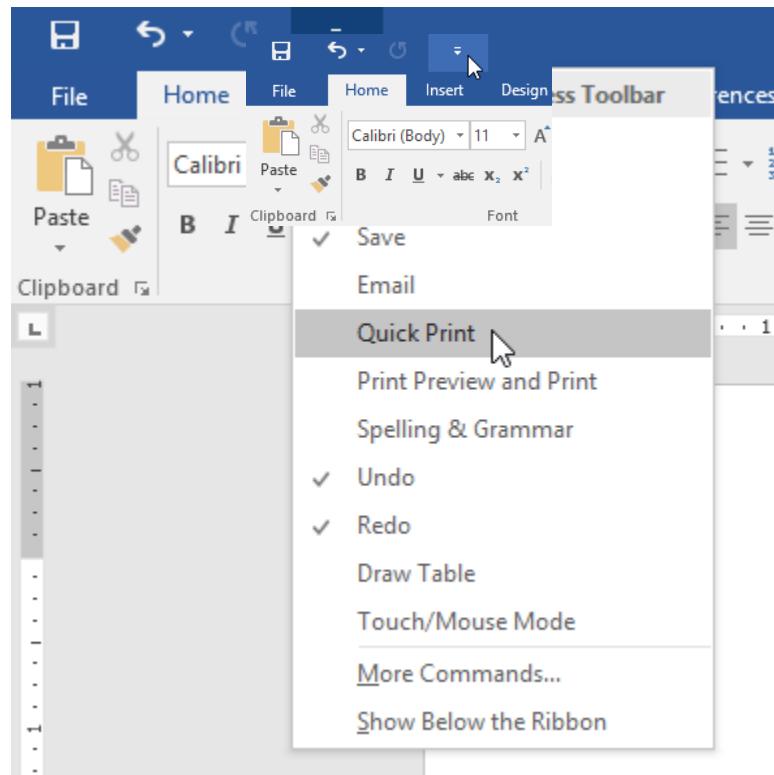


## The Quick Access Toolbar

Located just above the Ribbon, the Quick Access Toolbar lets you access common commands no matter which tab is selected. By default, it shows the Save, Undo, and Redo commands, but you can add other commands depending on your needs.

To add commands to the Quick Access Toolbar:

Click the drop-down arrow to the right of the Quick Access Toolbar.



Select the command you want to add from the menu

1. The command will be added to the Quick Access Toolbar.

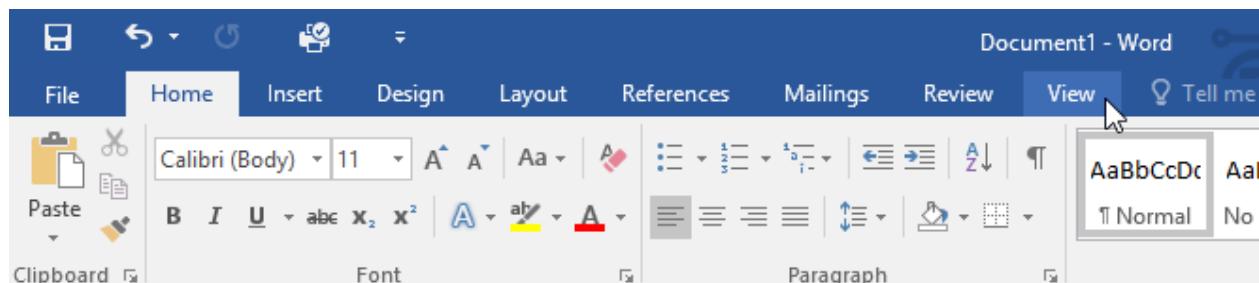
### The Ruler



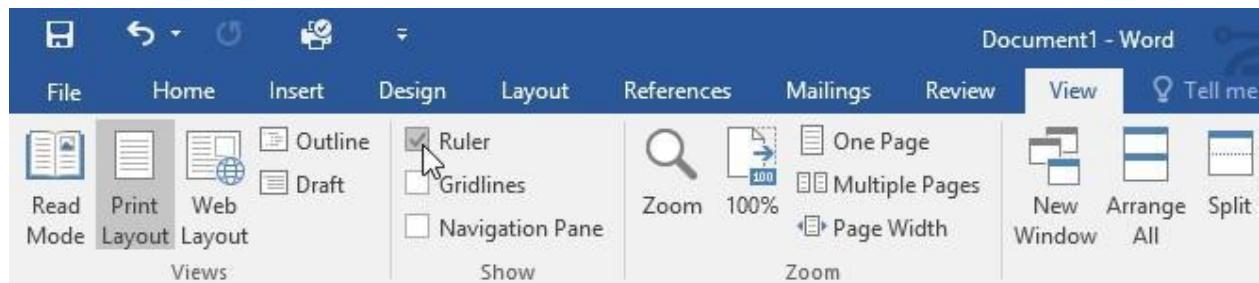
The Ruler is located at the top and to the left of your document. It makes it easier to adjust your document with precision. If you want, you can hide the Ruler to create more screen space.

To show or hide the Ruler:

Click the View tab.

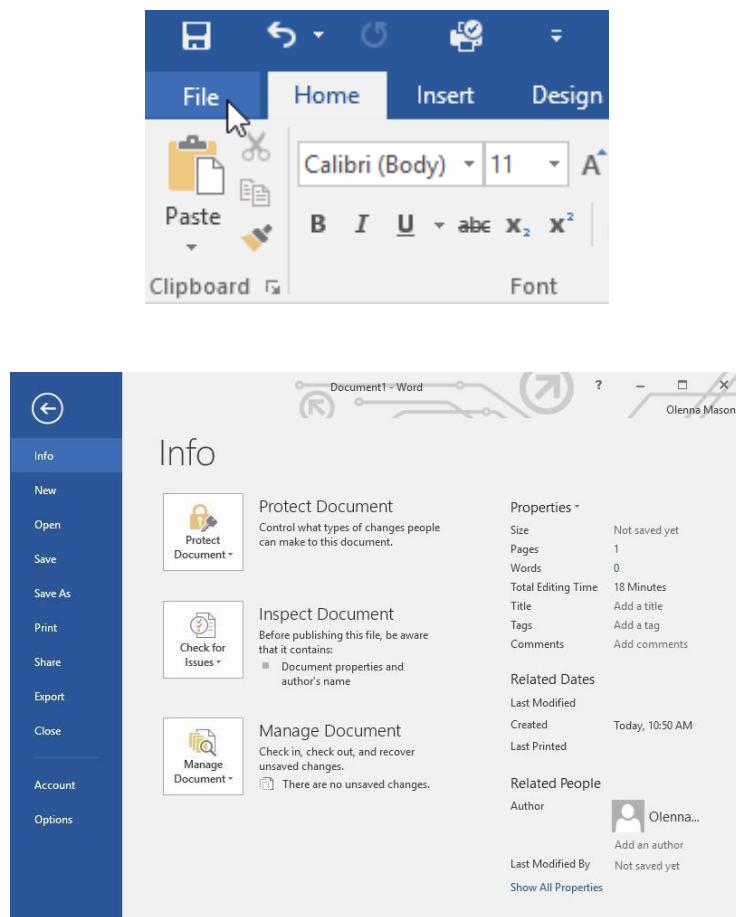


Click the checkbox next to Ruler to show or hide the Ruler.



### Backstage view

Backstage view gives you various options for saving, opening a file, printing, and sharing your document. To access Backstage view, click the File tab on the Ribbon.



## Document views and zooming

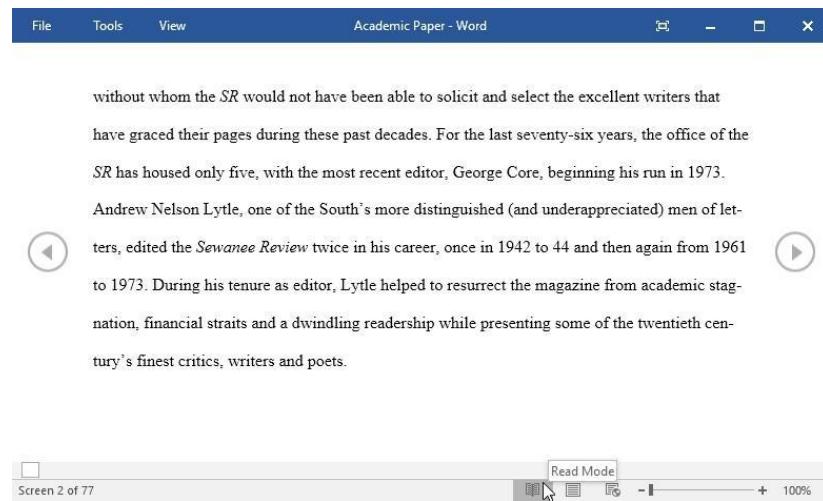
Word has a variety of viewing options that change how your document is displayed. You can choose to view your document in Read Mode, Print Layout, or Web Layout. These views can be useful for various tasks, especially if you're planning to print the document. You can also zoom in and out to make your document easier to read.

### Switching document views

Switching between different document views is easy. Just locate and select the desired document view command in the bottom-right corner of the Word window.

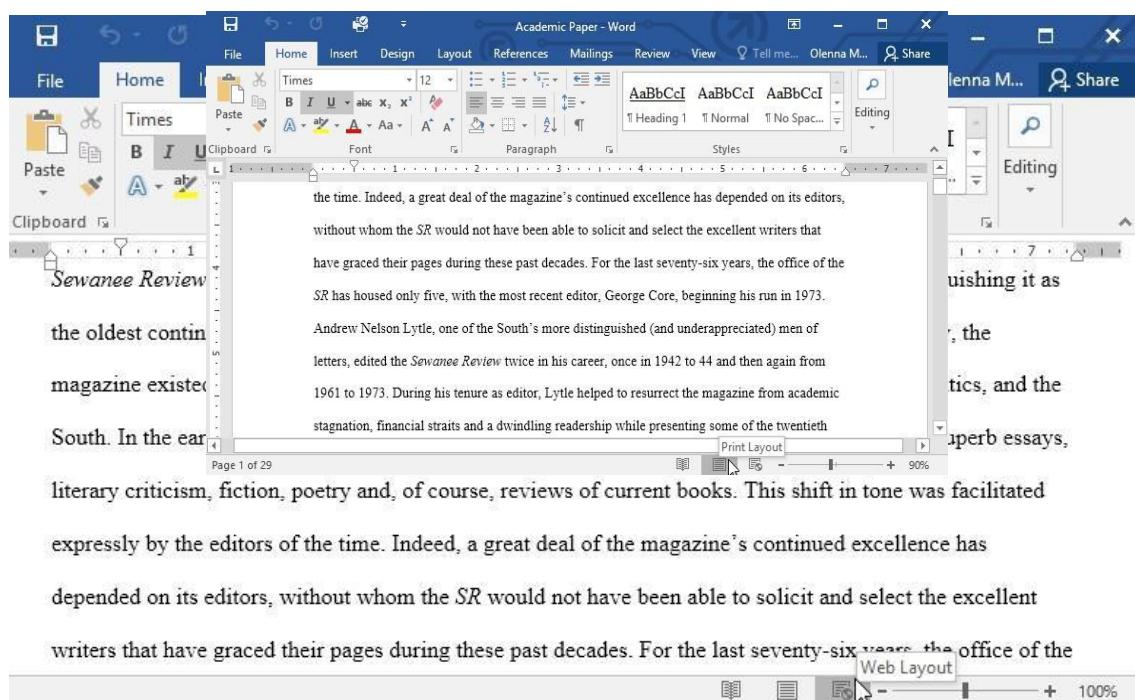
- **Read Mode:** This view opens the document to a full screen. This view is great for reading large amounts of text or simply reviewing your work.

**Print Layout:** This is the default document view in Word. It shows what the document will look like on the printed



page.

**Web Layout:** This view displays the document as a webpage, which can be helpful if you're using Word to publish content online.



### Zooming in and out

To zoom in or out, click and drag the zoom control slider in the bottom-right corner of the Word window.

You can also select the + or - commands to zoom in or out by smaller increments. The number next to the slider displays the current zoom percentage, also called the zoom level.

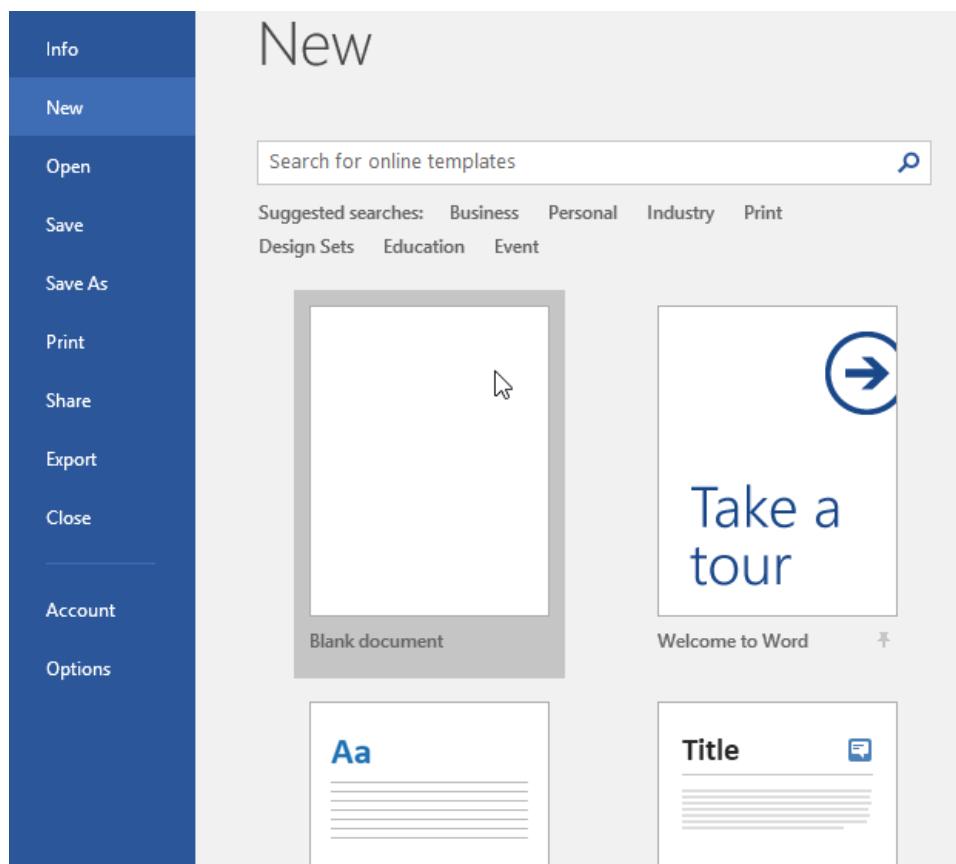
## Creating and Opening Documents

Word files are called documents. Whenever you start a new project in Word, you'll need to create a new document, which can either be blank or from a template. You'll also need to know how to open an existing document.

To create a new blank document:

When beginning a new project in Word, you'll often want to start with a new blank document.

- Select the File tab to access Backstage view.

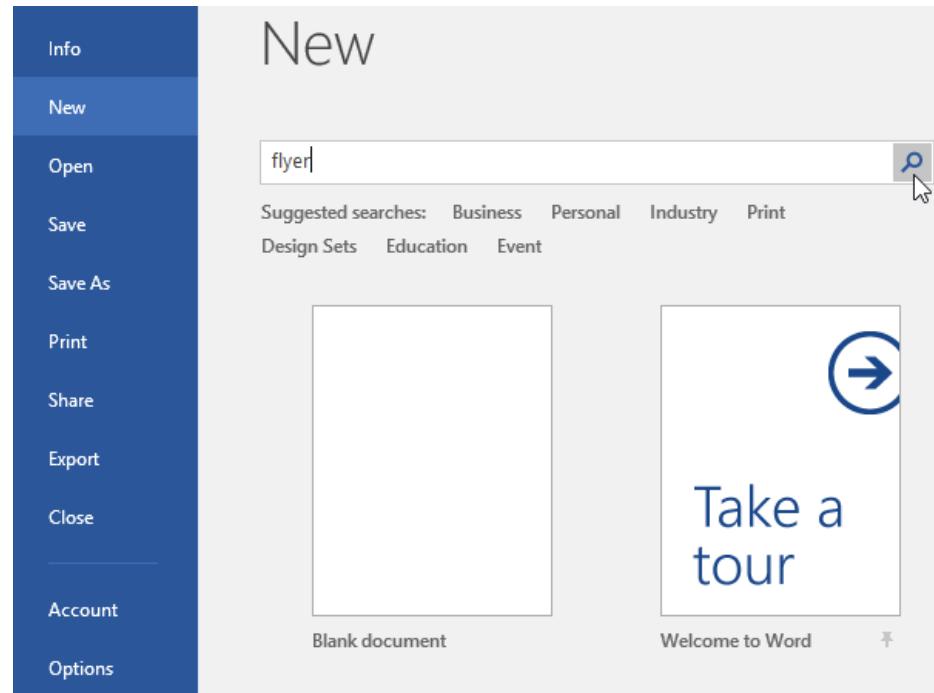


- Select New, then click Blank document.
- A new blank document will appear.

## To create a new document from a template:

A template is a predesigned document you can use to create a new document quickly. Templates often include custom formatting and designs, so they can save you a lot of time and effort when starting a new project.

1. Click the File tab to access Backstage view, then select New.
2. Several templates will appear below the Blank document option. You can also use the search bar to find something more specific. In our example, we'll search for a flyer template.



3. When you find something you like, select a template to preview it.

**Seasonal event flyer**

**Summer event flyer**

**Fall flyer**

**Seasonal event flyer (spr...)**

**Seasonal event flyer (wi...)**

**Seasonal event flyer (au...)**

4. A preview of the template will appear. Click Create to use the selected template.

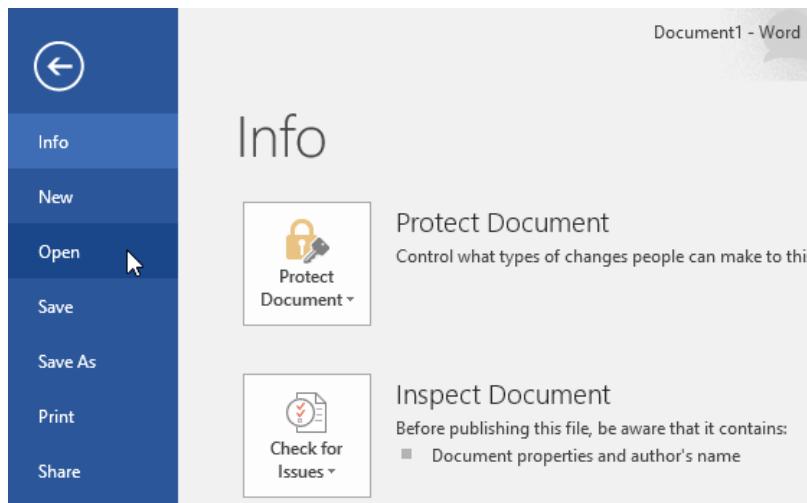


5. A new document will appear with the selected template.

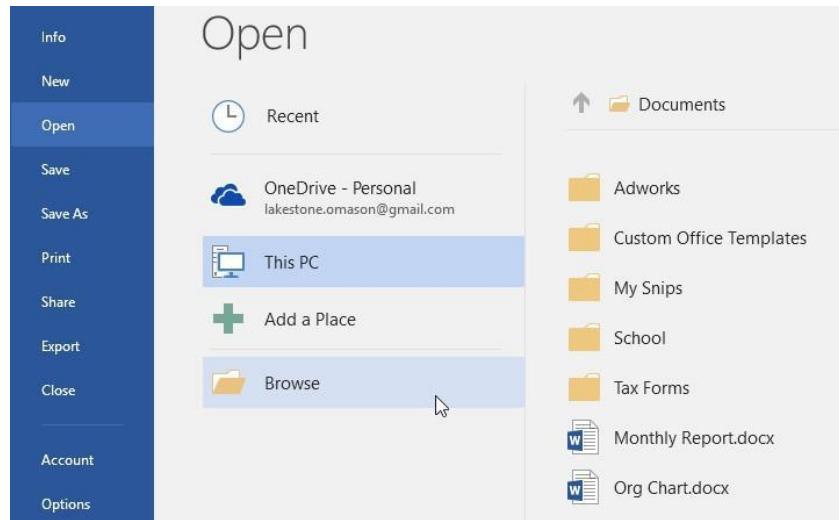
#### To open an existing document:

In addition to creating new documents, you'll often need to open a document that was previously saved. To learn more about saving documents, visit our lesson on Saving and Sharing Documents.

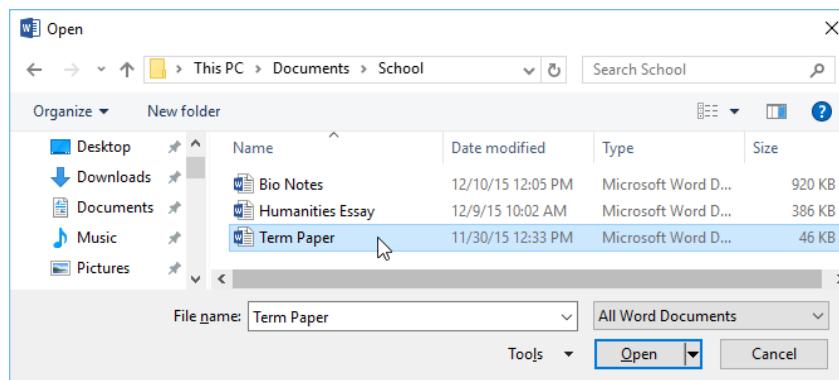
1. Navigate to Backstage view, then click Open.



2. Select This PC, then click Browse. You can also choose OneDrive to open files stored on your OneDrive.



3. The Open dialog box will appear. Locate and select your document, then click Open.



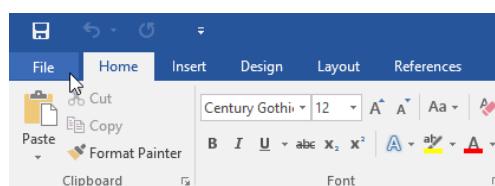
4. The selected document will appear.

## Printing Documents

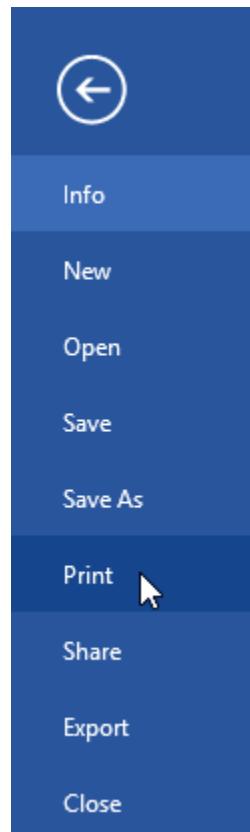
Once you've created your document, you may want to print it to view and share your work offline. It's easy to preview and print a document in Word using the Print pane.

To access the Print pane:

1. Select the File tab. Backstage view will appear.



2. Select Print. The Print pane will appear.



Word2016\_Printing\_Practice - Word

Javier Flores

Print

Copies: 1

Print

Printer: Lexmark MX310dn Ready

Printer Properties

Settings

Print All Pages: The whole thing

Pages:

Print One Sided: Only print on one side of th...

Collated: 1,2,3 1,2,3

Portrait Orientation

Letter: 8.5" x 11"

Normal Margins: Left: 1" Right: 1"

1 Page Per Sheet

Westbrook-Parker Monthly Report

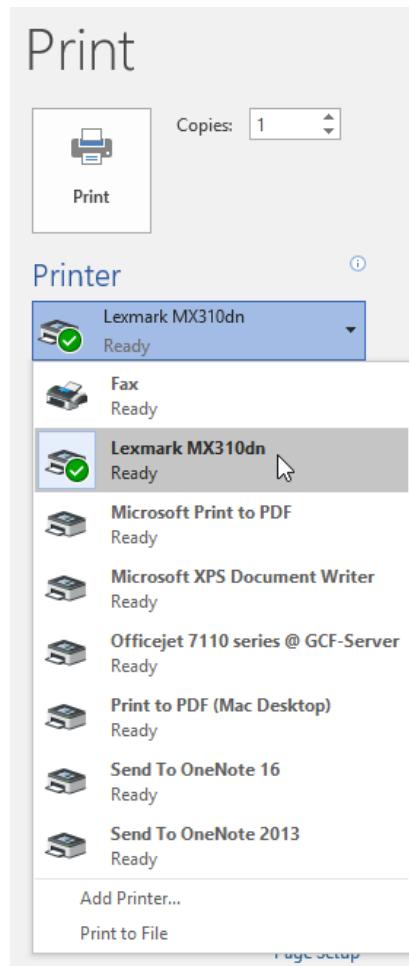
JANUARY 2016

1 of 5 35%

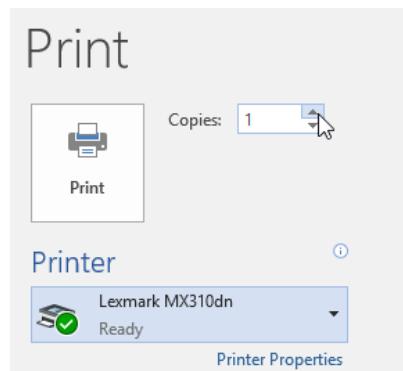
This screenshot shows the Microsoft Word ribbon with the "Print" option selected. The main content area displays a document titled "Westbrook-Parker Monthly Report" for "JANUARY 2016". The "Print" pane is open, showing settings for printing multiple copies (1), using the "Lexmark MX310dn" printer, and various print options like "Print All Pages" and "Portrait Orientation". The status bar at the bottom indicates "1 of 5" pages and a zoom level of "35%".

### To print a document:

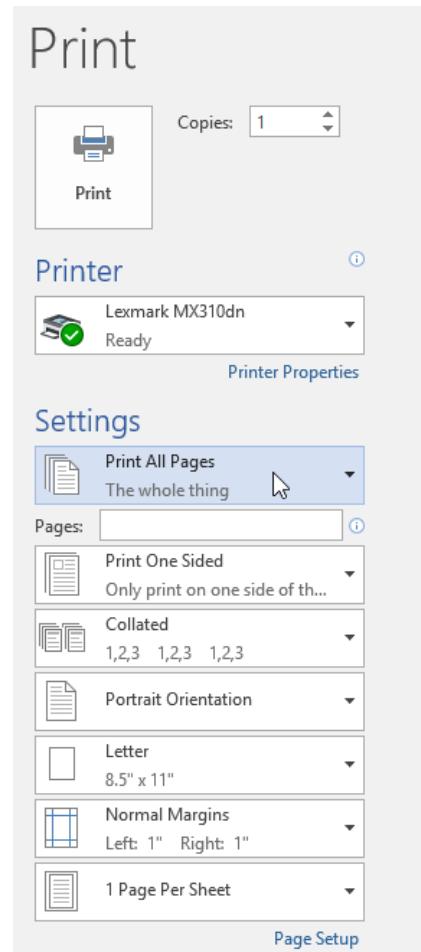
1. Navigate to the Print pane, then select the desired printer.



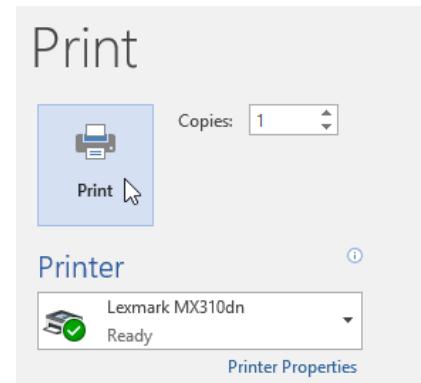
2. Enter the number of copies you want to print.



3. Select any additional settings if needed.



4. Click Print.



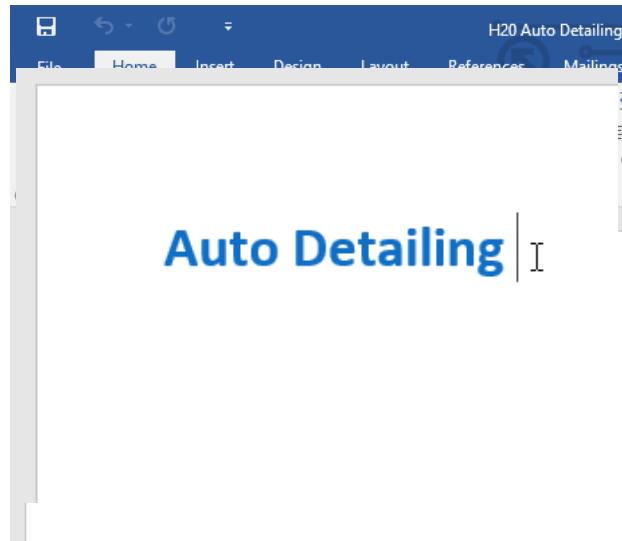
## Text Basics

If you're new to Microsoft Word, you'll need to learn the basics of typing, editing, and organizing text. Basic tasks include the ability to add, delete, and move text in your document, as well as how to cut, copy, and paste.

## Using the insertion point to add text

The insertion point is the blinking vertical line in your document. It indicates where you can enter text on the page. You can use the insertion point in a variety of ways.

- **Blank document:** When a new blank document opens, the insertion point will appear in the top-left corner of the page. If you want, you can begin typing from this location.



- **Adding spaces:** Press the spacebar to add spaces after a word or in between text.
- **New paragraph line:** Press Enter on your keyboard to move the insertion point to the next paragraph line.

## Auto Detailing Services List

- **Manual placement:** Once you begin typing, you can use the mouse to move the insertion point to a specific place in your document. Simply click the location in the text where you want to place it.

## Auto Detailing Services List

- **Arrow keys:** You can also use the arrow keys on your keyboard to move the insertion point. The left and right arrow keys will move between adjacent characters on the same line, while the up and down arrows will move between paragraph lines. You can also press Ctrl+Left or Ctrl+Right to quickly move between entire words.

### Selecting text

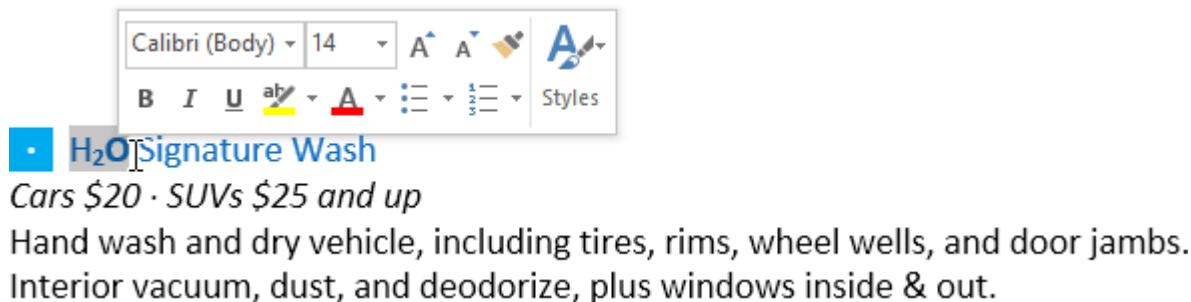
Before you can move or format text, you'll need to select it. To do this, click and drag your mouse over the text, then release the mouse. A highlighted box will appear over the selected text.

#### • H<sub>2</sub>O Signature Wash

Cars \$20 · SUVs \$25 and up

Hand wash and dry vehicle, including tires, rims, wheel wells, and door jambs.  
Interior vacuum, dust, and deodorize, plus windows inside & out.

When you select text or images in Word, a hover toolbar with command shortcuts will appear. If the toolbar does not appear at first, try hovering the mouse over the selection.

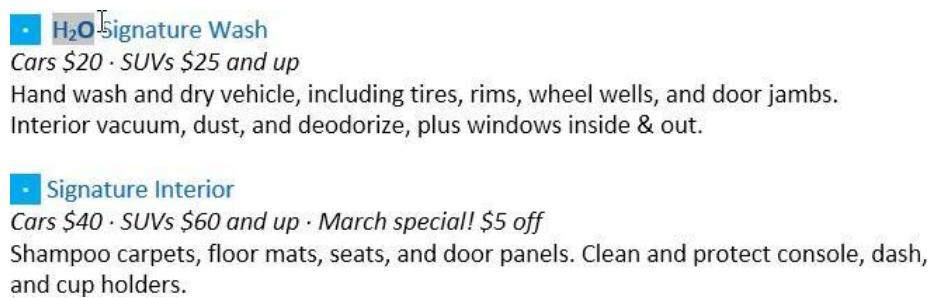


### Copying and moving text

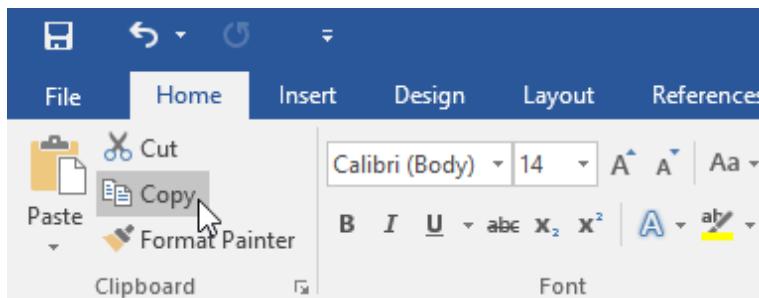
Word allows you to copy text that's already in your document and paste it in other places, which can save you a lot of time and effort. If you want to move text around in your document, you can cut and paste or drag and drop.

#### To copy and paste text:

- Select the text you want to copy.



- Click the Copy command on the Home tab. You can also press Ctrl+C on your keyboard.

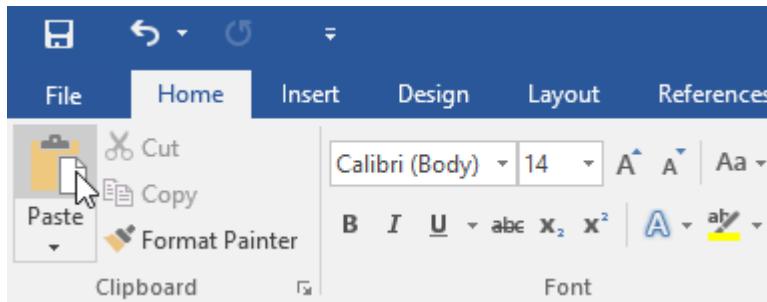


- Place the insertion point where you want the text to appear.

**H<sub>2</sub>O Signature Wash**  
*Cars \$20 · SUVs \$25 and up*  
 Hand wash and dry vehicle, including tires, rims, wheel wells, and door jambs.  
 Interior vacuum, dust, and deodorize, plus windows inside & out.

**Signature Interior**  
*Cars \$40 · SUVs \$60 and up · March special! \$5 off*  
 Shampoo carpets, floor mats, seats, and door panels. Clean and protect console, dash, and cup holders.

- Click the Paste command on the Home tab. You can also press Ctrl+V on your keyboard.



- The text will appear.

**H<sub>2</sub>O Signature Wash**  
*Cars \$20 · SUVs \$25 and up*  
 Hand wash and dry vehicle, including tires, rims, wheel wells, and door jambs.  
 Interior vacuum, dust, and deodorize, plus windows inside & out.

**Signature Interior**  
*Cars \$40 · SUVs \$60 and up · March special! \$5 off*  
 Shampoo carpets, floor mats, seats, and door panels. Clean and protect console, dash, and cup holders.

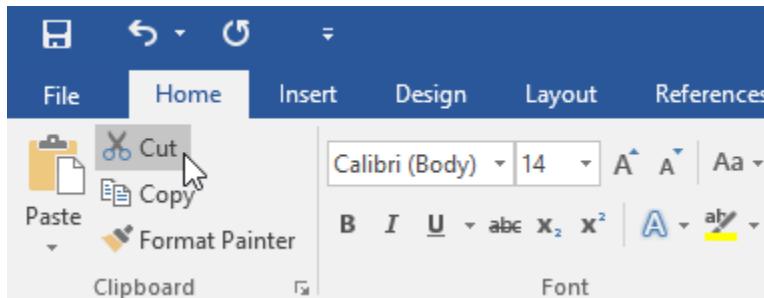
### To cut and paste text:

- Select the text you want to cut.

**H<sub>2</sub>O Signature Wash**  
*Cars \$20 · SUVs \$25 and up*  
 Hand wash and dry vehicle, including tires, rims, wheel wells, and door jambs.  
 Interior vacuum, dust, and deodorize, plus windows inside & out.

**Signature Interior**  
*Cars \$40 · SUVs \$60 and up · March special! \$5 off*  
 Shampoo carpets, floor mats, seats, and door panels. Clean and protect console, dash, and cup holders.

- Click the Cut command on the Home tab. You can also press Ctrl+X on your keyboard.



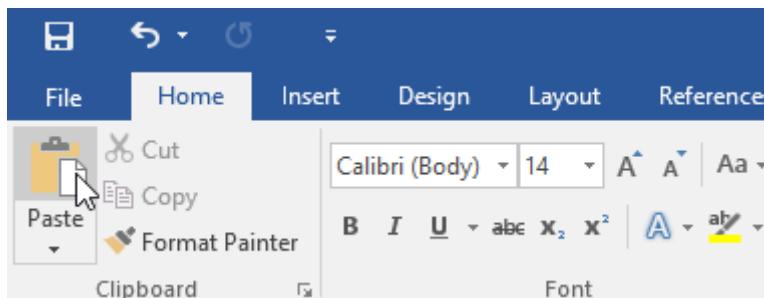
- Place your insertion point where you want the text to appear.

**H<sub>2</sub>O Signature Wash**  
Cars \$20 · SUVs \$25 and up  
Hand wash and dry vehicle, including tires, rims, wheel wells, and door jambs.  
Interior vacuum, dust, and deodorize, plus windows inside & out.

**H<sub>2</sub>O Signature Interior**  
Cars \$40 · SUVs \$60 and up · March special! \$5 off  
Shampoo carpets, floor mats, seats, and door panels. Clean and protect console, dash,  
and cup holders.

**Leather Cleaning & Conditioning**  
Cars \$20 · SUVs \$40 and up · March special! \$5 off  
Includes seats and door panels.

- Click the Paste command on the Home tab. You can also press Ctrl+V on your keyboard.



- The text will appear.

**H<sub>2</sub>O Signature Wash**  
Cars \$20 · SUVs \$25 and up  
Hand wash and dry vehicle, including tires, rims, wheel wells, and door jambs.  
Interior vacuum, dust, and deodorize, plus windows inside & out.

**H<sub>2</sub>O Signature Detail**  
Cars \$60 · SUVs \$75 and up · March special! \$10 off  
Everything included in the Signature Wash, plus hand wax and buff. I

**H<sub>2</sub>O Signature Interior**  
Cars \$40 · SUVs \$60 and up · March special! \$5 off  
Shampoo carpets, floor mats, seats, and door panels. Clean and protect console, dash,  
and cup holders.

You can also cut, copy, and paste by right-clicking your document and choosing the desired action from the drop-down menu. When you use this method to paste, you can choose from three options that determine how the text will be formatted: Keep Source Formatting, Merge Formatting, and Keep Text Only. You can hover the mouse over each icon to see what it will look like before you select it.

### Document Shortcuts

<b>Ctrl + N</b>	Create new document	<b>Ctrl + P</b>	Open Print dialogue box
<b>Ctrl + S</b>	Save document	<b>Ctrl + Y</b>	Redo last action
<b>Ctrl + Z</b>	Undo last action	<b>F4</b>	Repeat last action
<b>Ctrl + A</b>	Select all	<b>F9</b>	Update field
<b>F7</b>	Start Spellchecker	<b>Ctrl + Alt+T</b>	Insert ™

#### To drag and drop text:

- Select the text you want to move.

 Paint Correction & Protection  
Call for pricing · March special! 10% off

*Prices may vary depending on size of vehicle. Heavily soiled vehicles are subject to an additional charge.* []  
**Schedule your appointment today!**  
Contact Hank Odum at 321-555-5400 or hank@H2Omobile.com  
Special rates available for weekly/monthly customers

[H<sub>2</sub>O Mobile Wash & Valet](#) | Just leave the details to us

- Click and drag the text to the location where you want it to appear. A small rectangle will appear below the arrow to indicate that you are moving text.

 Paint Correction & Protection  
Call for pricing · March special! 10% off

*Prices may vary depending on size of vehicle. Heavily soiled vehicles are subject to an additional charge.* []  
**Schedule your appointment today!**  
Contact Hank Odum at 321-555-5400 or hank@H2Omobile.com  
Special rates available for weekly/monthly customers

[H<sub>2</sub>O Mobile Wash & Valet](#) | Just leave the details to us



- Release the mouse, and the text will appear.

 Paint Correction & Protection  
Call for pricing · March special! 10% off

**Schedule your appointment today!**  
Contact Hank Odum at 321-555-5400 or hank@H2Omobile.com  
Special rates available for weekly/monthly customers

[H<sub>2</sub>O Mobile Wash & Valet](#) | Just leave the details to us

*Prices may vary depending on size of vehicle. Heavily soiled vehicles are subject to an additional charge.* []  

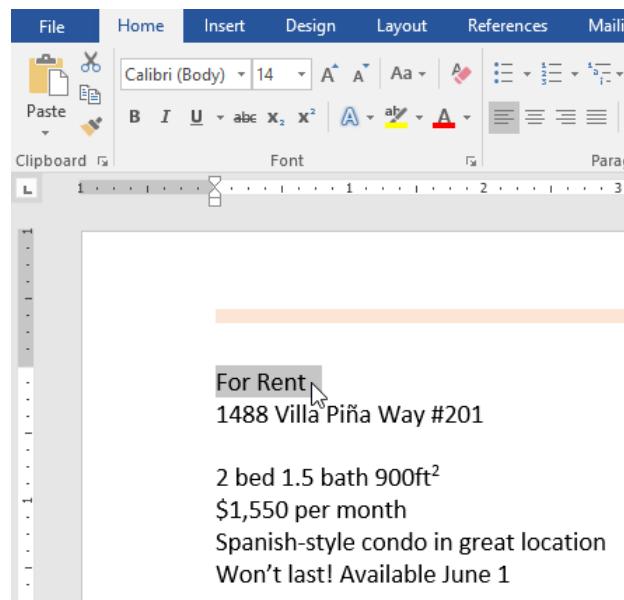

If text does not appear in the exact location you want, you can press the Enter key on your keyboard to move the text to a new line.

## Formatting Text

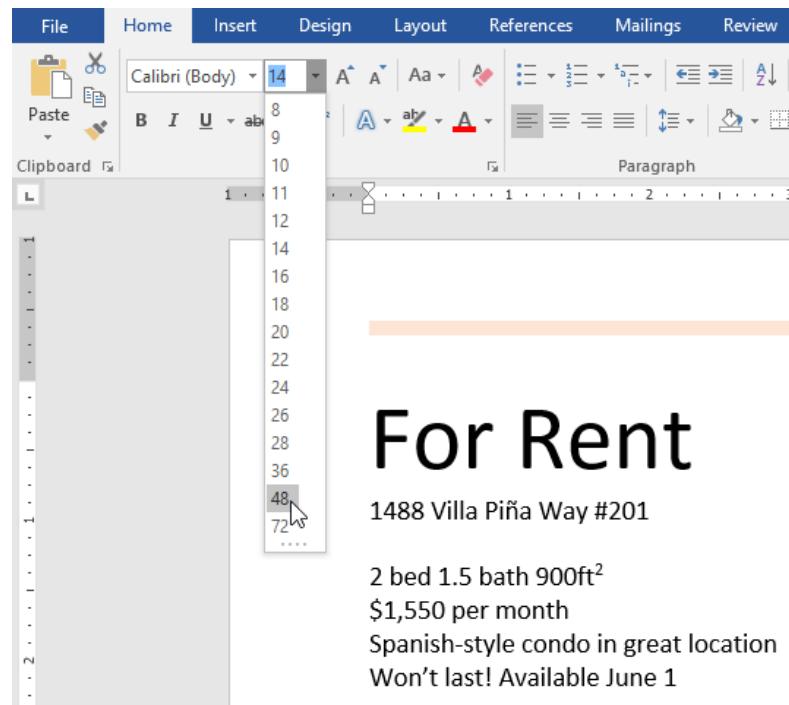
Formatted text can draw the reader's attention to specific parts of a document and emphasize important information. In Word, you have several options for adjusting text, including font, size, and color. You can also adjust the alignment of the text to change how it is displayed on the page.

### To change the font size:

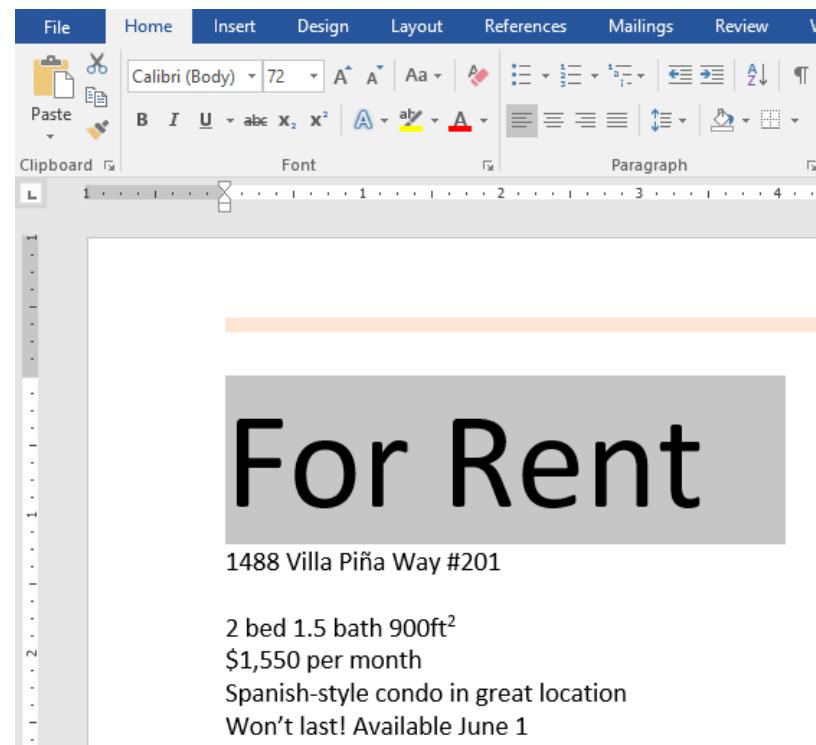
- Select the text you want to modify.



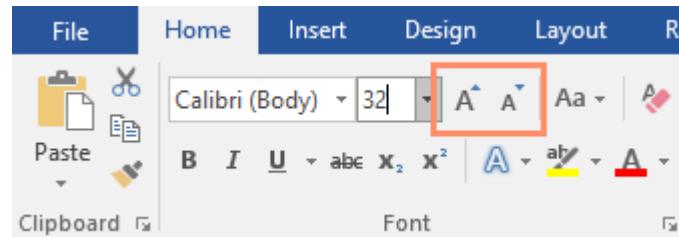
- On the Home tab, click the Font Size drop-down arrow. Select a font size from the menu. If the font size you need is not available in the menu, you can click the Font Size box and type the desired size, then press Enter.



- The font size will change in the document.



- You can also use the Grow Font and Shrink Font commands to change the font size.



### To change the font:

By default, the font of each new document is set to Calibri. However, Word provides many other fonts you can use to customize text.

- Select the text you want to modify.

For Rent

1488 Villa Piña Way #201

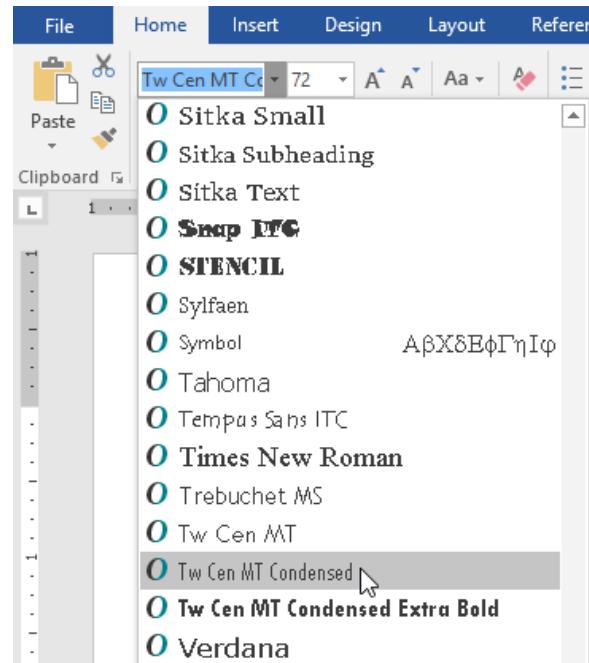
2 bed 1.5 bath 900ft<sup>2</sup>

\$1,550 per month

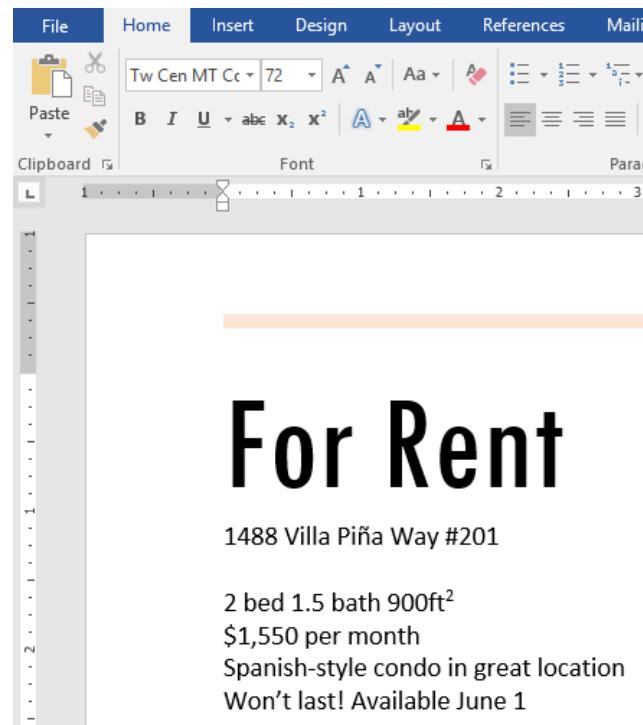
Spanish-style condo in great location

Won't last! Available June 1

5. On the Home tab, click the drop-down arrow next to the Font box. A menu of font styles will appear.
6. Select the font style you want to use.



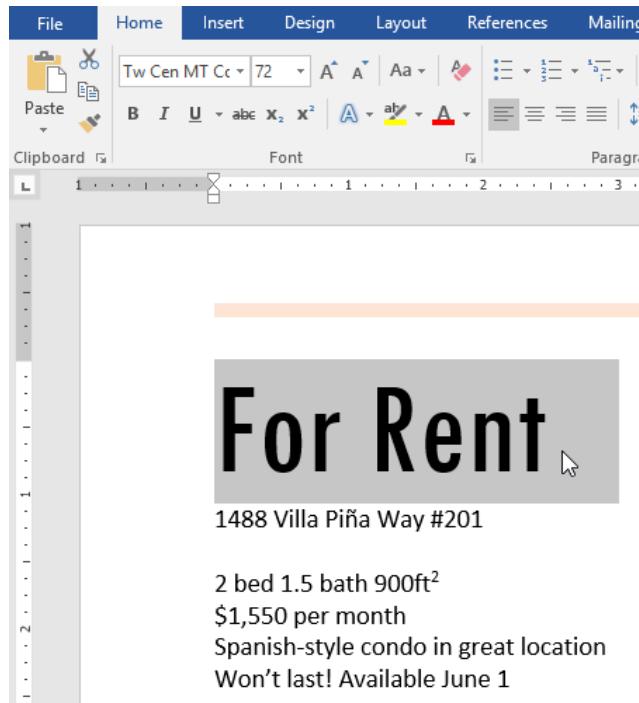
- The font will change in the document.



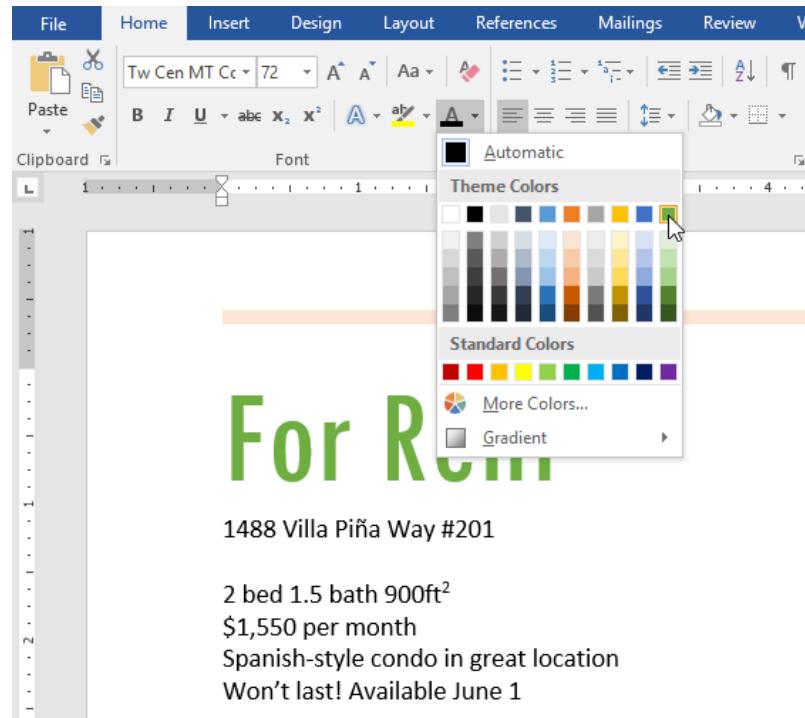
When creating a professional document or a document that contains multiple paragraphs, you'll want to select a font that's easy to read. Along with Calibri, standard reading fonts include Cambria, Times New Roman, and Arial.

**To change the font color:**

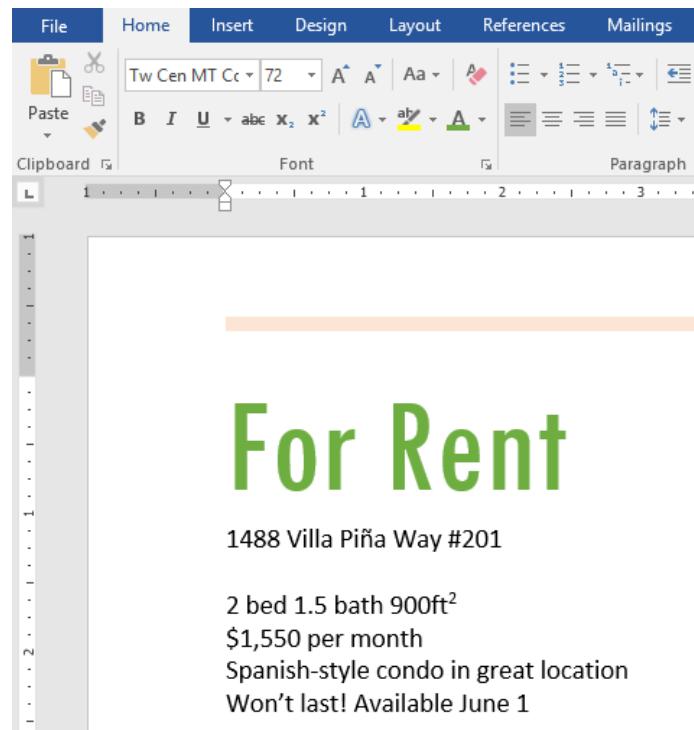
- Select the text you want to modify.



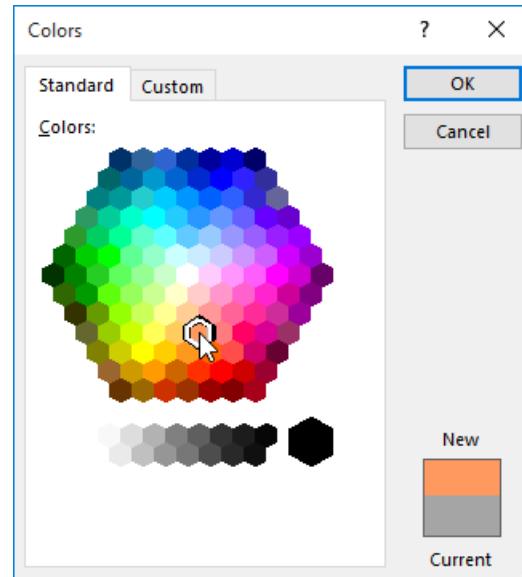
7. On the Home tab, click the Font Color drop-down arrow. The Font Color menu appears.



8. Select the font color you want to use. The font color will change in the document.



Your color choices aren't limited to the drop-down menu that appears. Select More Colors at the bottom of the menu to access the Colors dialog box. Choose the color you want, then click OK.



## Checking Spelling and Grammar

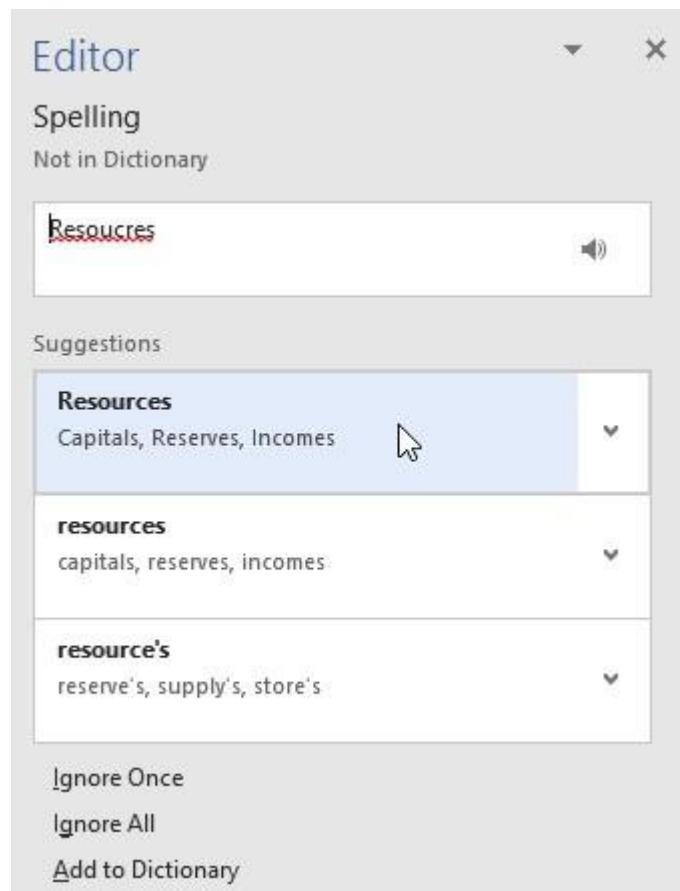
Worried about making mistakes when you type? Don't be. Word provides you with several proofing features—including the Spelling and Grammar tool—that can help you produce professional, error-free documents.

### To run a Spelling and Grammar check:

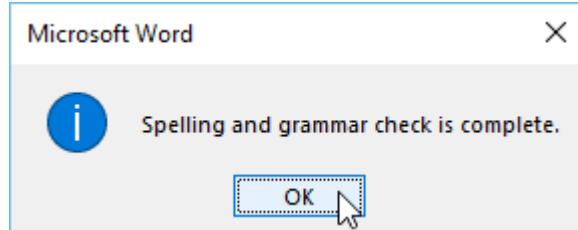
- From the Review tab, click the Spelling & Grammar command.



- The Spelling and Grammar pane will appear on the right. For each error in your document, Word will offer one or more suggestions. Click a suggestion to correct the error.



- Word will move through each error until you have reviewed all of them. After the last error has been reviewed, a dialog box will appear confirming that the spelling and grammar check is complete. Click OK.



If no suggestions are given, you can manually type the correct spelling in your document.

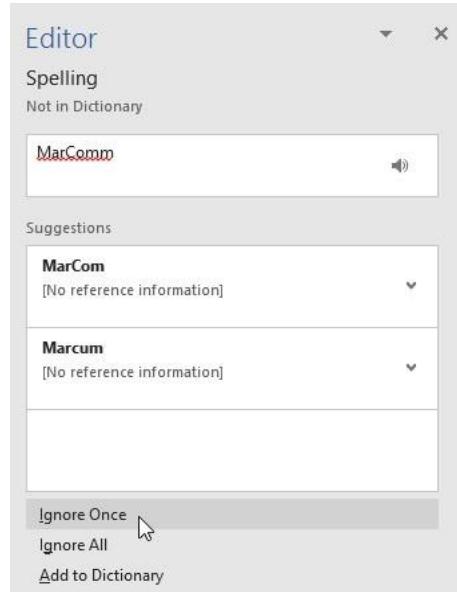
### Ignoring "errors"

The spelling and grammar check is not always correct. Particularly with grammar, there are many errors Word will not notice. There are also times when the spelling and grammar check will say something is an error when it's actually not. This often happens with names and other proper nouns, which may not be in the dictionary.

If Word says something is an error, you can choose not to change it. Depending on whether it's a spelling or grammatical error, you can choose from several options.

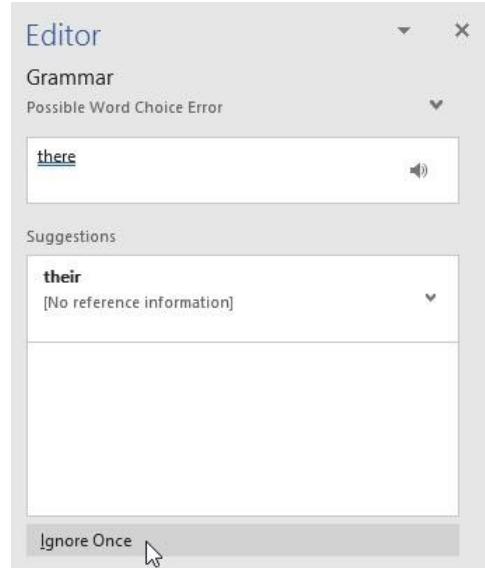
For spelling "errors":

- **Ignore Once:** This will skip the word without changing it.
- **Ignore All:** This will skip the word without changing it, and it will also skip all other instances of the word in the document.
- **Add to Dictionary:** This adds the word to the dictionary so it will never come up as an error. Make sure the word is spelled correctly before choosing this option.



For grammar "errors":

- **Ignore Once:** This will skip the word or phrase without changing it



### Automatic spelling and grammar checking

By default, Word automatically checks your document for spelling and grammar errors, so you may not even need to run a separate check. These errors are indicated by colored lines below the text.

- The red line indicates a misspelled word.
- The blue line indicates a grammatical error, which can include misused words.

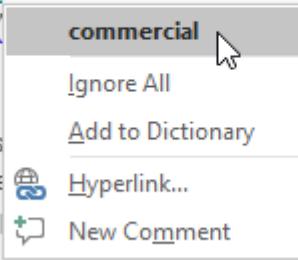
While working toward my degree, I was employed as a marketing assistant with a local grocery company. In addition to assisting the company with there summer promotions, I was able to help the Marketing Specialist develop and carry through ideas for the company's next comercial. I would like to use the knowledge I gained at Fresh Foods to help you're company acheive it's marketing goals, including reaching a broader audience across country. I will complete my degree in marketing in May and will be available for employment in early June.

A misused word—also known as a contextual spelling error—occurs when a word is spelled correctly but used incorrectly. For example, if you used the phrase Deer Mr. Theodore at the beginning of a letter, deer would be a contextual spelling error. Deer is spelled correctly, but it is used incorrectly in the letter. The correct word is Dear.

**To correct spelling errors:**

- Right-click the underlined word, then select the correct spelling from the list of suggestions.

While working toward my degree, I was employed a grocery company. In addition to assisting the company I able to help the Marketing Specialist develop and carry commercial. I would like to use the knowledge I gained at achieve it's marketing goals, including reaching a broad complete me, which more fully d  
Enclos  
Within the  
I'll be hap  
Sincerely,



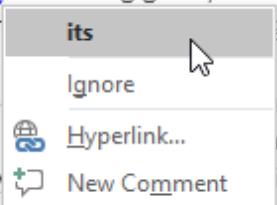
- The corrected word will appear in the document.

You can also choose to Ignore All instances of an underlined word or add it to the dictionary.

**To correct grammar errors:**

- Right-click the underlined word or phrase, then select the correct spelling or phrase from the list of suggestions.

While working toward my degree, I was employed a grocery company. In addition to assisting the company I able to help the Marketing Specialist develop and carry commercial. I would like to use the knowledge I gained at achieve it's marketing goals, including reaching a broad complete me, which more fully d  
Enclos  
Within the  
I'll be hap  
Sincerely,



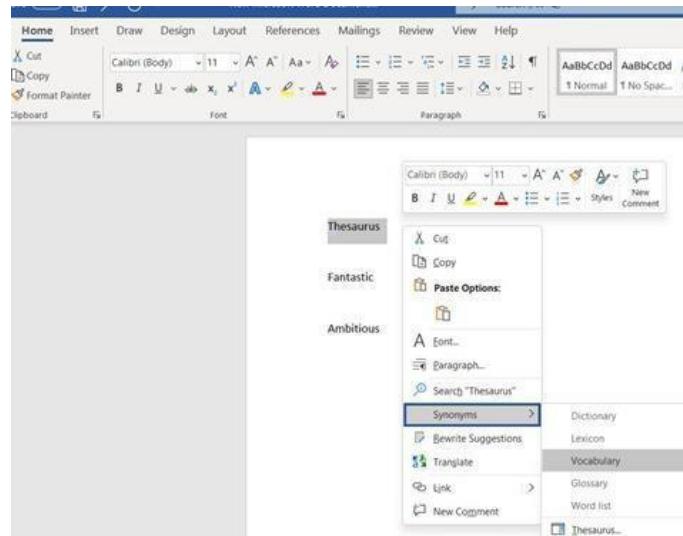
## Thesaurus

The Thesaurus is a feature that we use in Microsoft Word, so that we can find Synonym Words and Antonym Words for the Word in the Document that we have selected.

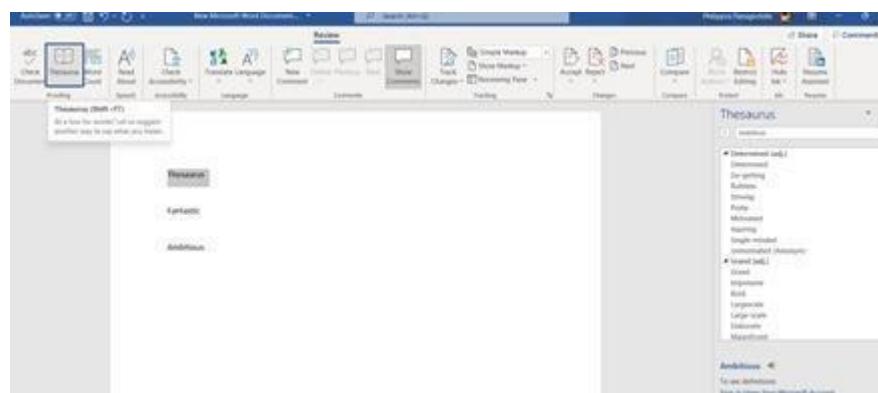
**Synonyms:** Are Words or Phrases that means exactly or nearly the same as another word or phrase in a given Language.

**Antonyms:** Are Words that means the opposite of another word.

All that we must do is to just click on one of the suggestions and the Word in our Document will be replaced with the one selected.



Another way to use the Thesaurus feature is, once again select the Word in our Document and then select the Review tab. Once the Review tab is selected, we locate the area at the left of the Ribbon named Proofing. There is located the command Thesaurus where if we hover over the command we are notified with the following: At A Loss For Words? Let Us Suggest Another Way To Say What You Mean. Once again by selecting the command the Thesaurus task pane will appear at the right of our Microsoft Word Document with all the suggestions that we can select from.



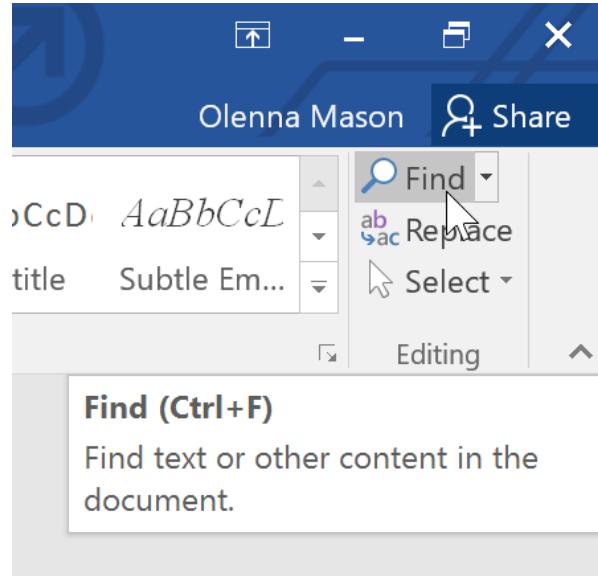
## Using Find and Replace

When you're working with longer documents, it can be difficult and time consuming to locate a specific word or phrase. Word can automatically search your document using the Find feature, and it allows you to quickly change words or phrases using Replace.

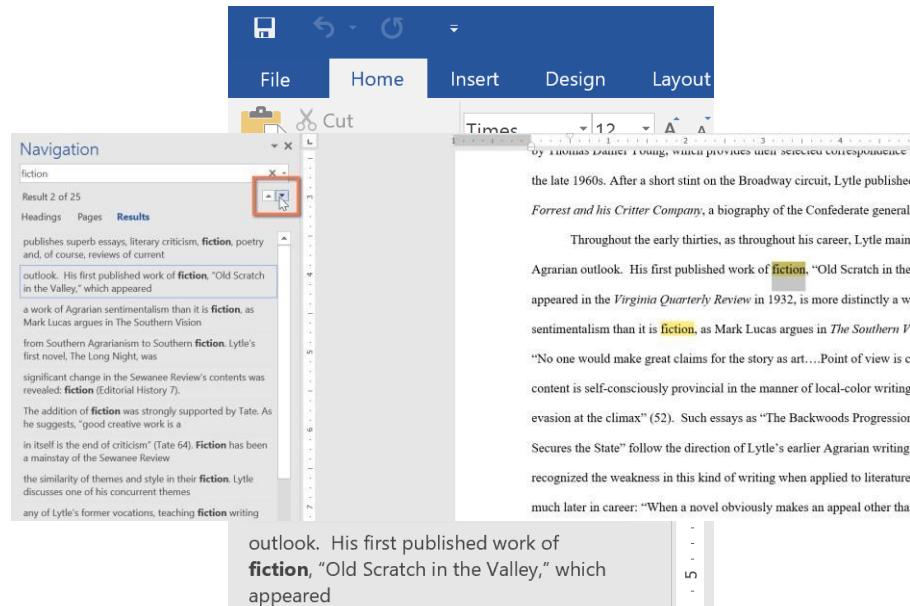
### To find text:

In our example, we've written an academic paper and will use the Find command to locate all instances of a particular word.

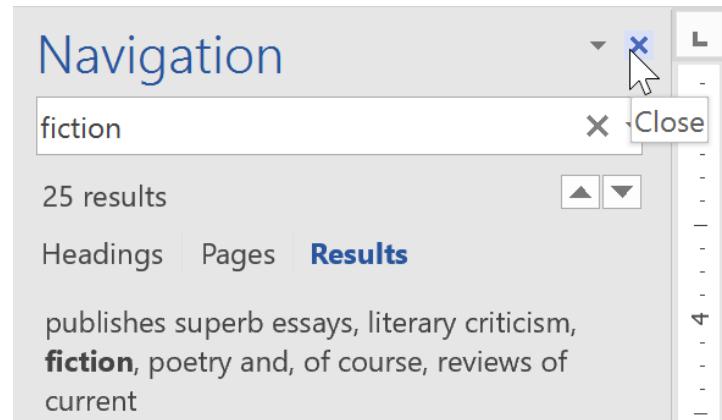
- From the Home tab, click the Find command. You can also press Ctrl+F on your keyboard.



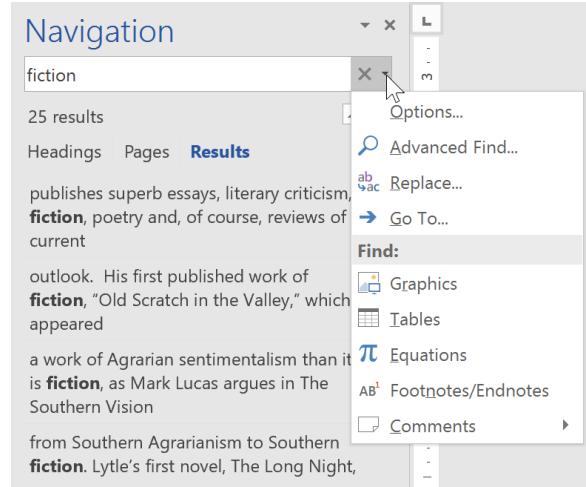
- The navigation pane will appear on the left side of the screen.
- Type the text you want to find in the field at the top of the navigation pane. In our example, we'll type the word we're looking for.



- If the text is found in the document, it will be highlighted in yellow and a preview of the results will appear in the navigation pane. You can also click one of the results below the arrows to jump to it.
- When you're finished, click X to close the navigation pane. The highlight will disappear.



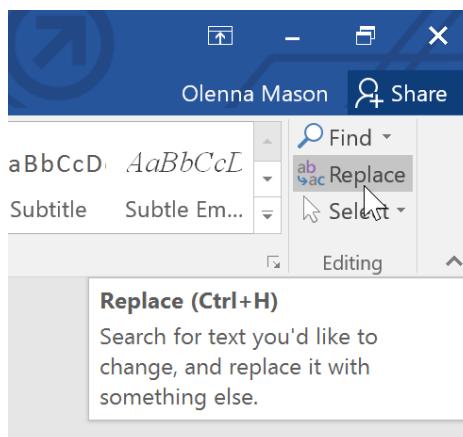
- For more search options, click the drop-down arrow next to the search field.



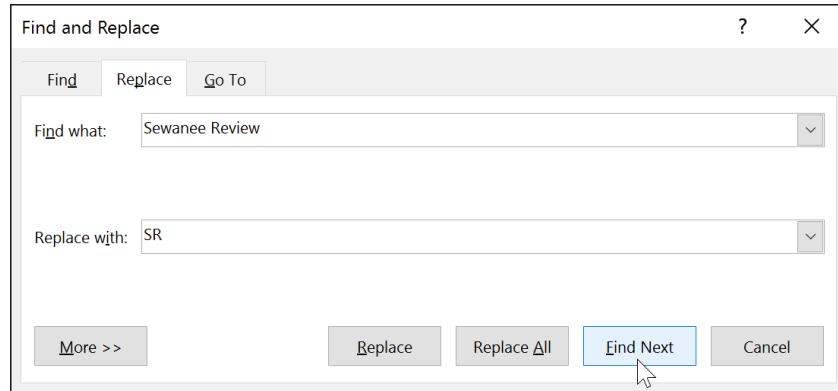
## To replace text:

You may discover that you've made a mistake repeatedly throughout your document, like misspelling someone's name, or that you need to exchange a particular word or phrase for another. You can use Word's Find and Replace feature to quickly make revisions. In our example, we'll use Find and Replace to change the title of a magazine so it is abbreviated.

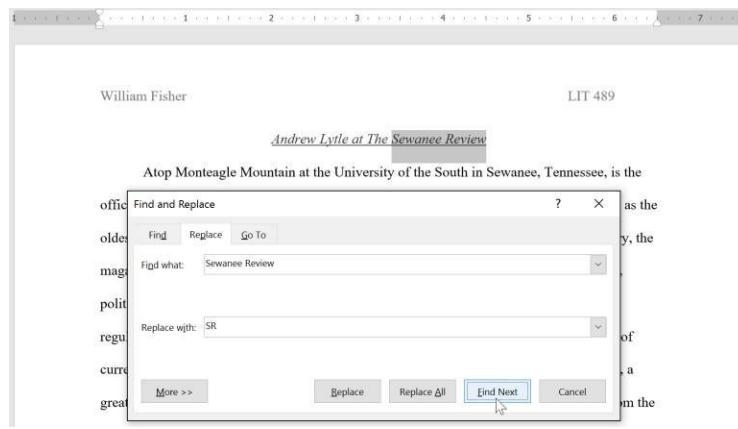
- From the Home tab, click the Replace command. You can also press Ctrl+H on your keyboard.
- The Find and Replace dialog box will appear.
- Type the text you want to find in the Find what: field.



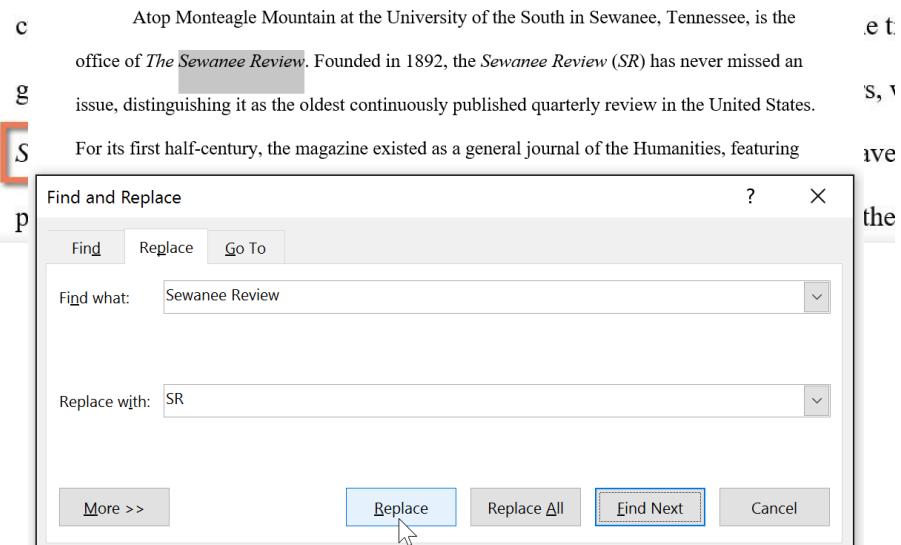
- Type the text you want to replace it with in the Replace with: field, then click Find Next.



- Word will find the first instance of the text and highlight it in gray.
- Review the text to make sure you want to replace it. In our example, the text is part of the title of the paper and does not need to be replaced. We'll click Find Next again to jump to the next instance.



- If you want to replace it, you can click Replace to change individual instances of text. You can also click Replace All to replace every instance of the text throughout the document.
- The text will be replaced.



- When you're done, click Close or Cancel to close the dialog box.
- For additional search options, click More in the Find and Replace dialog box. From here, you

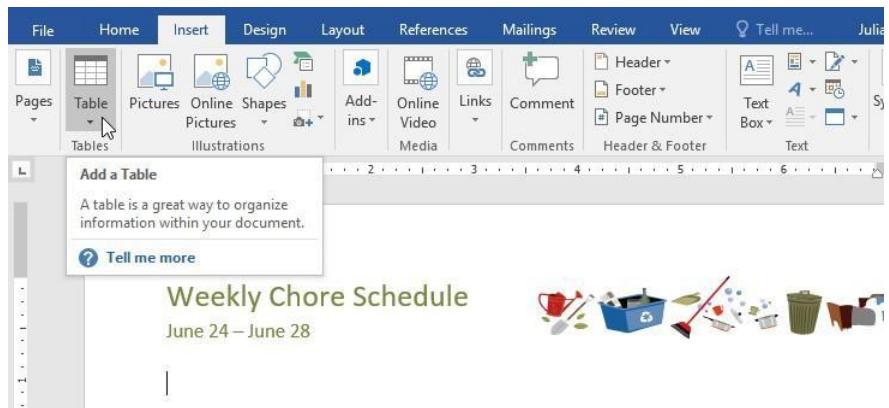
can select additional options, like matching case and ignoring punctuation.

## Tables

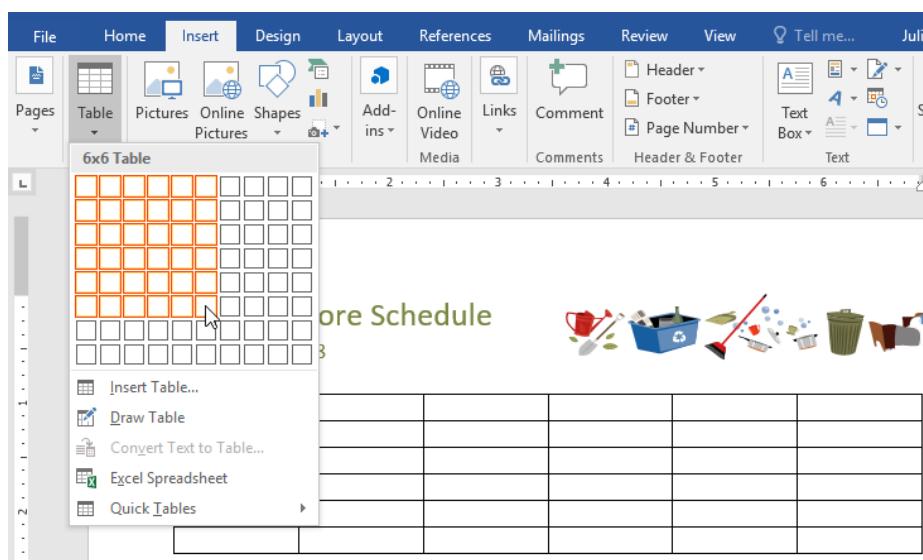
A table is a grid of cells arranged in rows and columns. Tables can be used to organize any type of content, whether you're working with text or numerical data. In Word, you can quickly insert a blank table or convert existing text to a table. You can also customize your table using different styles and layouts.

To insert a blank table:

- Place the insertion point where you want the table to appear.
- Navigate to the Insert tab, then click the Table command.



- This will open a drop-down menu that contains a grid. Hover over the grid to select the number of columns and rows you want.



Click the grid to confirm your selection, and a table will appear.

- To enter text, place the insertion point in any cell, then begin typing.

Monday	Tuesday	Wednesday			

To navigate between cells, use the Tab key or arrow keys on your keyboard. If the insertion point is in the last cell, pressing the Tab key will automatically create a new row.

#### To convert existing text to a table:

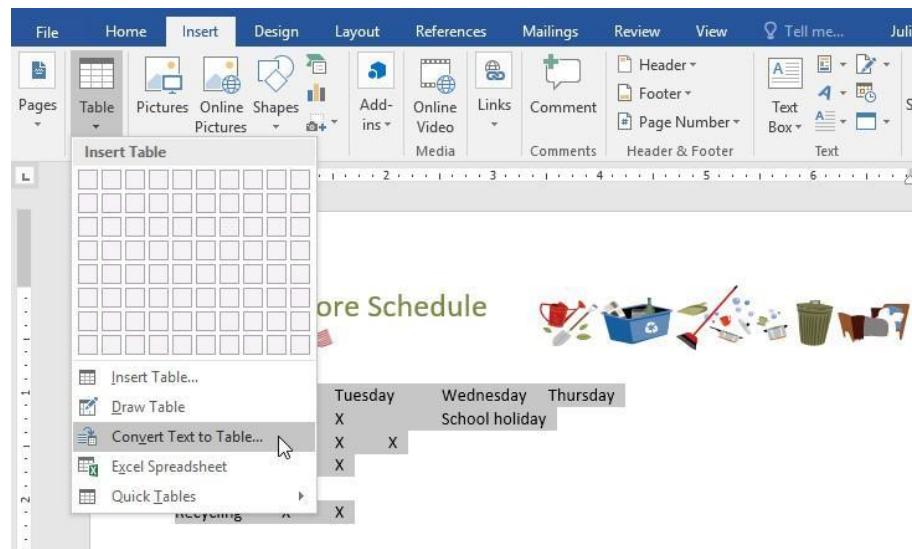
In the example below, each line of text contains part of a checklist, including chores and days of the week. The items are separated by tabs. Word can convert this information into a table, using the tabs to separate the data into columns.

- Select the text you want to convert to a table.

**Weekly Chore Schedule**  
July 1 – July 5 

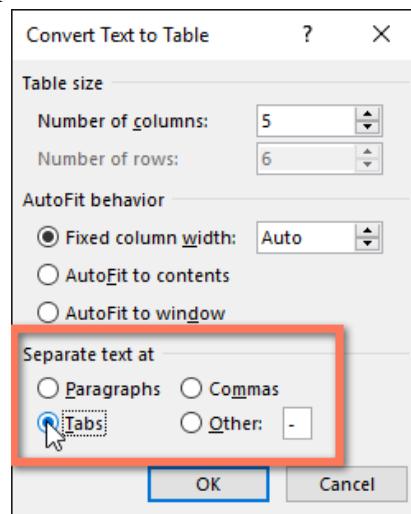
	Monday	Tuesday	Wednesday	Thursday
Homework	X	X		School holiday
Feed fish	X	X	X	
Dishes	X	X		
Sweeping				
Recycling	X	X		

- Go to the Insert tab, then click the Table command.
- Select Convert Text to Table from the drop-down menu.



A dialog box will appear. Choose one of the options under Separate text at. This is how Word knows what to put into each column.

- Click OK. The text will appear in a table.



**Weekly Chore Schedule**  
July 1 – July 5 

	Monday	Tuesday	Wednesday	Thursday
Homework	X	X		School holiday
Feed fish	X	X	X	
Dishes	X	X	X	
Sweeping				
Recycling	X	X		

## Modifying tables

You can easily change the appearance of your table once you've added one to your document. There are several options for customization, including adding rows or columns and changing the table style.

To add a row or column:

- Hover outside the table where you want to add a row or column. Click the plus sign that appears.



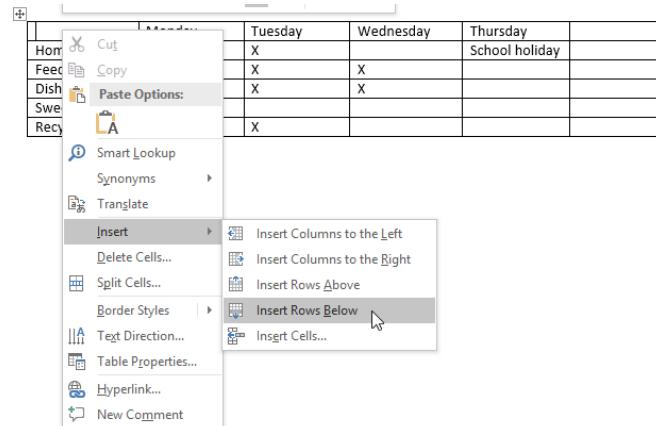
	Monday	Tuesday	Wednesday	Thursday
Homework	X	X		School holiday
Feed fish	X	X	X	
Dishes	X	X	X	
Sweeping				
Recycling	X	X		

- A new row or column will be added to the table.



	Monday	Tuesday	Wednesday	Thursday	
Homework	X	X		School holiday	
Feed fish	X	X	X		
Dishes	X	X	X		
Sweeping					
Recycling	X	X			

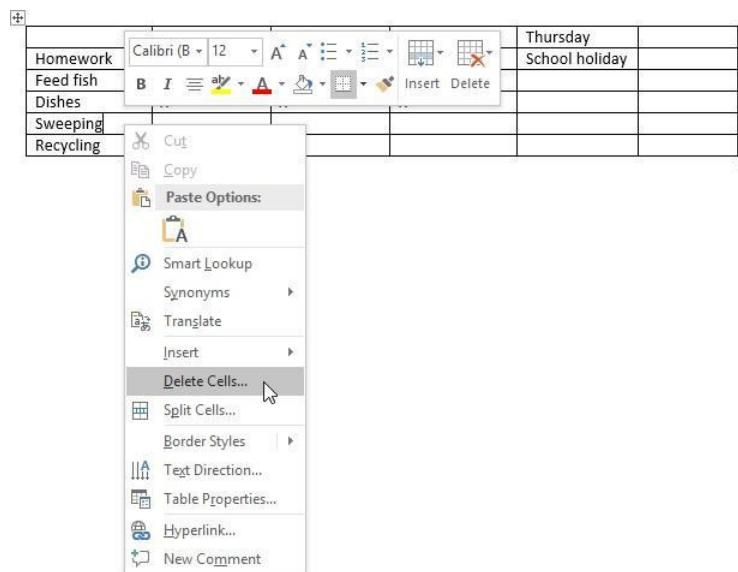
- You can also right-click the table, then hover over Insert to see various row and column options.



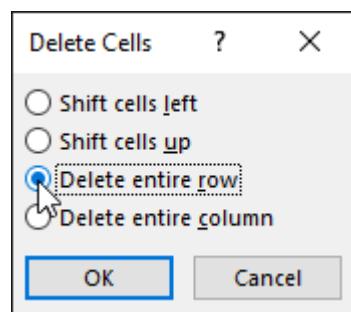
To delete a row or column:

- Place the insertion point in the row or column you want to delete.

- Right-click, then select Delete Cells from the menu.



- A dialog box will appear. Choose Delete entire row or Delete entire column, then click OK.



- The row or column will be deleted.

### Sort Tables

Word can sort data in a table alphabetically, numerically, or chronologically (by date). In addition, it can sort information in ascending (low to high / A to Z) or descending (high to low / Z to A) order. You can sort an entire table or a portion of a table by selecting what you want to sort.

1. Click inside the table.

You can also select a range of cells to sort just those cells.

2. Click the Layout tab in the Table Tools ribbon group.

3. Expand the Data group, if necessary.

4. Click the Sort button.
5. Set up your sort criteria.

The screenshot shows a Microsoft Word document titled "09-sort-a-table". A table is selected, indicated by a large orange circle labeled "1". The ribbon is visible at the top, with the "Layout" tab selected. In the "Data" section of the ribbon, the "Sort" button is highlighted with an orange circle labeled "2". A context menu is open over the table, with the "Sort" button also highlighted with an orange circle labeled "3". Another orange circle labeled "4" points to the "Sort" button in the context menu. The table contains the following data:

Location	Excursion Length	Standard	Loyalty
Las Vegas	3-day	\$1,000	\$850
Paris	3-day	\$2,000	\$1,600
Beijing	3-day	\$4,000	\$3,500
Las Vegas	5-day	\$1,700	\$1,400
Paris	5-day	\$3,400	\$3,000
Beijing	5-day	\$5,000	\$4,500
Las Vegas	7-day	\$2,500	\$2,000
Paris	7-day	\$5,000	\$4,500
Beijing	7-day	\$7,000	\$6,500

The initial options selected in this dialog box will be automatically set based on the data in the table.

- First, select which column to sort by. If your table has a header row, you'll be able to see the column names in the first list field. Otherwise, the columns will simply be numbered.
- Next, select how to sort, either by Text, Number, or Date.
- Finally, choose whether to sort in Ascending or Descending order.

To sort by multiple criteria, add additional sort choices with the Then by dropdown.

The screenshot shows the "Sort" dialog box in Microsoft Word. Step 5 highlights the "Sort by" section, where "Location" is selected as the column to sort by, "Text" is chosen as the type, and "Ascending" is selected. Step 6 highlights the "OK" button at the bottom right of the dialog box. The table below shows the sorted data:

Location	Excursion Length	Standard	Loyalty
Beijing	5-day	\$5,000	\$4,500
Las Vegas	7-day	\$2,500	\$2,000
Paris	7-day	\$5,000	\$4,500
Beijing	7-day	\$7,000	\$6,500

6. Click OK.

The table is rearranged, as the data is sorted by the criteria you set.

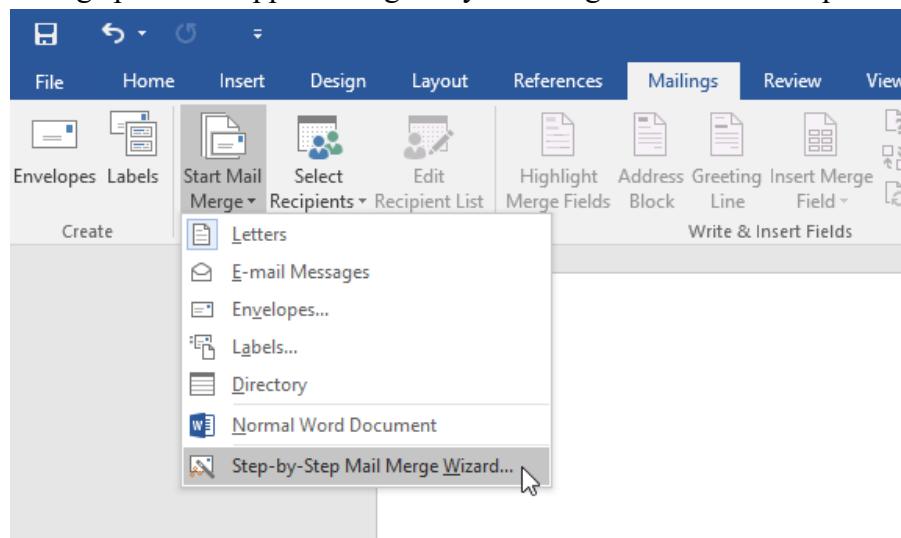
## Mail Merge

Mail Merge is a useful tool that allows you to produce multiple letters, labels, envelopes, name tags, and more using information stored in a list, database, or spreadsheet. When performing a Mail Merge, you will

need a Word document (you can start with an existing one or create a new one) and a recipient list, which is typically an Excel workbook.

### To use Mail Merge:

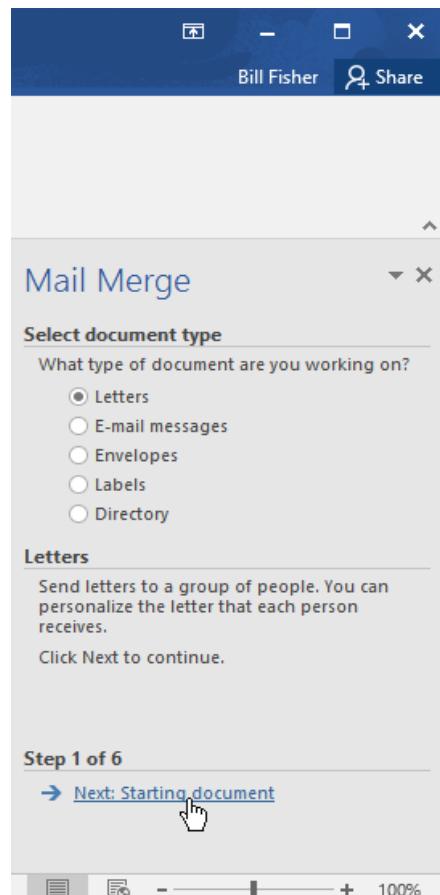
- Open an existing Word document or create a new one.
- From the Mailings tab, click the Start Mail Merge command and select Step-by-Step Mail Merge Wizard from the drop-down menu.
- The Mail Merge pane will appear and guide you through the six main steps to complete a merge. The



following example demonstrates how to create a form letter and merge the letter with a recipient list.

#### Step 1:

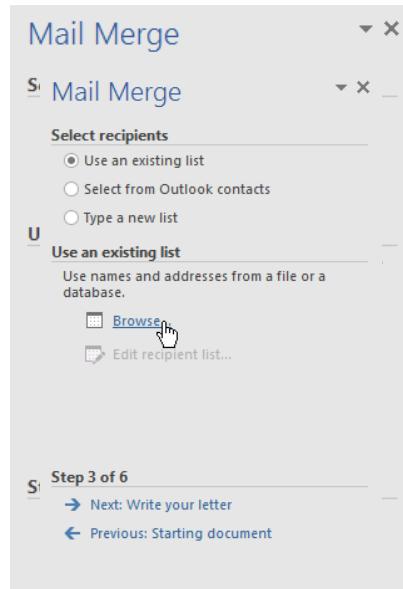
From the Mail Merge task pane on the right side of the Word window, choose the type of document you



want to create. In our example, we'll select Letters. Then click Next: Starting document to move to Step 2  
Step 2:

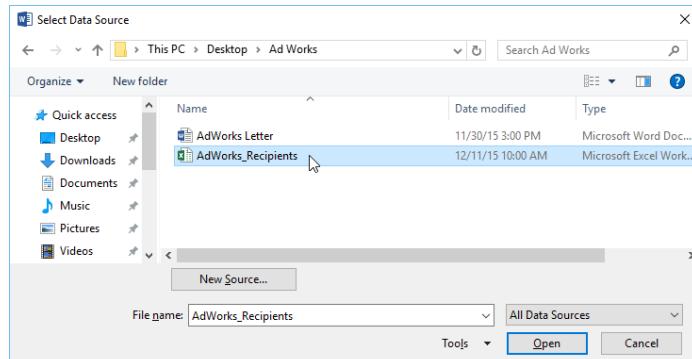
Select Use the current document, then click Next: Select recipients to move to Step 3.

## Step 3:

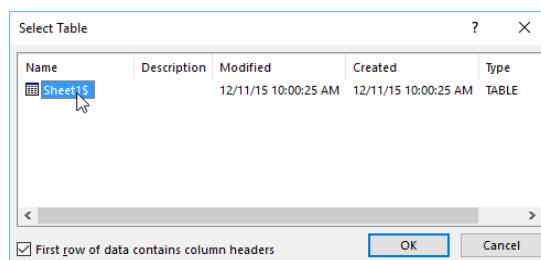


Now you'll need an address list so Word can automatically place each address into the document. The list can be in an existing file, such as an Excel workbook, or you can type a new address list from within the Mail Merge Wizard. Select Use an existing list, then click Browse to select the file.

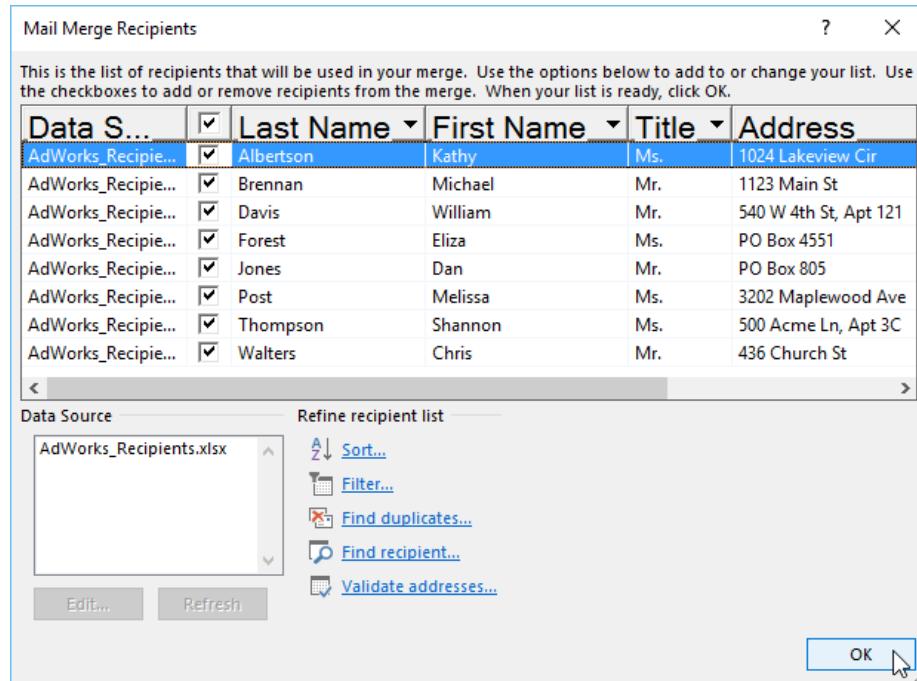
- Locate your file, then click Open.



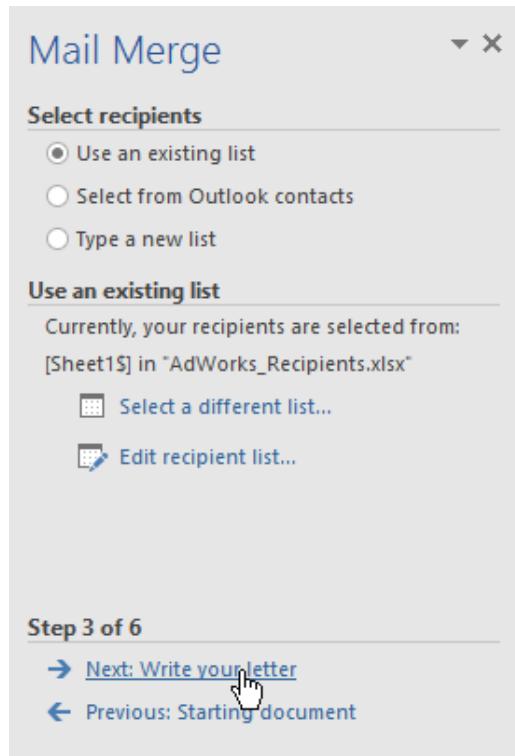
- If the address list is in an Excel workbook, select the worksheet that contains the list, then click OK.
- In the Mail Merge Recipients dialog box, you can check or uncheck each box to control which



recipients are included in the merge. By default, all recipients should be selected. When you're done, click OK.



- Click Next: Write your letter to move to Step 4.

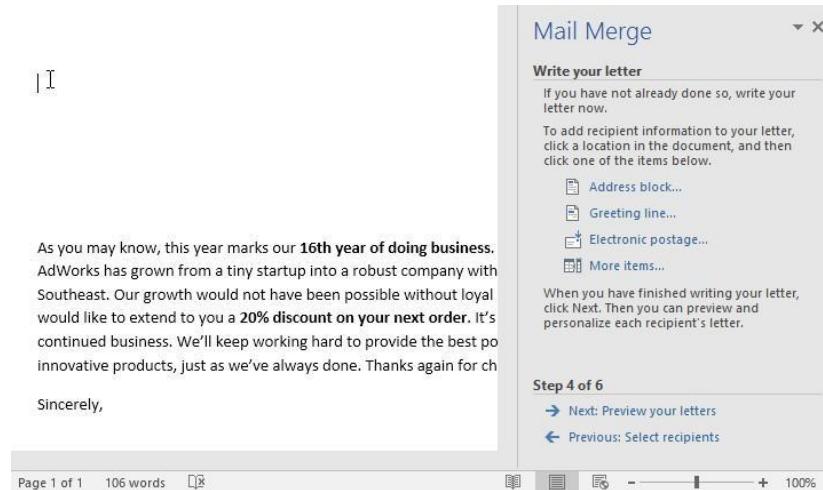


If you don't have an existing address list, you can click the Type a new list button and click Create, then type your address list manually.

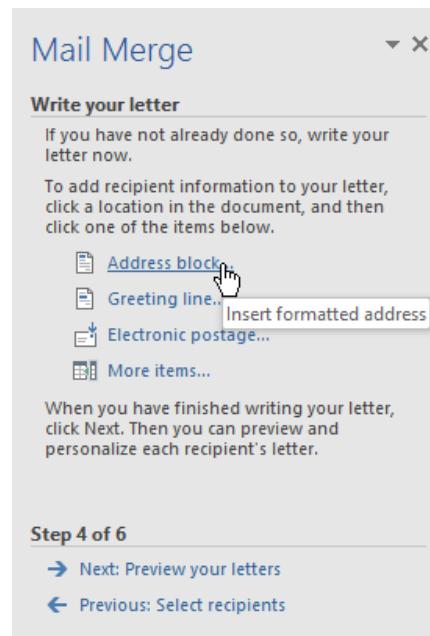
#### Step 4:

Now you're ready to write your letter. When it's printed, each copy of the letter will basically be the same; only the recipient data (such as the name and address) will be different. You'll need to add placeholders for the recipient data so Mail Merge knows exactly where to add the data.o insert recipient data:

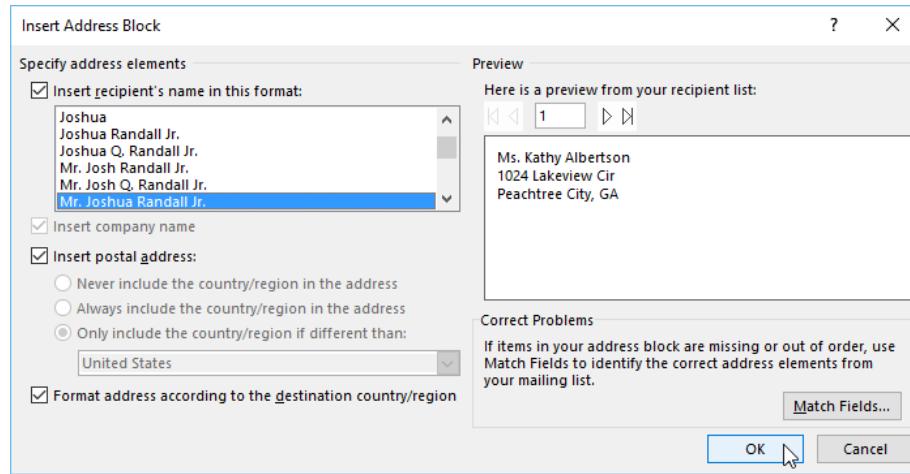
- Place the insertion point in the document where you want the information to appear.



- Choose one of the placeholder options. In our example, we'll select Address block.



- Depending on your selection, a dialog box may appear with various customization options. Select the desired options, then click OK.



- A placeholder will appear in your document (for example, «AddressBlock»).

**Step 4 of 6**

→ Next: Preview your letters  
← Previous: Select recipients

- Add any other placeholders you want. In our example, we'll add a Greeting line placeholder just above the body of the letter.

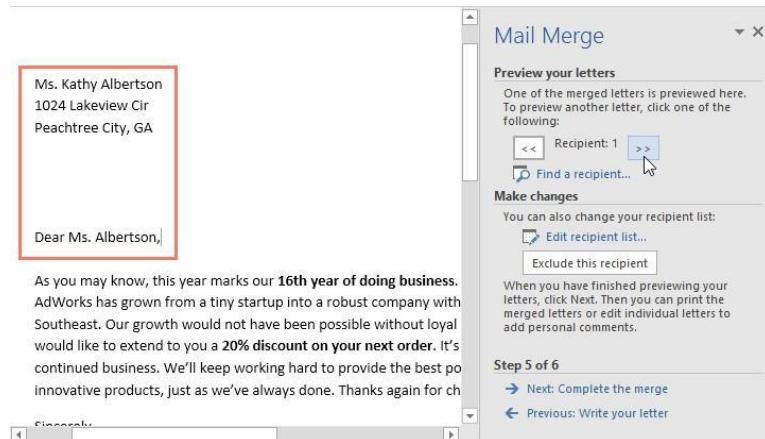
**Step 4 of 6**

→ Next: Preview your letters  
← Previous: Select recipients

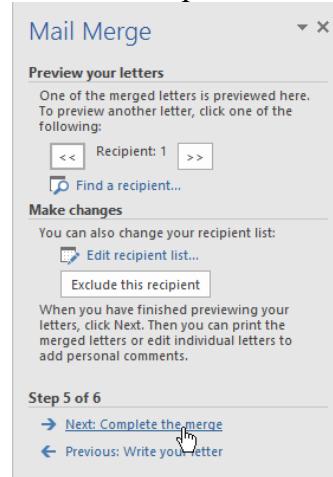
- When you're done, click Next: Preview your letters to move to Step 5.

**Step 5:**

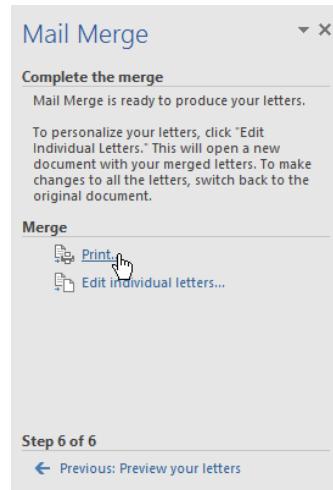
Preview the letters to make sure the information from the recipient list appears correctly in the letter. You can use the left and right scroll arrows to view each version of the document.



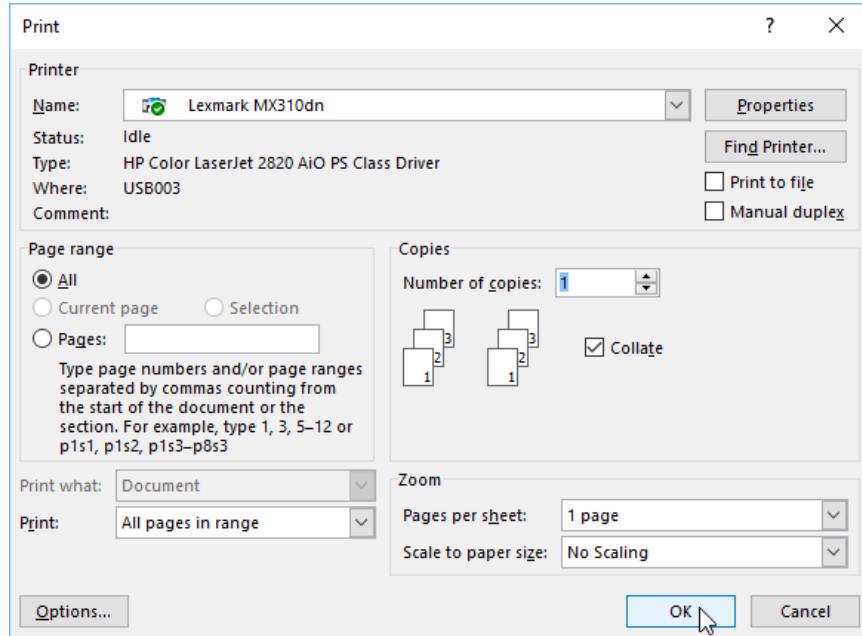
- If everything looks correct, click Next: Complete the merge to move to Step 6.

**Step 6:**

- Click Print to print the letters.
- A dialog box will appear. Decide if you want to print All of the letters, the current document (record),



or only a select group, then click OK. In our example, we'll print all of the letters.



- The Print dialog box will appear. Adjust the print settings if needed, then click OK. The letters will be printed.

## LAB ACTIVITY

### **Activity 1: Start a New Document & Save It**

- Open Microsoft Word.
- Start a "Blank Document".
- Click the Save button (or press "Ctrl + S").
- Name your file: "Book Sale Flyer" and save it to your computer.

### **Activity 2: Type the Basic Information**

- Type the following text, pressing "Enter" after each line:
- Community Book Sale!
- Saturday, November 18th
- 10:00 AM - 2:00 PM
- Main Street Community Center
- Hundreds of books! Fiction, Cookbooks, Children's, and more!
- All proceeds support the local library.

### **Activity 3: Make the Title Big and Bold**

- Click and drag your mouse over the words "Community Book Sale!" to highlight them.
- In the "Home" tab, do two things:
- Change the Font Size to "28".
- Click the Bold button (B).

### **Activity 4: Change the Fonts**

- Highlight the rest of the text you typed (from the date to the bottom).
- In the "Home" tab, click the Font menu and choose a new font, like Georgia or Arial.

## Activity 5: Center the Text

- Highlight **all** the text on your page.
- In the "Home" tab, click the Center alignment button (the one with the lines centered).

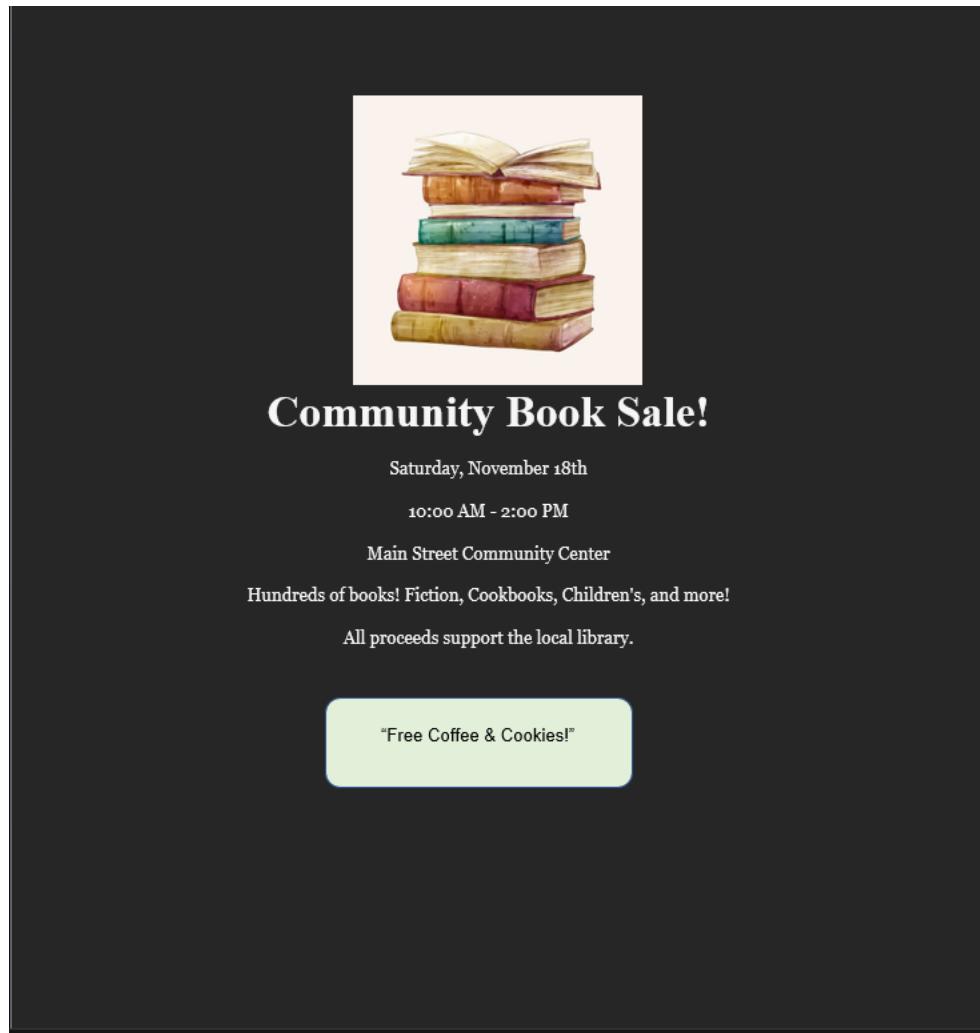
## Activity 6: Add a Picture

- Click your cursor at the very top of the page, before the title.
- Go to the "Insert" tab.
- Click "Pictures" and choose "This Device".
- Find a **picture** of a book on your computer (or use a free stock image) and insert it.
- Click on the picture. A new "Picture Format" tab will appear. Click the "Wrap Text" button and choose "Square". You can now drag the picture to move it easily.

## Activity 7: Add a Colorful Shape

- Go to the "Insert" tab.
- Click "Shapes" and pick a shape, like the Rounded Rectangle.
- Click and drag on the page under your text to draw the shape.
- With the shape selected, go to the "Shape Format" tab.
- Click "Shape Fill" and choose a light color, like light blue.
- Click inside the shape and type: "Free Coffee & Cookies!".

## Final Result:



# Lab 7,8

## INTRODUCTION TO MS EXCEL

### Objectives

In this lab, you will learn about **Microsoft Excel** and its basic functionalities, including navigation, cell operations, formatting, formulas, and data summarization.

### Tools/Software Required

- Microsoft Excel

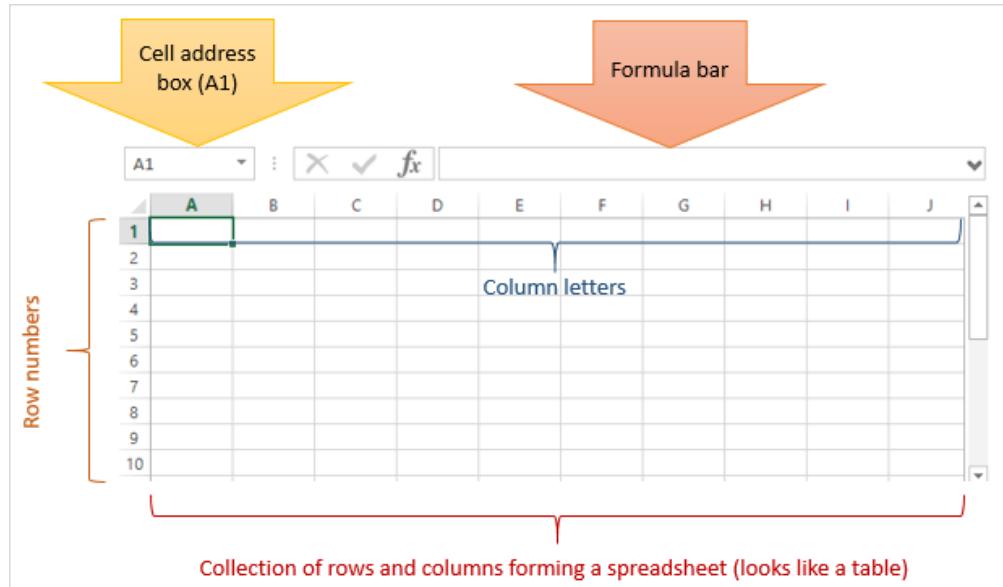
### What is Microsoft Excel?

Microsoft Excel is a **spreadsheet program** used to **record, analyze, and visualize data**. It offers features like **calculations, charts, pivot tables, and macros**.

- A spreadsheet is made of **rows** (numbers) and **columns** (letters).
- The intersection of a row and a column is a **cell** (e.g., A1, B4).

### Why Learn Excel?

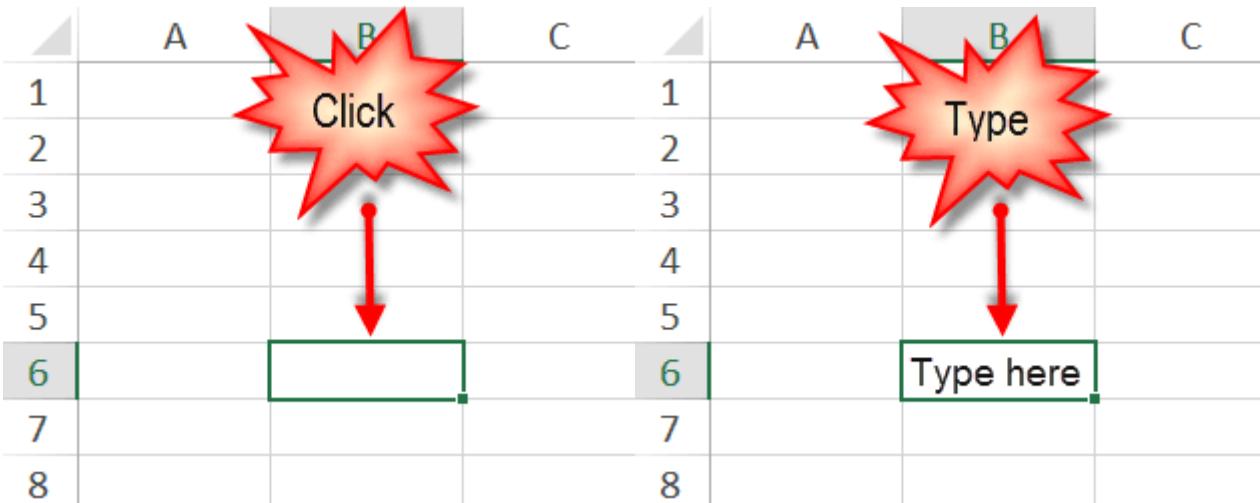
Excel is essential for managing numeric data such as **income vs. expenses**, business reports, or statistical analysis.



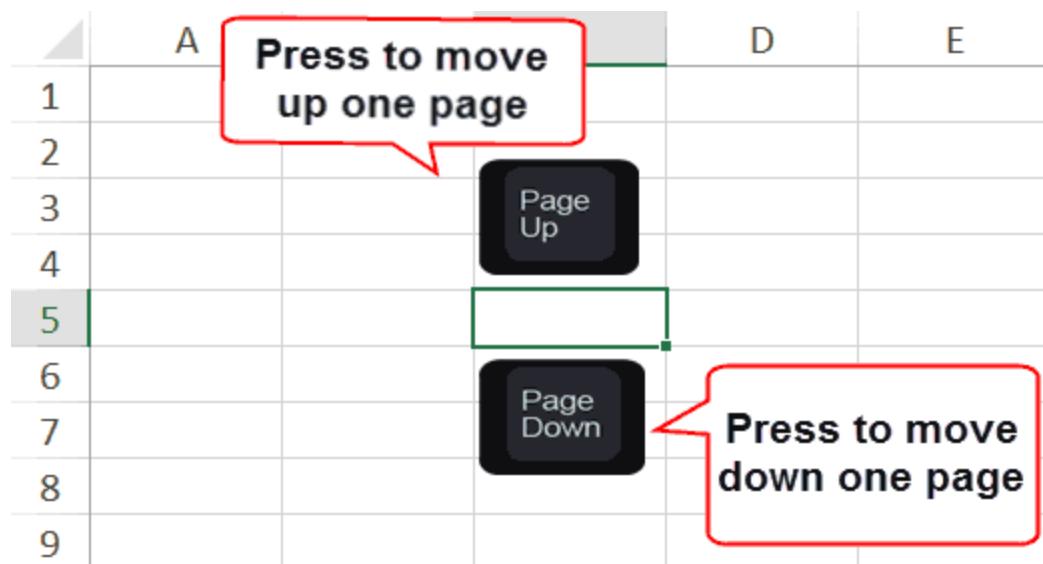
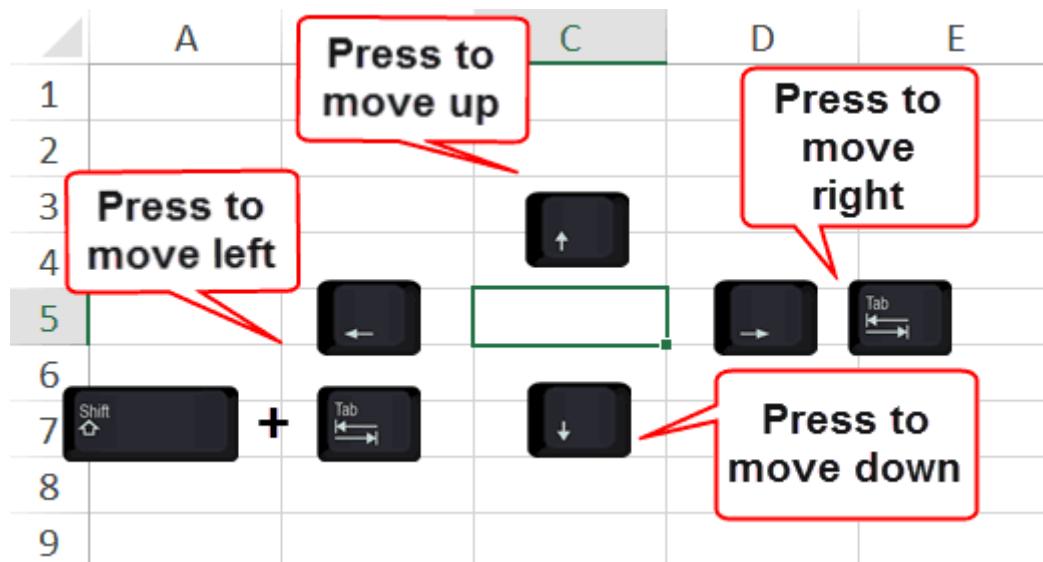
### Navigating an Excel Worksheet

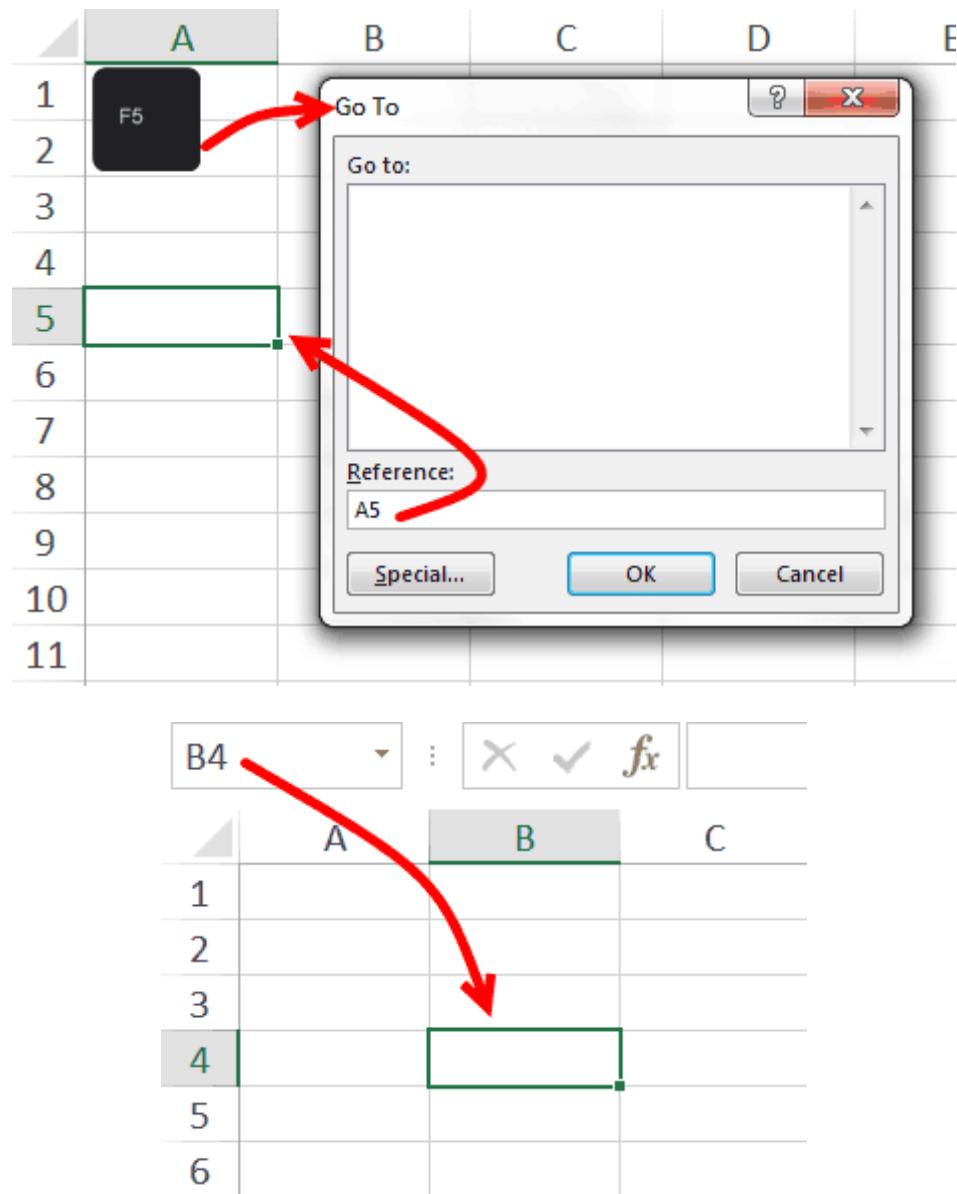
#### Move to a Specific Cell:

- Click the cell or type the cell address in the **Name Box** and press Enter.

**Arrow Keys:**

- Use arrow keys to move **one cell at a time**.
- Page Up / Page Down moves **one page at a time**.





### Go To (F5):

- Press F5, enter the cell reference, and click OK.

### Shortcut Keys:

Shortcut	Action
Ctrl + Home	Go to cell A1
Ctrl + End	Go to the farthest used cell
Home	Go to first cell in row
Ctrl + G	Opens Go To dialog

### Selecting Cells

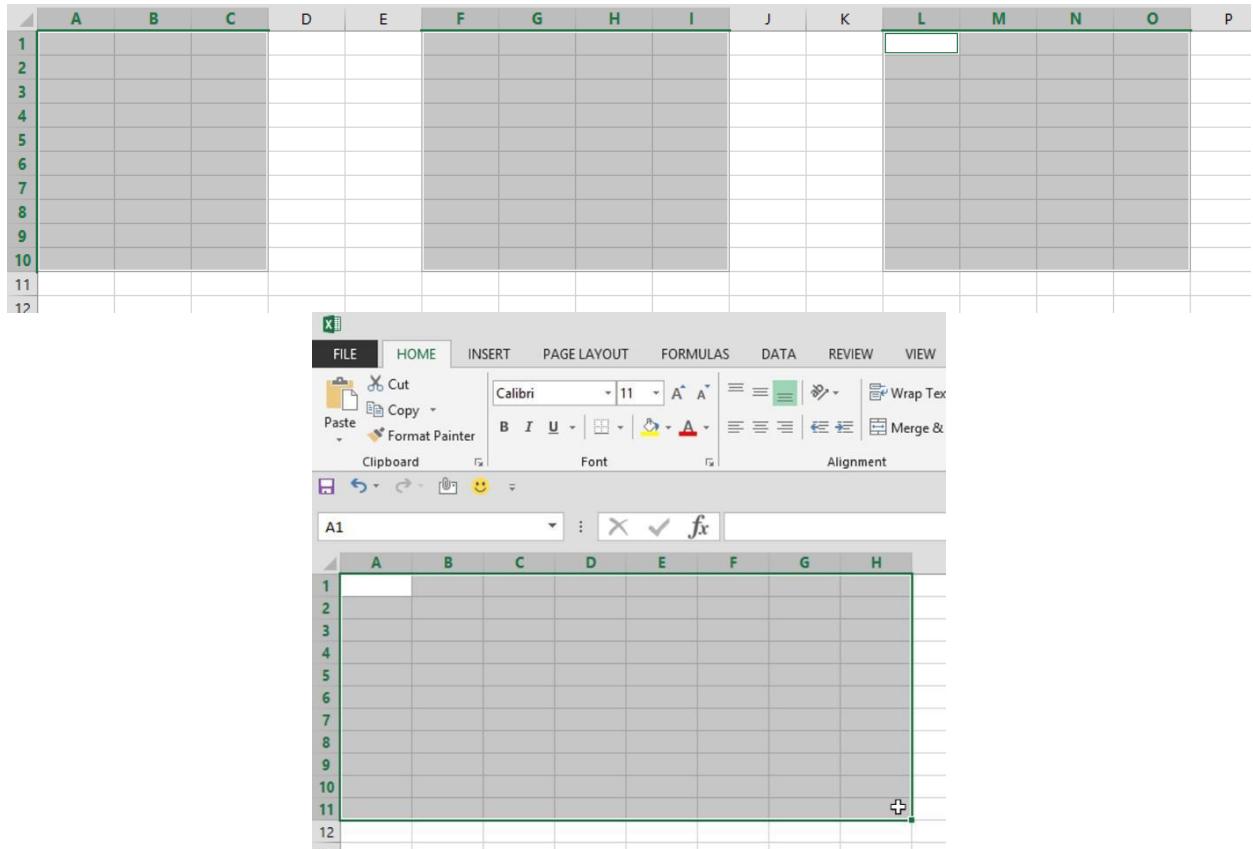
#### Using Mouse:

- Click a cell to select.

- Select multiple adjacent cells: click first → hold **Shift** → click last.
- Select multiple non-adjacent cells: hold **Ctrl** while selecting.

## Using Keyboard:

- Use **arrow keys** to select cells.
- **Ctrl + A** selects all data within boundaries.
- **Ctrl + Shift + Right/Down Arrow** selects row/column data.



## Resizing Columns and Rows

### Precise resizing:

1. Select cell/column/row.
2. Home → Format → Column Width / Row Height → Enter value.

**AutoFit:** Automatically adjusts based on content.

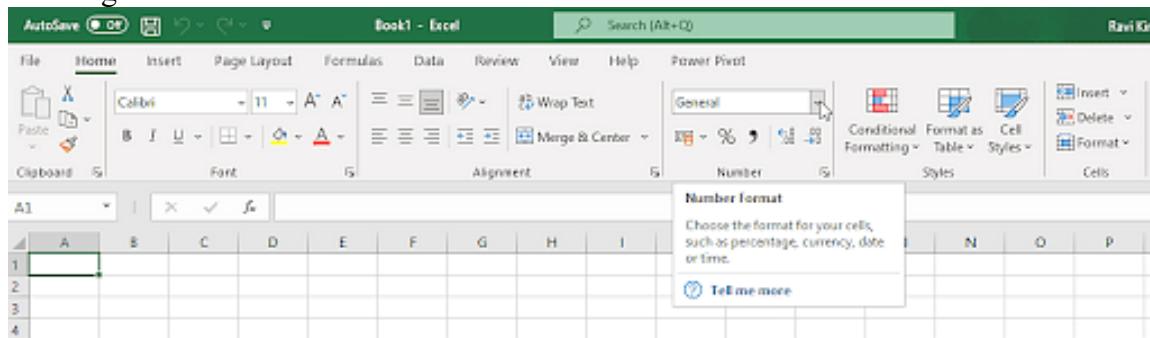
Small	Medium	Large	Supersized
0.01	Words	Joe Smith	You can add a lot of text here
0.61	Fit	Tonya Lewis	the column is supersized for
0.03	In	Ray Davis	all the text you want to add
0.04	This	Luke Anderson	and we did it without ever
0.99	Column	Mary Jones	dragging the column to resize.
0.38	Nicely	Sarah Parker	Here's how we did it.

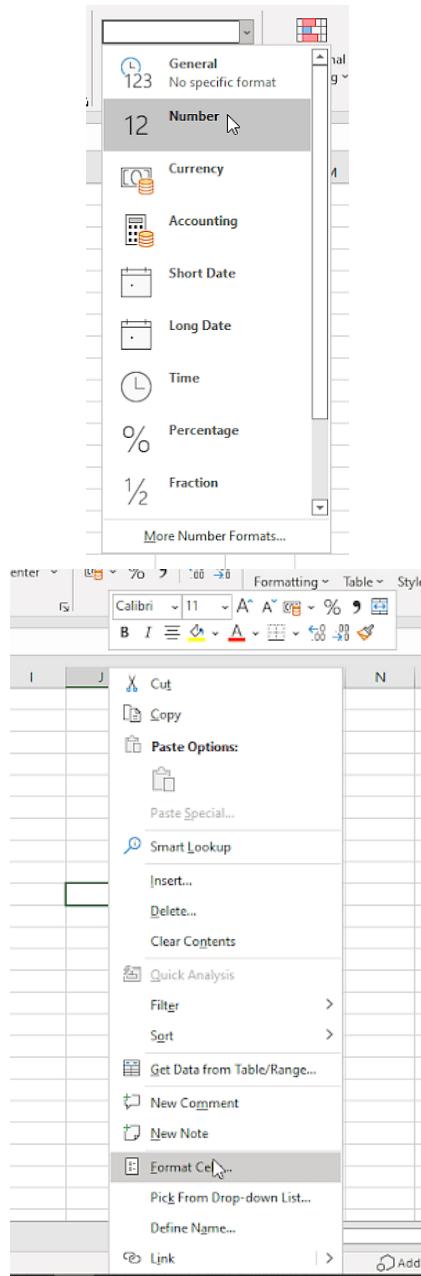
## Formatting in Excel

### Number Formatting

- **General:** Default, no modifications.
- **Number:** Adds decimals, optional separators.
- **Currency / Accounting:** Represents values in currency format.
- **Date / Time:** Converts numbers to calendar or clock format.
- **Percentage:** Converts decimal to %.
- **Fraction / Scientific / Text / Special / Custom:** Specialized formats for fractions, scientific notation, text, symbols, or custom settings.

### Cell Formatting





- **Font style, size, color, bold/italic/underline**
- **Text alignment, wrap text, indentation**
- **Cell background color and borders**

## Copy, Paste, and Delete

### Copy/Paste Options:

- **Clipboard group (Home tab)**
- **Right-click menu**
- **Drag & Drop (CTRL + drag)**

### Delete Text:

- **Manual:** Select → Backspace or Delete
- **Find & Replace:** Ctrl + H → Replace with blank
- **Mass Delete:** Select rows/columns → Delete

## Drag and Drop (Fill Handle)

- Copy values, series, or formatting using the small + icon at the bottom-right of a cell.
- Options after dragging: **Copy Cells, Fill Formatting Only, Fill Without Formatting.**

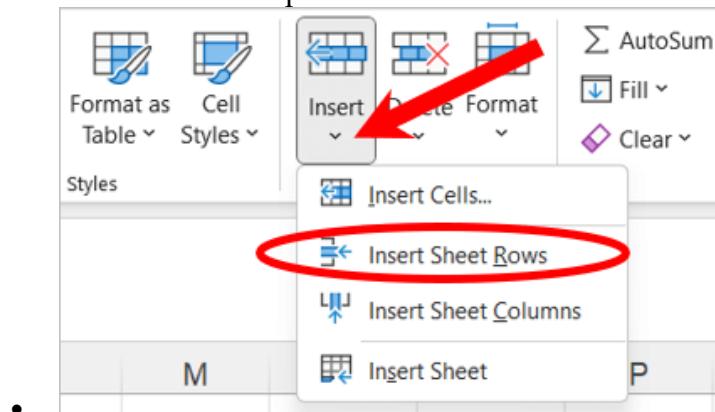
## Editing Cells

- **Enter Data:** Select → Type → Enter
- **Replace Data:** Select → Type new → Enter
- **Edit:** Select → Formula bar → Edit → Enter
- **Delete:** Select → Delete key

## Adding or Removing Rows and Columns

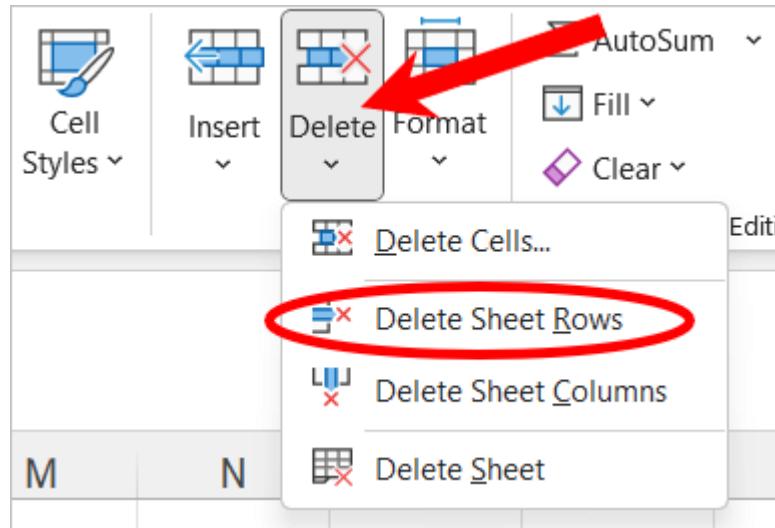
### Add Row/Column:

- Select cell → Home → Insert → Insert Sheet Row/Column
- Highlight multiple rows/columns to insert multiple at once



### Remove Row/Column:

- Select → Home → Delete → Delete Sheet Row/Column



## Excel Formulas

Formulas perform calculations and analysis on data.

### Example: BMI Calculation

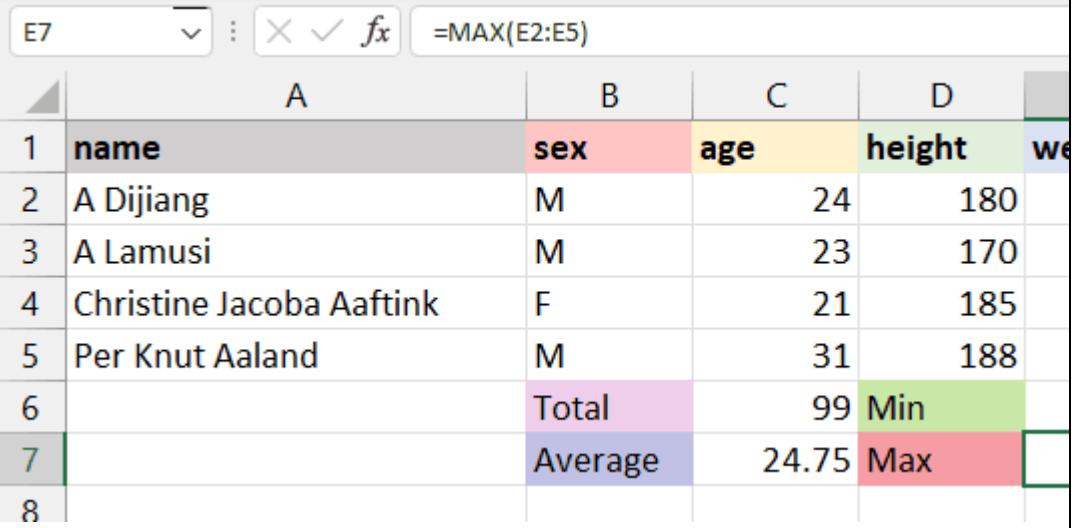
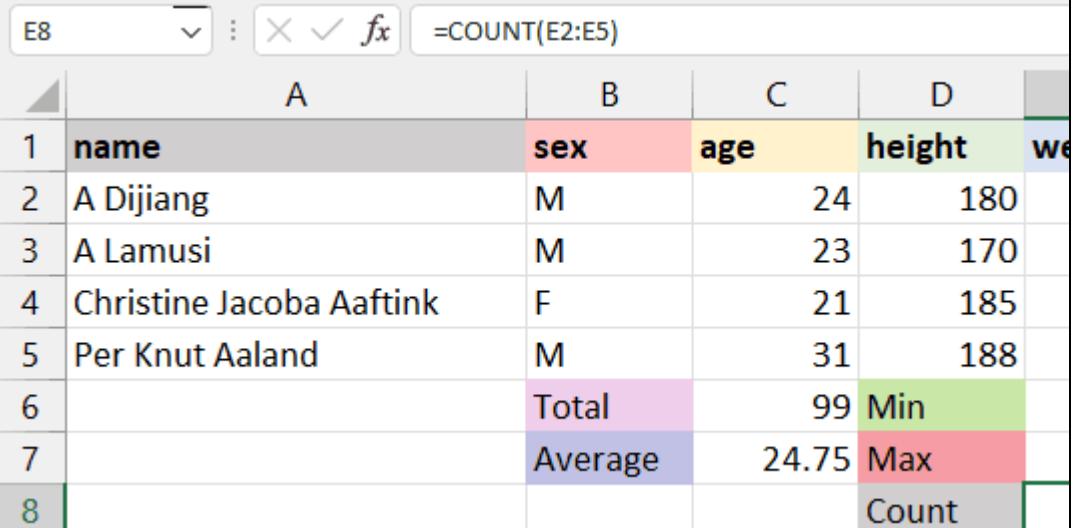
$$\text{BMI} = \text{Weight(kg)} / (\text{Height(m)}^2)$$

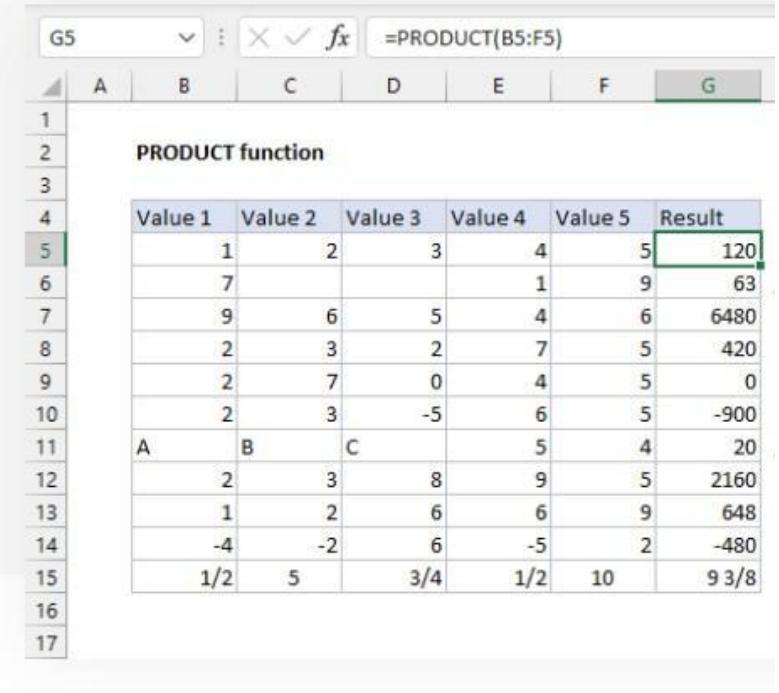
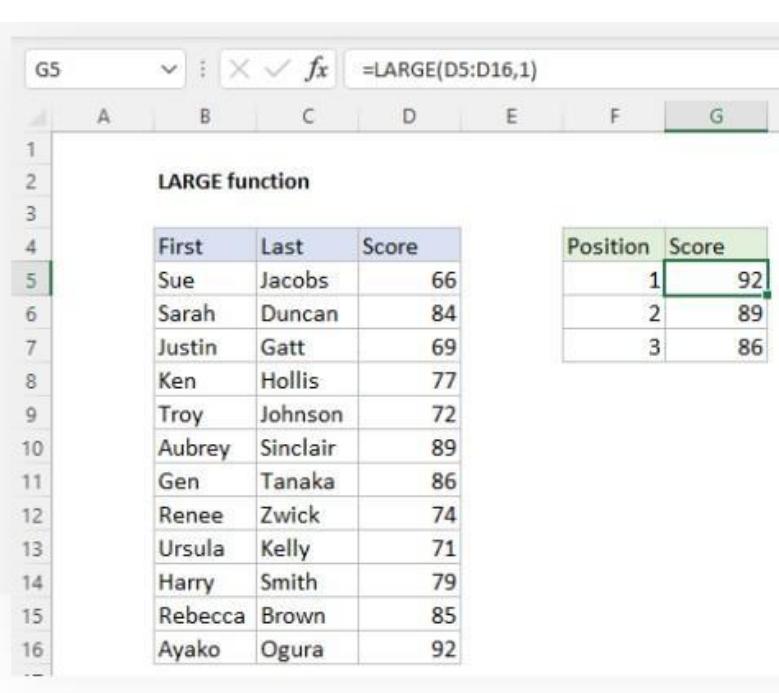
### Basic Formulas:

Formula	Description
SUM(range)	Total of numbers

The screenshot shows an Excel spreadsheet titled "03-sums-and-averages". The data is organized into a table with columns for Excursion (Beijing, Las Vegas, Mexico DF, Paris, Tokyo) and months (Jan, Feb, Mar). The total for January is calculated in cell B4 as =SUM(B4:B8). The formula is also displayed in the formula bar above the spreadsheet area. An orange callout bubble with the number 4 points to the cell containing the formula. Another orange callout bubble with the number 3 points to the range reference in the formula bar.

AVERAGE(range)	Average of numbers	
MIN(range)	Minimum value	

MAX(range)	Maximum value	
COUNT(range)	Count numeric cells	
COUNTA(range)	Count all non-empty cells	
COUNTBLANK(range)	Count empty cells	

PRODUCT(range)	Product of numbers	 <p><b>PRODUCT function</b></p> <table border="1"> <thead> <tr> <th>Value 1</th> <th>Value 2</th> <th>Value 3</th> <th>Value 4</th> <th>Value 5</th> <th>Result</th> </tr> </thead> <tbody> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>120</td></tr> <tr><td>7</td><td></td><td></td><td>1</td><td>9</td><td>63</td></tr> <tr><td>9</td><td>6</td><td>5</td><td>4</td><td>6</td><td>6480</td></tr> <tr><td>2</td><td>3</td><td>2</td><td>7</td><td>5</td><td>420</td></tr> <tr><td>2</td><td>7</td><td>0</td><td>4</td><td>5</td><td>0</td></tr> <tr><td>2</td><td>3</td><td>-5</td><td>6</td><td>5</td><td>-900</td></tr> <tr><td>A</td><td>B</td><td>C</td><td></td><td>5</td><td>4</td></tr> <tr><td>2</td><td>3</td><td>8</td><td>9</td><td>5</td><td>2160</td></tr> <tr><td>1</td><td>2</td><td>6</td><td>6</td><td>9</td><td>648</td></tr> <tr><td>-4</td><td>-2</td><td>6</td><td>-5</td><td>2</td><td>-480</td></tr> <tr><td>1/2</td><td>5</td><td>3/4</td><td>1/2</td><td>10</td><td>9 3/8</td></tr> </tbody> </table>	Value 1	Value 2	Value 3	Value 4	Value 5	Result	1	2	3	4	5	120	7			1	9	63	9	6	5	4	6	6480	2	3	2	7	5	420	2	7	0	4	5	0	2	3	-5	6	5	-900	A	B	C		5	4	2	3	8	9	5	2160	1	2	6	6	9	648	-4	-2	6	-5	2	-480	1/2	5	3/4	1/2	10	9 3/8
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LARGE(range, n)	nth largest value	 <p><b>LARGE function</b></p> <table border="1"> <thead> <tr> <th>First</th> <th>Last</th> <th>Score</th> </tr> </thead> <tbody> <tr><td>Sue</td><td>Jacobs</td><td>66</td></tr> <tr><td>Sarah</td><td>Duncan</td><td>84</td></tr> <tr><td>Justin</td><td>Gatt</td><td>69</td></tr> <tr><td>Ken</td><td>Hollis</td><td>77</td></tr> <tr><td>Troy</td><td>Johnson</td><td>72</td></tr> <tr><td>Aubrey</td><td>Sinclair</td><td>89</td></tr> <tr><td>Gen</td><td>Tanaka</td><td>86</td></tr> <tr><td>Renee</td><td>Zwick</td><td>74</td></tr> <tr><td>Ursula</td><td>Kelly</td><td>71</td></tr> <tr><td>Harry</td><td>Smith</td><td>79</td></tr> <tr><td>Rebecca</td><td>Brown</td><td>85</td></tr> <tr><td>Ayako</td><td>Ogura</td><td>92</td></tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Position</th> <th>Score</th> </tr> </thead> <tbody> <tr><td>1</td><td>92</td></tr> <tr><td>2</td><td>89</td></tr> <tr><td>3</td><td>86</td></tr> </tbody> </table>	First	Last	Score	Sue	Jacobs	66	Sarah	Duncan	84	Justin	Gatt	69	Ken	Hollis	77	Troy	Johnson	72	Aubrey	Sinclair	89	Gen	Tanaka	86	Renee	Zwick	74	Ursula	Kelly	71	Harry	Smith	79	Rebecca	Brown	85	Ayako	Ogura	92	Position	Score	1	92	2	89	3	86																									
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SMALL(range, n)	nth smallest value	<p>The screenshot shows a Microsoft Excel interface. In the formula bar at the top, the formula =SMALL(D5:D16,1) is entered. Below the formula bar is a toolbar with icons for copy, paste, and other functions. The main area shows a table with columns labeled 'First' and 'Last' and a 'Score' column. The first few rows of the table are: Sue Jacobs (Score 66), Sarah Duncan (Score 84), Justin Gatt (Score 69), Ken Hollis (Score 77), Troy Johnson (Score 72), Aubrey Sinclair (Score 89), Gen Tanaka (Score 86), Renee Zwick (Score 74), Ursula Kelly (Score 71), Harry Smith (Score 79), Rebecca Brown (Score 85), and Ayako Ogura (Score 92). To the right of the table, there is a smaller inset table titled 'Position Score' with three rows: Position 1 (Score 66), Position 2 (Score 69), and Position 3 (Score 71). The cell containing '66' is highlighted with a green border.</p>
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## Conditional Formulas

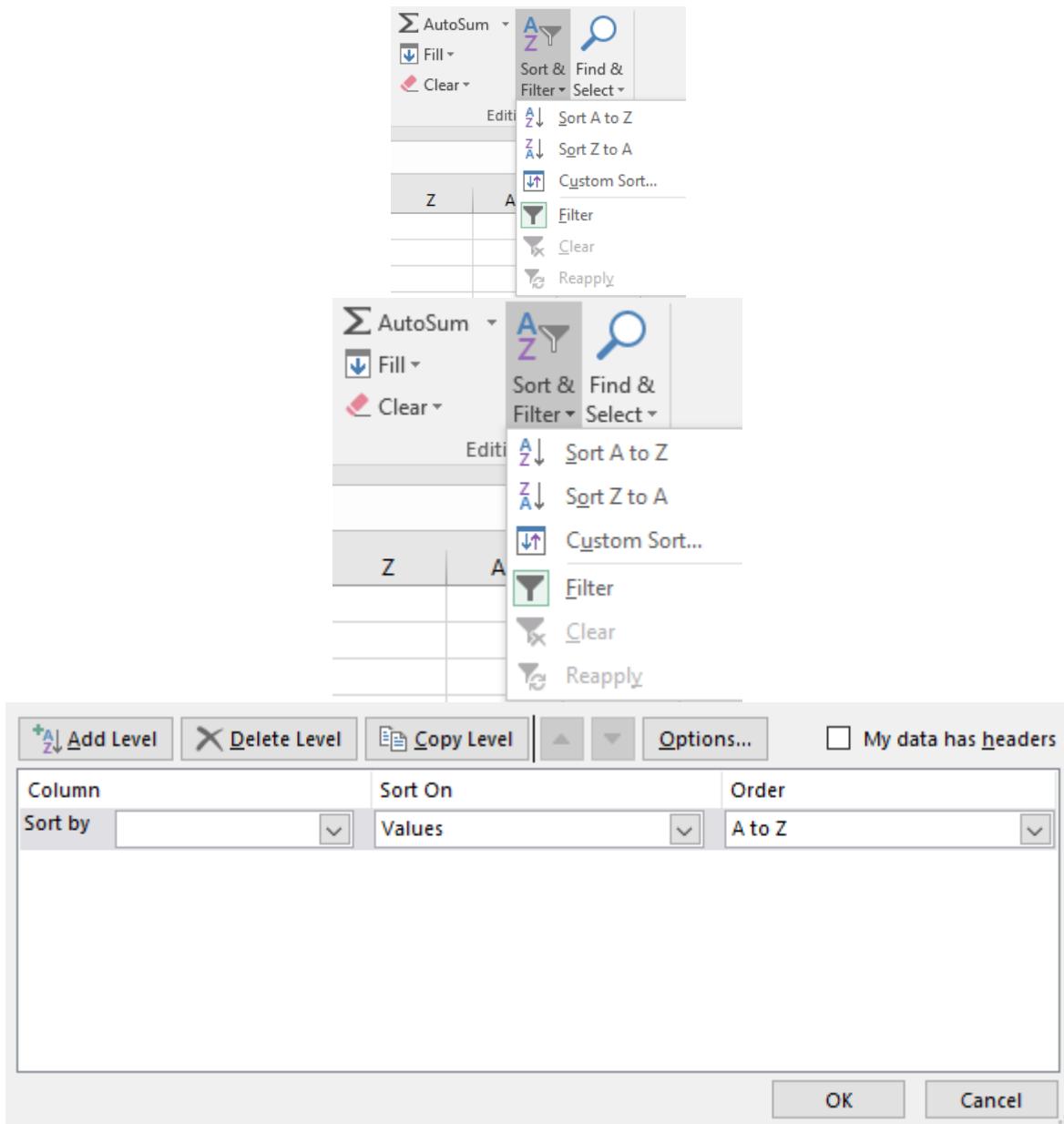
Formula	Description
SUMIF(range, criteria, [sum range])	Sum with a condition
COUNTIF(range, criteria)	Count with a condition
AVERAGEIF(range, criteria, [average range])	Average with a condition
IF(logical test, value if true, value if false)	Conditional logic

## Lookup Functions

Formula	Description
VLOOKUP(lookup_value, table_array, col_index, [range_lookup])	Vertical lookup
HLOOKUP(lookup_value, table_array, row_index, [range_lookup])	Horizontal lookup

## Sorting and Filtering

- **Filter:** Home → Sort & Filter → Filter
- **Sort:** Sort A-Z, Z-A, or Custom
- **Clear Filter:** Filter icon → Clear Filter



## Grouping and Subtotals

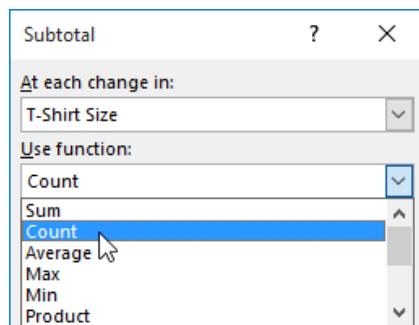
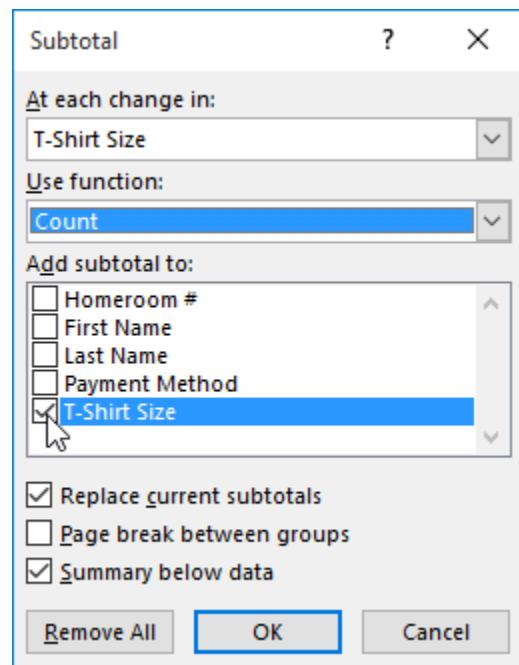
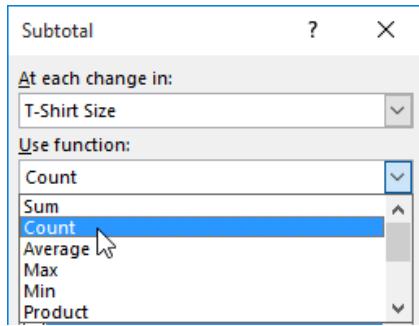
- **Group Rows/Columns:** Data → Group
- **Subtotals:** Data → Subtotal → Choose column, function, and summary column
- **View Levels:** Use outline buttons to show/hide details
- **Remove Subtotals:** Data → Subtotal → Remove All

	A	B	C	D	E
1	<b>Homeroom #</b>	<b>First Name</b>	<b>Last Name</b>	<b>Payment Method</b>	<b>T-Shirt Size</b>
2	105	Melissa	White	Debit Card	Small
3	105	Esther	Yaron	Pending	Small
4	135	Anisa	Naser	Check Bounced	Small
5	220-A	Brigid	Ellison	Cash	Small
6	220-A	Christopher	Peyton-Gomez	Check	Small
7	220-B	Michael	Lazar	Cash	Small
8	220-B	Malik	Reynolds	Cash	Small
9	220-B	Wendy	Shaw	Cash	Small
10	105	Nathan	Albee	Check	Medium

The screenshot shows a Microsoft Excel spreadsheet with data in columns A through E. The first row contains column headers: Homeroom #, First Name, Last Name, Payment Method, and T-Shirt Size. Rows 2 through 10 contain student information. The 'T-Shirt Size' column has 'Small' in rows 2-8 and 'Medium' in rows 9-10. The 'Outline' ribbon tab is selected, showing the Group, Ungroup, Subtotal, and Outline buttons. The 'Subtotal' button is highlighted.

	A	B	C	D	E
1	<b>Homeroom #</b>	<b>First Name</b>	<b>Last Name</b>	<b>Payment Method</b>	<b>T-Shirt Size</b>
2	105	Melissa	White	Debit Card	Small
3	105	Esther	Yaron	Pending	Small
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6	220-A	Christopher	Peyton-Gomez	Check	Small
7	220-B	Michael	Lazar	Cash	Small
8	220-B	Malik	Reynolds	Cash	Small
9	220-B	Wendy	Shaw	Cash	Small
10	105	Nathan	Albee	Check	Medium
11	105	Christiana	Chen	Check Bounced	Medium
12	105	Sidney	Kelly	Check	Medium
13	110	Matt	Benson	Money Order	Medium
14	110	Gabriel	Del Toro	Cash	Medium

The screenshot shows the same Microsoft Excel spreadsheet and ribbon interface as the top image, but the 'Subtotal' button in the Outline tab is now highlighted.



	A	B	C	D	E
1	Homeroom #	First Name	Last Name	Payment Method	T-Shirt Size
2	105	Melissa	White	Debit Card	Small
3	105	Esther	Yaron	Pending	Small
4	135	Anisa	Naser	Check Bounced	Small
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8	220-B	Malik	Reynolds	Cash	Small
9	220-B	Wendy	Shaw	Cash	Small
10				<b>Small Count</b>	8
11	105	Nathan	Albee	Check	Medium
12	105	Christiana	Chen	Check Bounced	Medium
13	105	Sidney	Kelly	Check	Medium
14	110	Matt	Benson	Money Order	Medium
15	110	Gabriel	Del Toro	Cash	Medium
16	135	James	Panarello	Check	Medium
17	135	Chantal	Weller	Debit Card	Medium
18	220-A	Chevonne	Means	Money Order	Medium
19	220-B	Samantha	Bell	Check	Medium
20	220-B	Avery	Kelly	Debit Card	Medium
21				<b>Medium Count</b>	10

## PivotTables

- Summarize large datasets automatically.
- Insert → PivotTable → Select data → Choose location → Drag fields to **Rows, Columns, Values**
- **Advanced:** Add Measures using DAX for concatenation or custom calculations.

## Calculate Payment on Personal Loan PMT

With the PMT function, you can return a payment amount, based on loan information. In this example:

- Amount of loan is \$10,000

- The annual interest rate is 5%
- The loan is for a 4 year term, with 48 monthly payments

In cell C6, the Excel PMT formula calculates the monthly payment, based on the annual rate, which is divided by 12 to get the monthly rate, the number of payments (periods) and the loan amount (present value):

**=PMT(C2/12,C3,C4)**

C6	A	B	C	D	E
1					
2		Annual Rate	5%		
3		Number of Payments	48		
4		Loan Amount	10,000.00		
5					
6		Monthly Payment	(\$230.29)		
7					

With the above formula, the monthly loan payment, -230.29, is calculated as a negative value, because you are paying that amount out of your bank account.

If you would prefer to see the result as a positive value, you can use a minus sign before the PMT function:

**=-PMT(C2/12,C3,C4)**

## Lab ACTIVITY

- Create a simple sales report that calculates totals and commissions.

### Data Setup

Enter this format data in Sheet1:

1	Sales Person	Sales Amount	Commission
2	John	5000	

### Task 1: Calculate Commissions

Calculate commission for each sales person using these rules:

- Sales less than 10000: 5% commission
- Sales 10000 or more: 8% commission

## **Task 2: Calculate Summary Statistics**

Create a summary section starting at cell E1:

- In cell F3 (Total Commission)

- In cell F4 (Average Sales)

- In cell F5 (Highest Sale)

## **Task 3: Count Sales People by Performance**

In cell F7 (High Performers - sales  $\geq$  10000)

In cell F8 (Low Performers - sales  $<$  10000)

## **Formatting Requirements**

1. Format sales and commission amounts as Currency.
2. Make all headers bold.
3. Add borders around your data table.
4. Apply different colors to high and low performers in the sales amount column.

## Final Result:

Sales person	Sales amount	Commision	Total Commission	Rs 7,230.0
Aiman	Rs 10,000	Rs 800	Average Sales	Rs 16,000.0
Rehan	Rs 15,000	Rs 1,200	Highest Sale	Rs 36,000.0
Ali	Rs 36,000	Rs 2,880	Highest Performers	3
Sarah	Rs 6,000	Rs 300	Low performers	2
Neha	Rs 9,000	Rs 450		
Manahil	Rs 20,000	Rs 1,600		

# Lab 9

## INTRODUCTION TO MS ACCESS

### Objectives

By the end of this lab, you will be able to:

- Understand the concept of a database and why it is used
- Create tables in Microsoft Access
- Define primary keys and set field properties
- Understand indexing and data integrity
- Establish relationships between tables and enforce referential integrity

### Tools/Software Required

- Microsoft Access (2016, 2019, or Microsoft 365 recommended)

### Description

What is a Database?

A database is a structured collection of data stored in a computer system. It allows users to enter, access, and analyze data efficiently. Unlike Excel, which is primarily used for numerical data, databases like Microsoft Access can handle large amounts of both numerical and non-numerical data.

A relational database can understand relationships between different tables or “lists,” ensuring data consistency and minimizing redundancy.

### Introduction to Microsoft Access

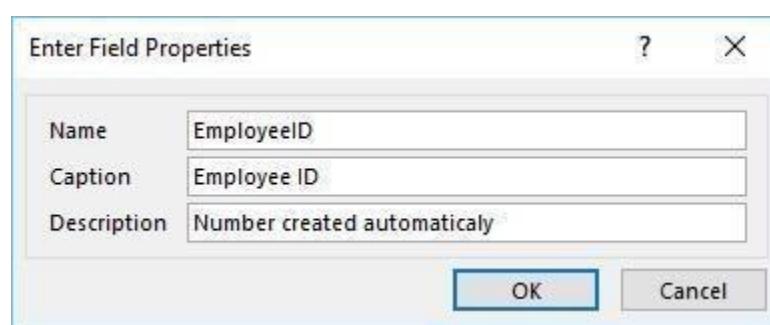
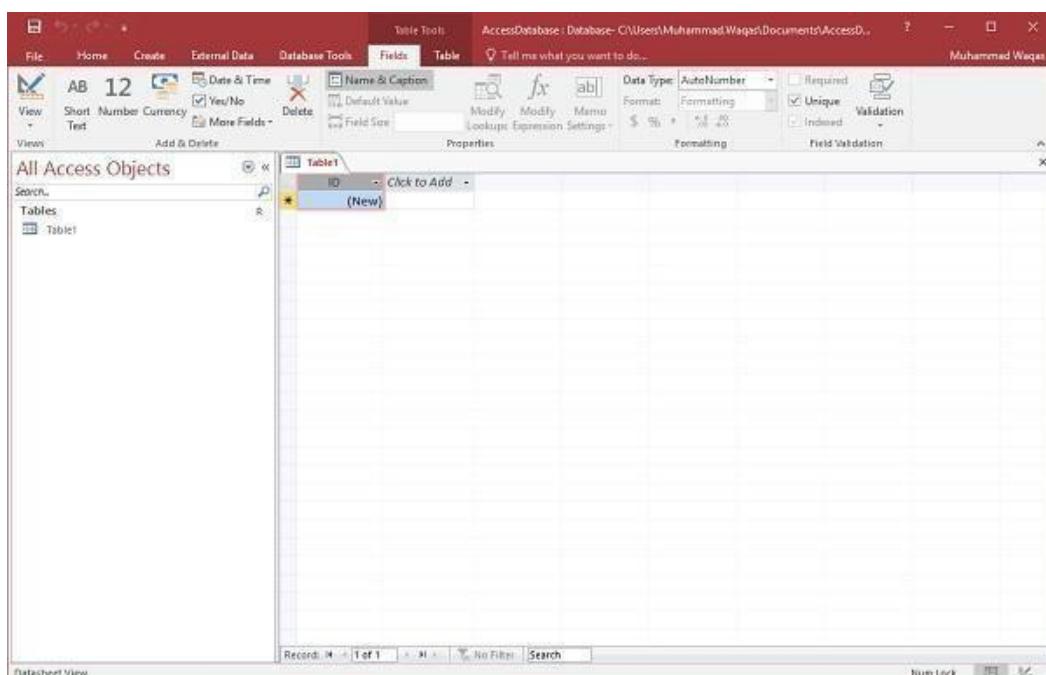
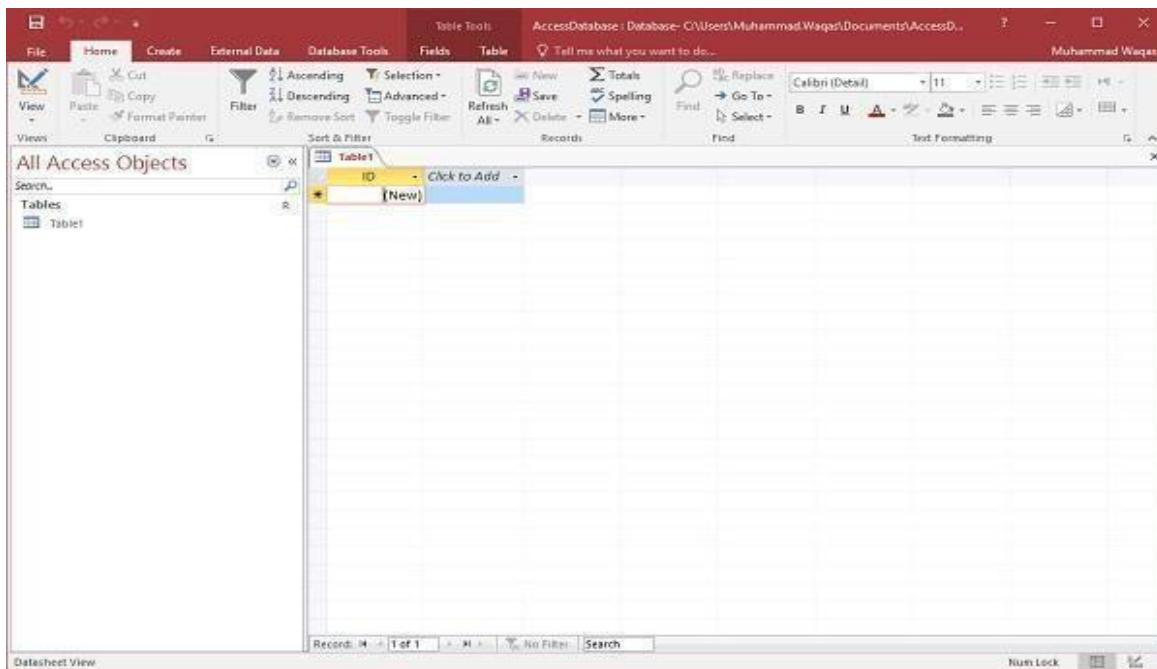
Microsoft Access is a relational database management system (RDBMS) that combines:

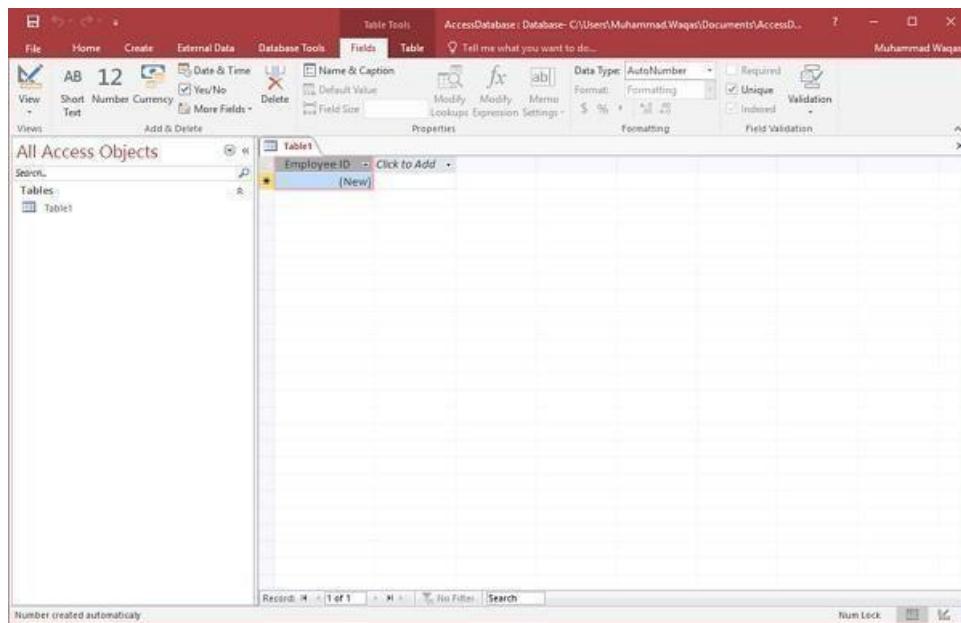
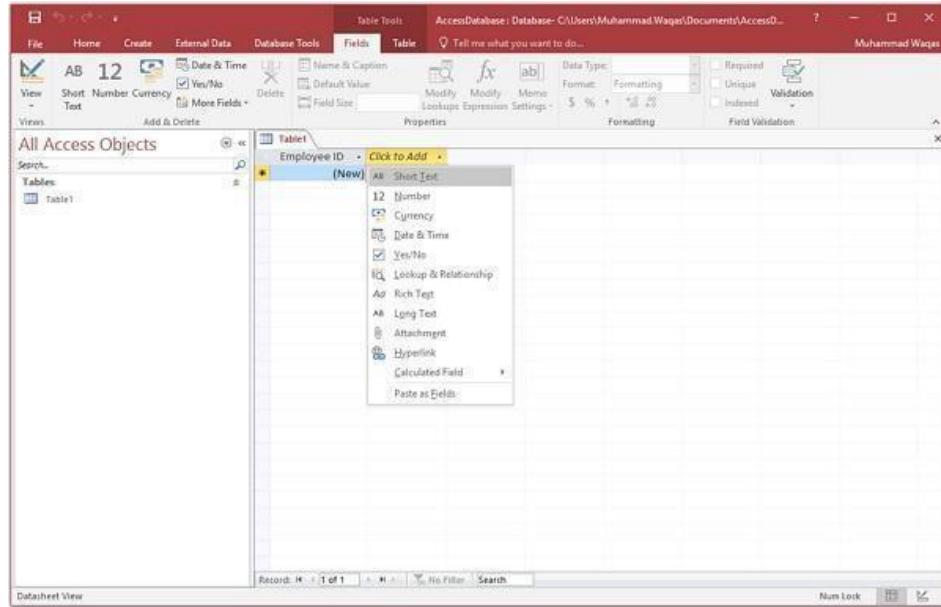
- The **Access Database Engine** for data storage
- A **graphical user interface (GUI)** for easy database design
- **Software-development tools** for building applications

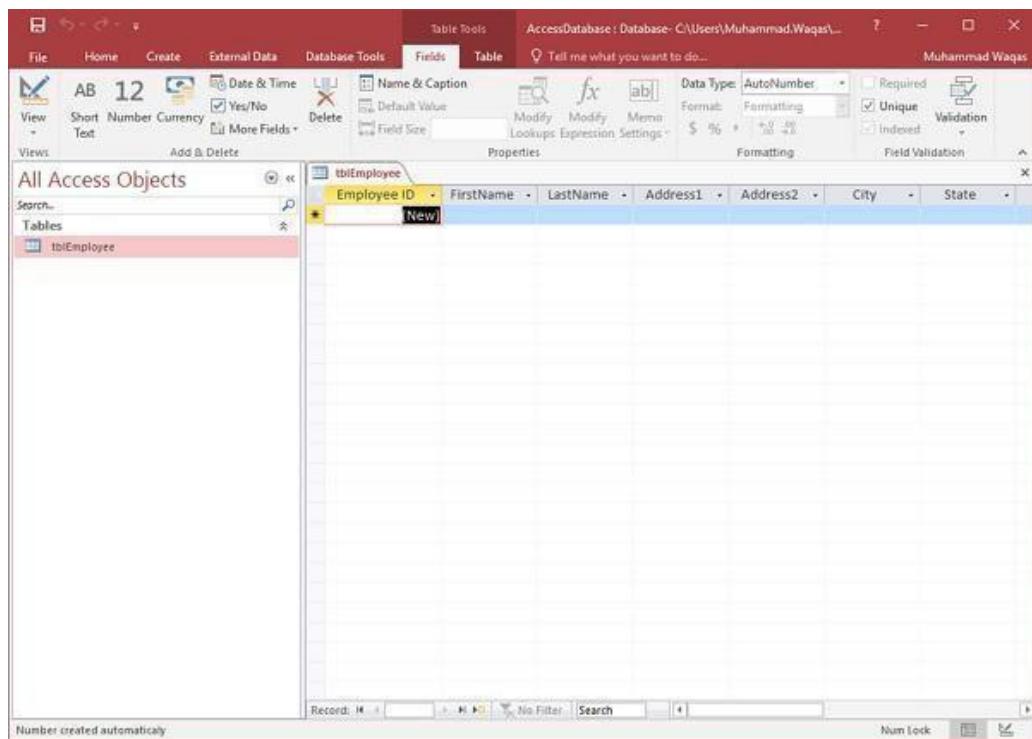
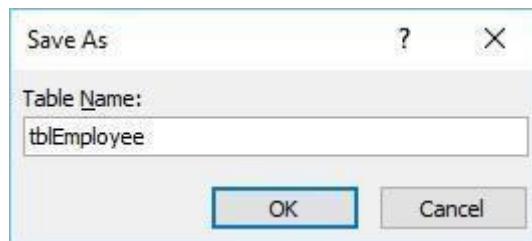
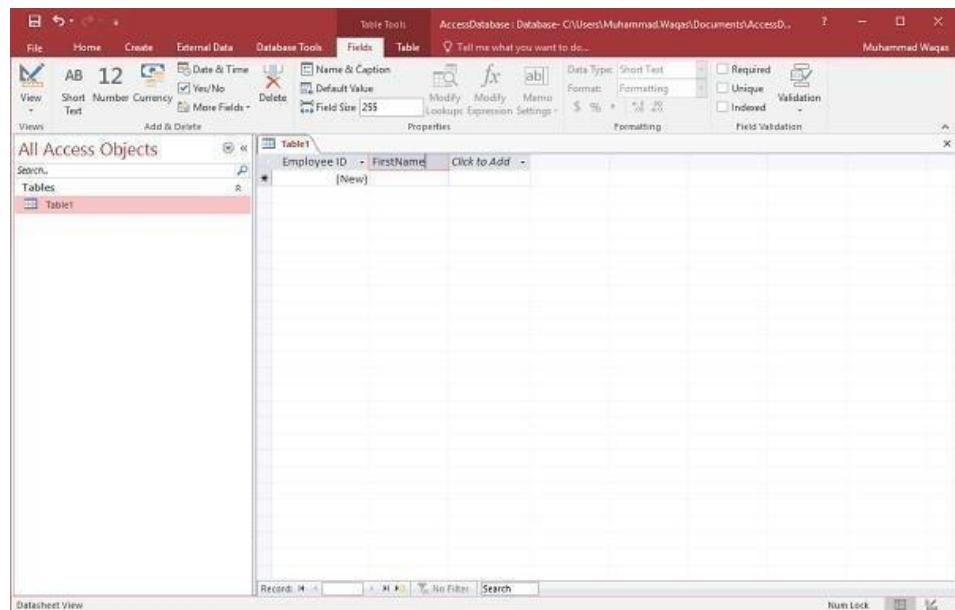
### Creating Tables in MS Access

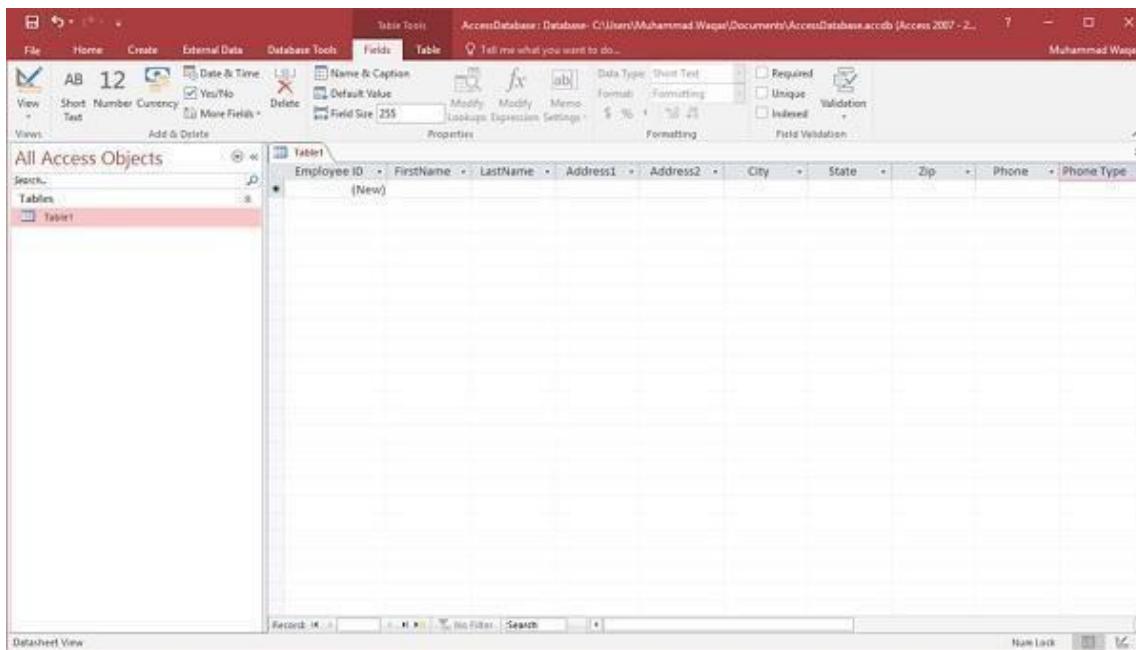
#### 1. Using Datasheet View

1. Open Access → File → New → Blank Database → Name: EmployeeManagement.accdb → Create
2. Access automatically creates a table with an **ID field (AutoNumber)** as the **primary key**.
3. Rename the ID field to EmployeeID via **Name & Caption**.
4. Add additional fields using **Click to Add** → choose **Short Text** → enter field names like FirstName, LastName, etc.
5. Save the table with a meaningful name, e.g., tblEmployees.



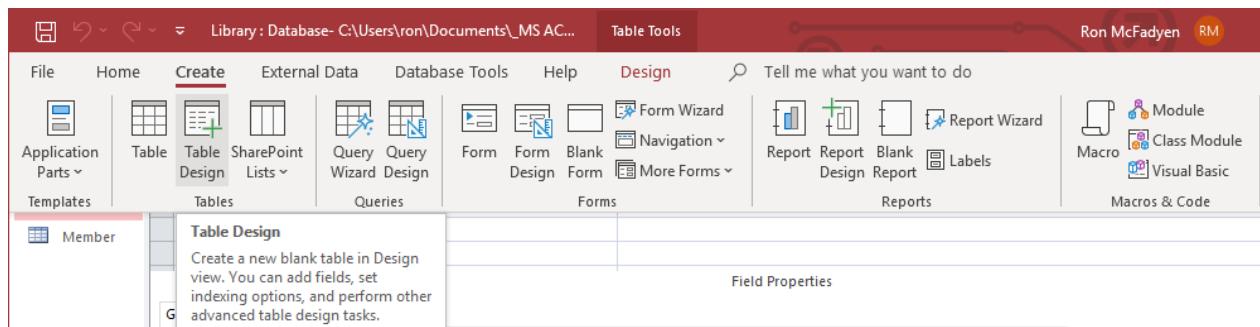






## 2. Using Design View

1. Click **Create → Table Design**.
2. Enter field definitions: **Field Name**, **Data Type**, and optional **Description**.
3. Set a **Primary Key** by selecting the desired field (e.g., DeptCode) → click the key icon.
4. Save the table (e.g., tblDepartment).



Field Name	Data Type	Description (Optional)

The screenshot shows the Microsoft Access application interface. The ribbon at the top has tabs for File, Home, Create, External Data, Database Tools, Help, and Table Tools (which is selected). Below the ribbon is a menu bar with File, Home, Create, External Data, Database Tools, Help, and a search bar that says "Tell me what you want to do". A toolbar with various icons is also visible. The main area shows a table named "Table1" in Design View. The table has five columns: "Field Name", "Data Type", and "Description (Optional)". The rows contain the following data:

Field Name	Data Type	Description (Optional)
deptCode	Short Text	department code
deptName	Short Text	department name
deptLocn	Short Text	department location
deptPhone	Short Text	department phone
chairName	Short Text	person's name who is chair of the department

## Data Types in MS Access

Data Type	Description	Notes
Short Text	Up to 255 characters	Used for names, codes, descriptions
Long Text	Up to 63,999 characters	Used for long descriptions
Number	Numeric values for calculations	4 bytes, range -2,147,483,648 to 2,147,483,647
Large Number	Numeric values for huge numbers	8 bytes
Date/Time	Stores dates and times	Format property controls display
Currency	Monetary values	Accurate to 15 digits left & 4 right of decimal
AutoNumber	Generates unique numbers automatically	Sequential or random
Yes/No	Boolean values	Stores Yes/No or True/False
Calculated	Derived values using functions	Computed automatically
Lookup Wizard	Restrict field values to a list	Useful for predefined options like Gender

## Field Properties

- **Field Size:** Limits text length or numeric range
- **Format:** Controls display (e.g., dates, capitalization)
- **Input Mask:** Forces data entry pattern (e.g., phone numbers)
- **Caption:** Display name for fields in forms/reports
- **Default Value:** Pre-fills common values
- **Validation Rule & Text:** Restricts invalid input with custom message
- **Required:** Ensures the field is not left blank
- **Indexed:** Improves search speed; prevents duplicates if needed
- **Show Date Picker:** Allows calendar selection for Date/Time fields
- **New Values:** For AutoNumber fields, sequential or random

## Primary Key

- A primary key uniquely identifies each row in a table.
- Can be an AutoNumber, text, or other unique identifier.
- Set in **Design View** → select field → click **Primary Key** icon.

The screenshot shows the Microsoft Access ribbon with the 'Tools' tab selected. The 'Tools' tab has several icons: Primary Key, Builder, Test Validation Rules, Insert Rows, Delete Rows, Modify Lookups, Property Sheet, Index, Show/Hide, and Tools.

**Customer Table Fields:**

Field Name	Data Type
CustomerID	AutoNumber
CustomerName	Text
Address1	Text
Address2	Text
Address3	Text
Address4	Text

**Customer Table Fields (with Primary Key highlighted):**

Field Name	Data Type
CustomerID	AutoNumber
Primary Key	Text
Cut	Text
Copy	Text

## Creating Relationships Between Tables

### Rules for Linking Tables

- Linked fields must be of the same data type and contain compatible data
- Primary key in one table is linked to a foreign key in another
- AutoNumber primary key fields must link to Long Integer fields

### Steps to Create Relationships

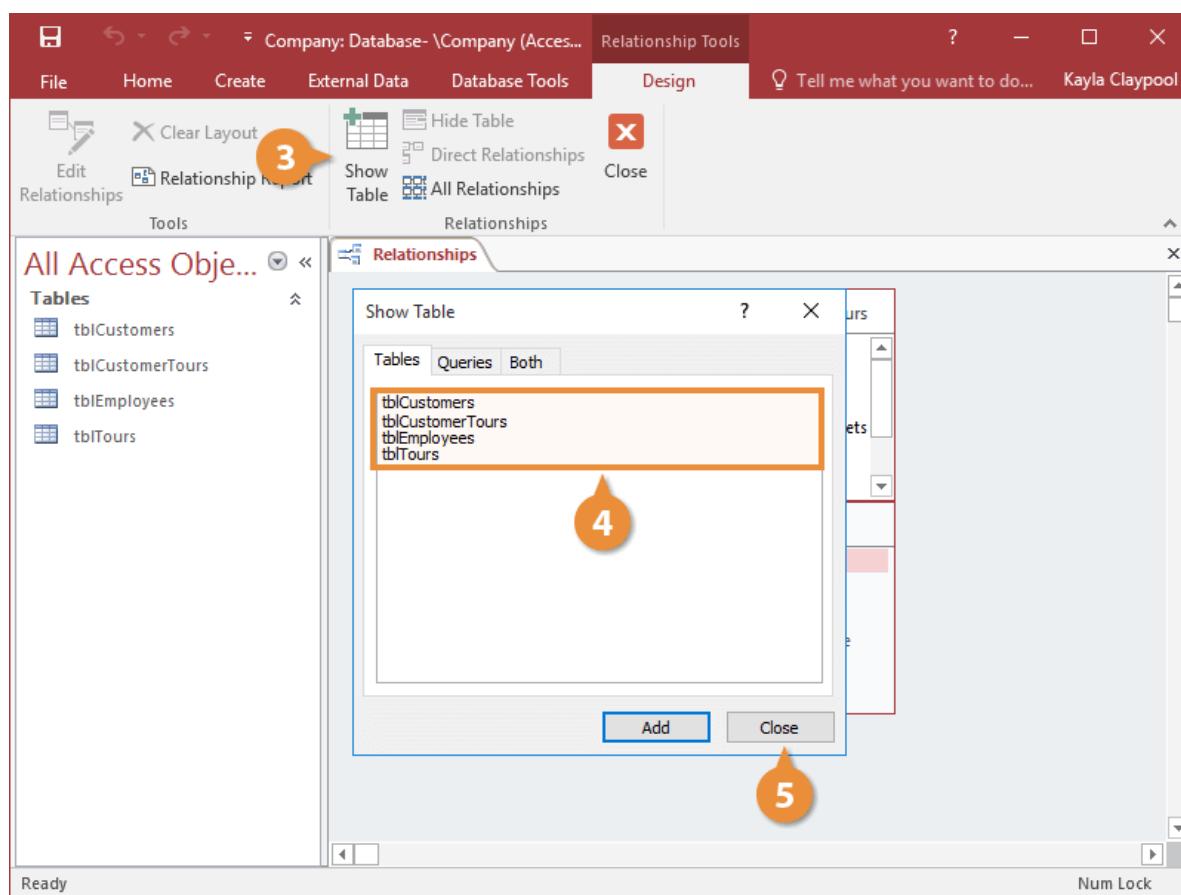
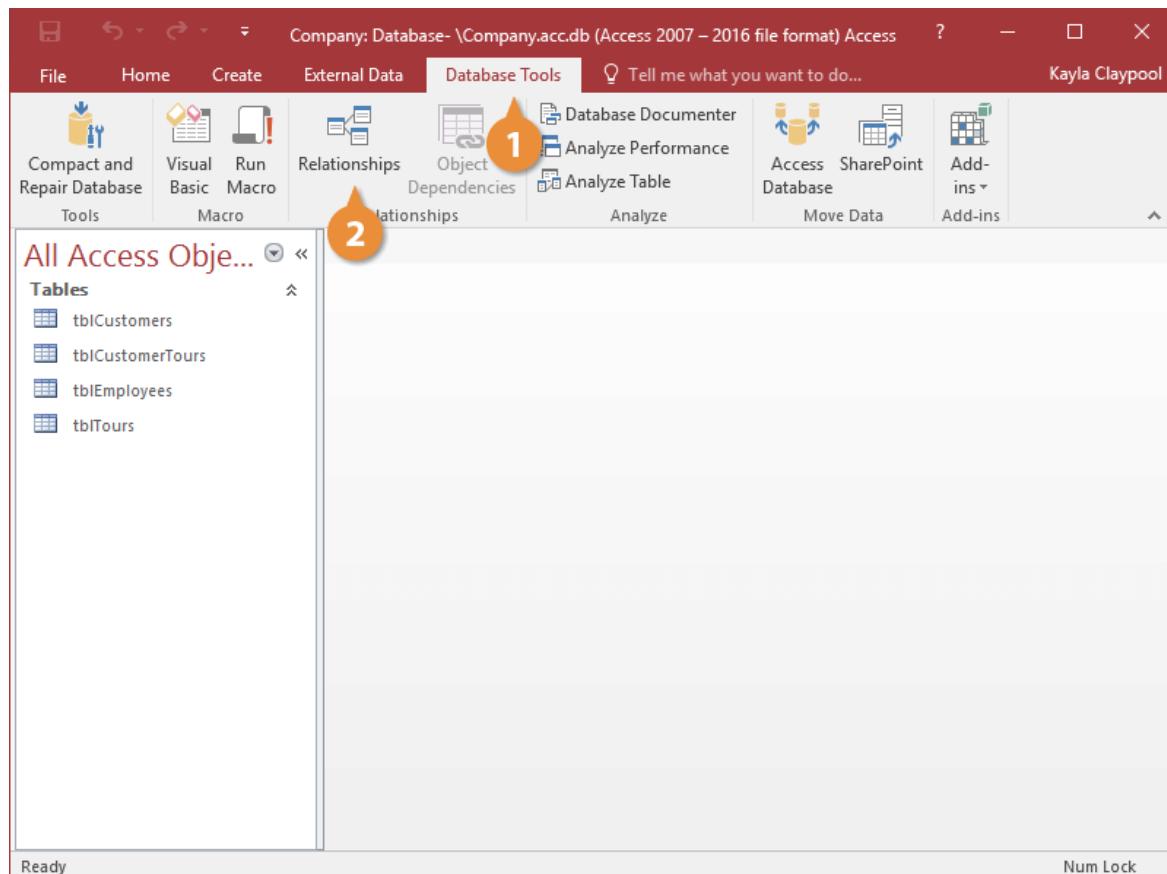
1. Database Tools → Relationships → Show Table → Add tables
2. Drag primary key from one table to the related field in another
3. Check **Enforce Referential Integrity** (optional)
4. Click **Create**

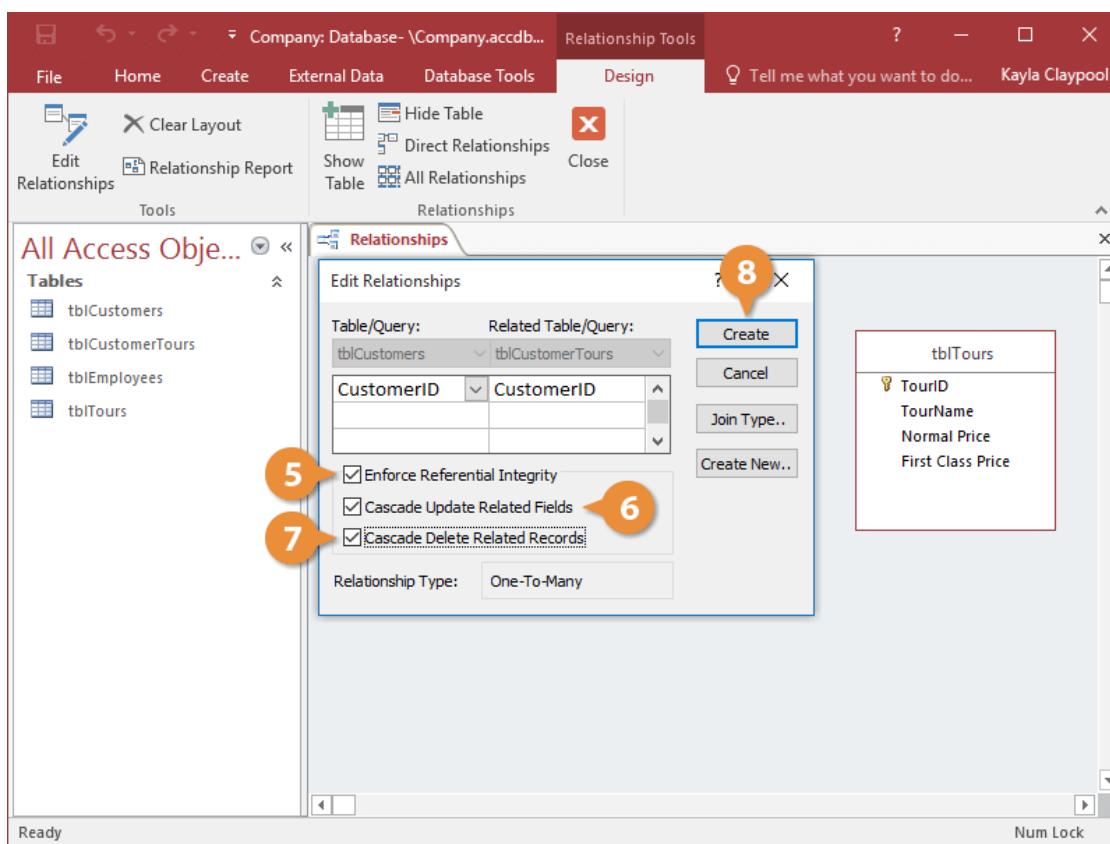
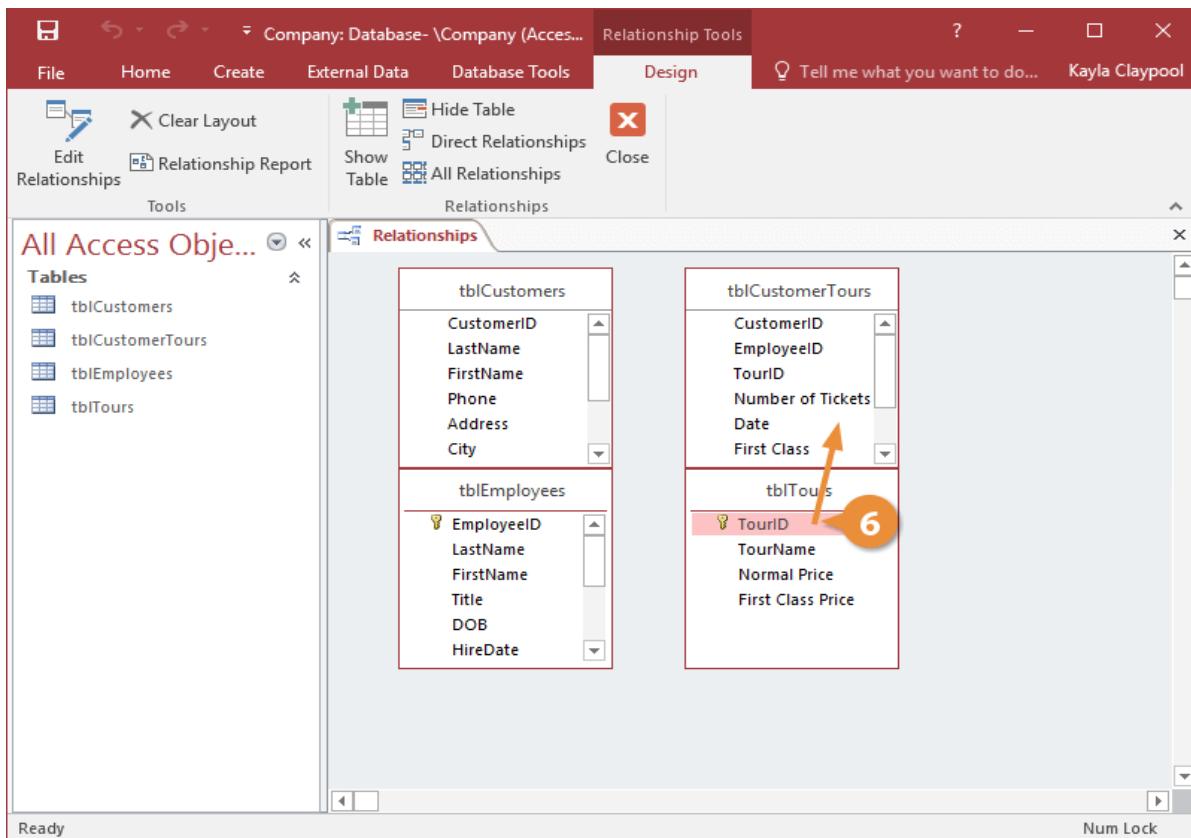
## Referential Integrity ensures:

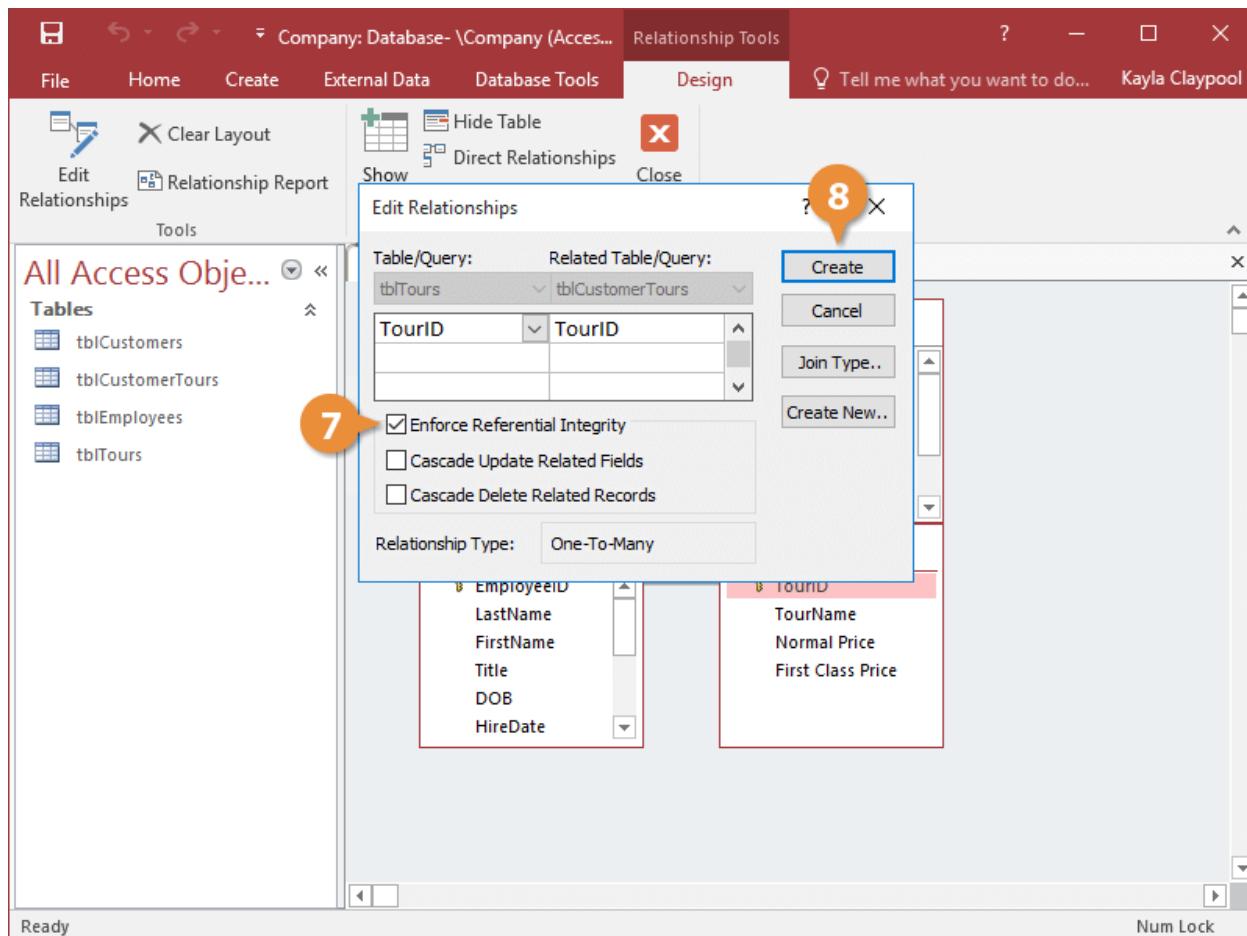
- No orphan records in related tables
- Updates to primary keys cascade to related tables
- Deletions in primary tables cascade to related tables if enabled

### Cascade Options

- **Cascade Update Related Fields:** Automatically updates linked fields
- **Cascade Delete Related Records:** Automatically deletes related records







## Final Result:

	deptcode	deptname	deptphone	deptchair	deptrank	Click to Add	
[+]	001	Admin	ext.144	helpdesk	4th		
[+]	004	IT	ext.165	dean	1st		
[+]	006	Business	ext.811	professor	3rd		
[+]	008	Media	ext.991	professor	2nd		
[+]	009	Finance	ext.225	lab assistant	1st		

	tblDepartment	tblEmployee							
	EmployeeID	Name	Address	City	Phone	Email	deptcode	Click to Add	
	1	Sara		Karachi	312456	sara@email.com			
	2	Alice	st.008	Islamabad	312121	alice@email.com			
	3	Tina	st.007	KPK	311426	tina@email.com			
	4	Sofia	st.002	Punjab	354677	sofia@email.com			
	5	Tom	st.009	balochistan	395670	tom@email.com			
*	(New)				0				

# Lab 10

## INTRODUCTION TO MS ACCESS

### Objectives

The objective of this lab is to guide you through the process of setting up and using Microsoft Access on your computer and to help you understand how to design and create GUI-based forms. By the end of this lab, you will be able to:

- Build user-friendly interfaces for entering, viewing, and managing data in Access databases
- Create tables, define relationships, and use queries, forms, and reports
- Add macros and combo boxes for better usability

### Tools/Software Required

- Microsoft Access (2016, 2019, or Microsoft 365 recommended)

### Description

Microsoft Access is a relational database management system (RDBMS) developed by Microsoft. It combines the power of a database engine (Microsoft Jet/ACE) with an intuitive graphical interface. Access allows users to:

- Create and store structured data in tables
- Establish relationships between tables
- Build queries to extract or filter data
- Design forms (GUI) for user-friendly data entry
- Generate reports to present information

#### Introduction of GUI in MS Access

- **1992 (Access 1.0):** First release; included menus, toolbars, and basic forms/reports designers.
- **1997–2003:** Improved interface with wizards, combo boxes, tab controls, and property sheets.
- **2007:** Ribbon interface replaced traditional menus/toolbars for visual form design.
- **2010–2016:** Enhanced Form Design View and Navigation Forms for coding-free UI creation.
- **2019–Present:** Modern interface with macros, conditional formatting, embedded web controls, and improved Excel/SQL Server/SharePoint integration.

#### Where MS Access is Used

- **Educational Institutions:** Student databases, attendance, exam records
- **Small Businesses:** Inventory, billing, customer databases, appointment scheduling
- **Offices/Departments:** HR records, employee leave management, equipment tracking
- **Nonprofits/NGOs:** Donor and volunteer tracking systems

### Students Table

Field	Data Type	Notes
StudentID	AutoNumber	Primary Key
FirstName	Short Text (50)	
LastName	Short Text (50)	
DOB	Date/Time	
Gender	Short Text (10) / Choice	
Email	Short Text (100)	

Phone	Short Text (20)	
Address	Long Text	
EnrollDate	Date/Time	

## Courses Table

Field	Data Type	Notes
CourseID	AutoNumber	Primary Key
CourseCode	Short Text (10)	
CourseName	Short Text (100)	
Credits	Number (Integer)	

## Enrollments Table

Field	Data Type	Notes
EnrollmentID	AutoNumber	Primary Key
StudentID	Number (Long)	Foreign Key → Students.StudentID
CourseID	Number	Foreign Key → Courses.CourseID
Semester	Short Text (20)	
Grade	Short Text (5)	

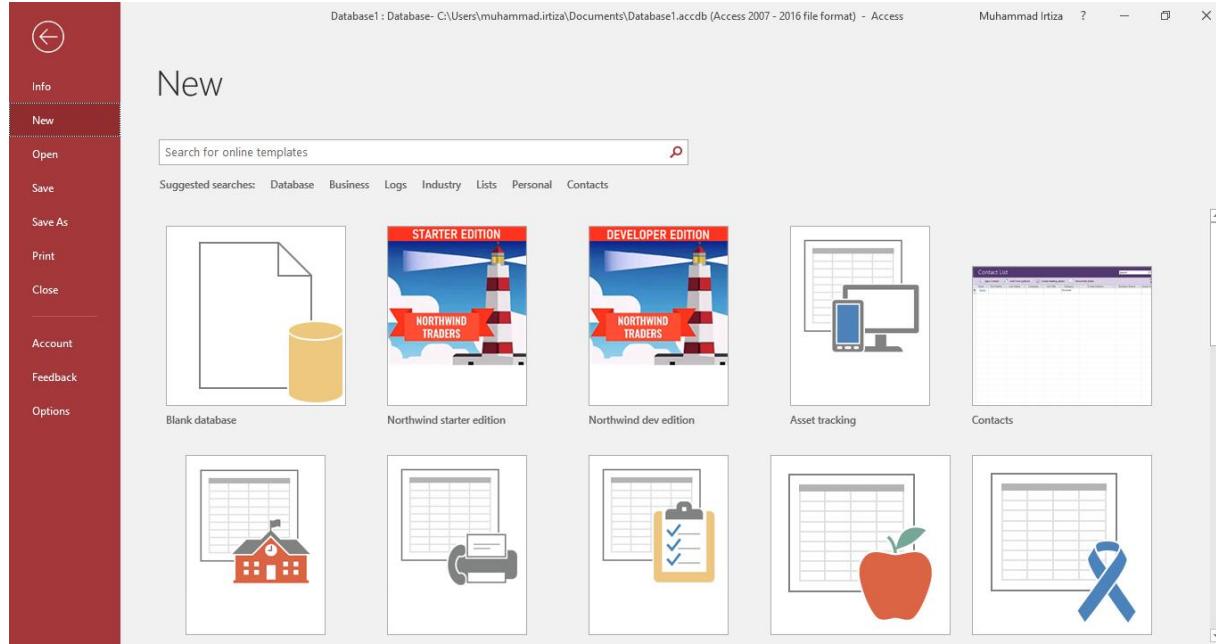
# Step-by-Step Lab Procedure

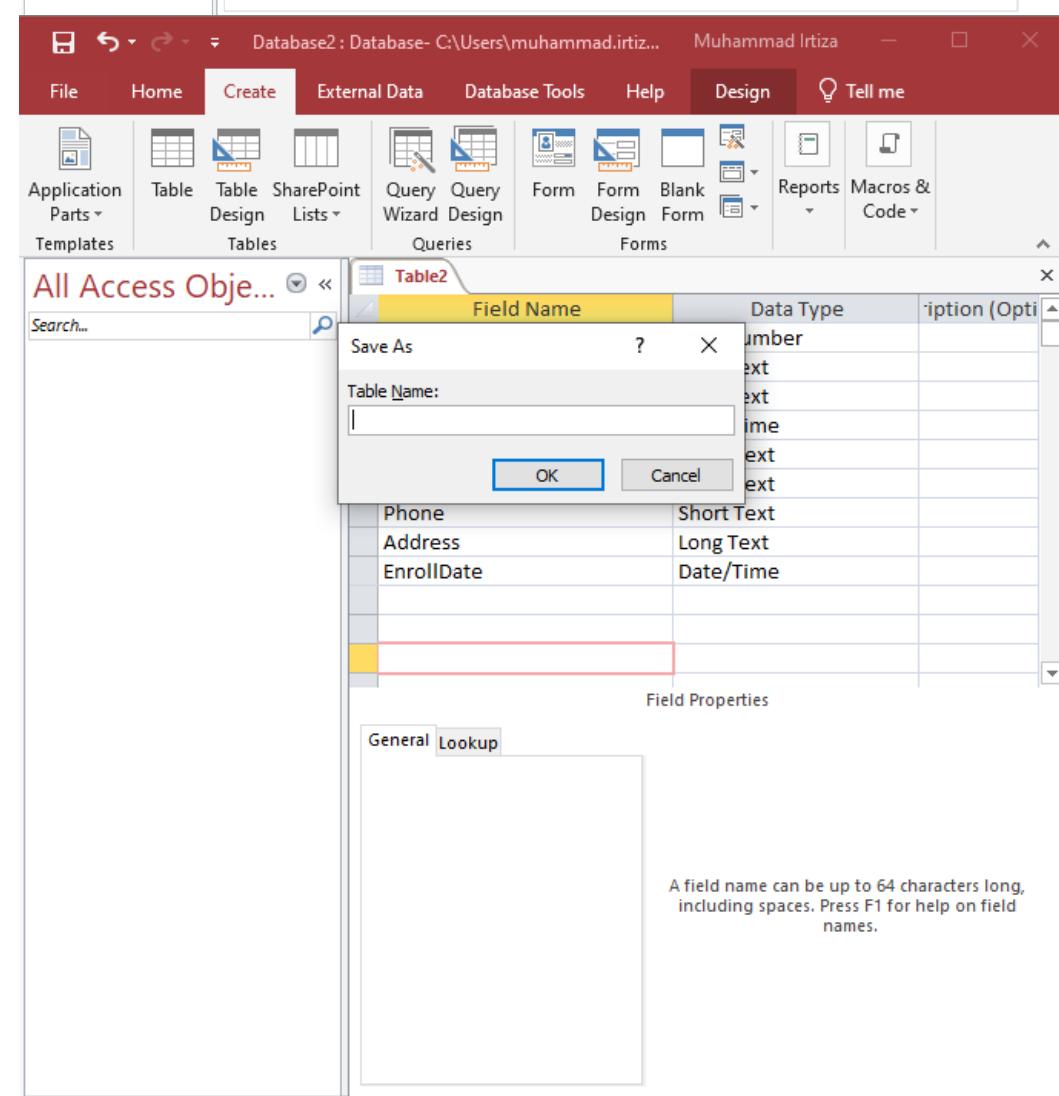
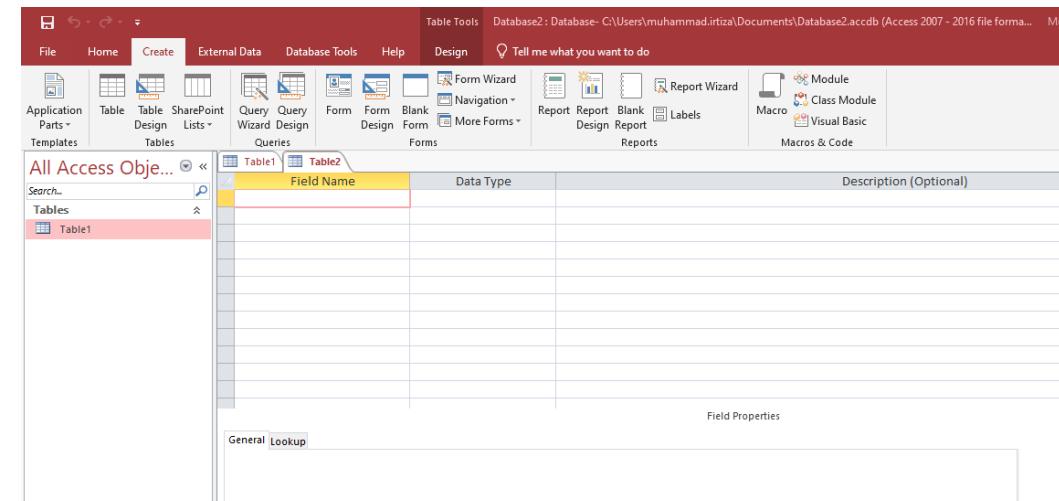
## 1. Create a New Database

- Open Access → File → New → Blank database → Name: StudentManagement.accdb → Create

## 2. Create Tables

- Go to **Create** → **Table Design** and add fields as listed above
- Set **primary keys**: StudentID, CourseID, EnrollmentID
- Save each table





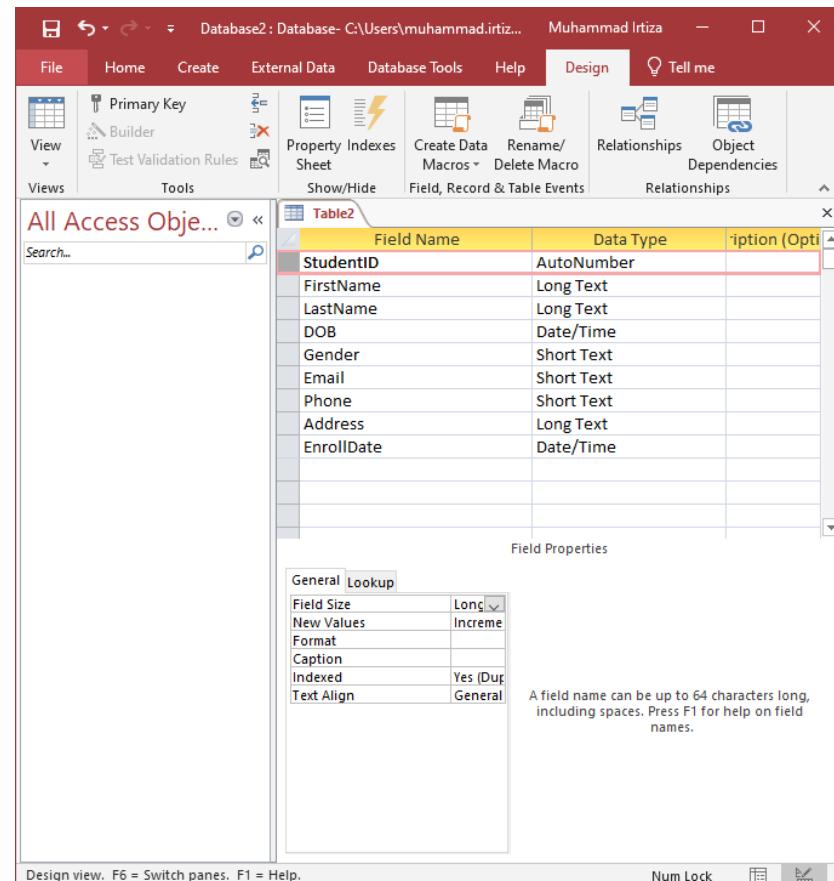
The screenshot shows the Microsoft Access application in Design view. The title bar indicates the database is "Database2 : Database- C:\Users\muhammad.irtiza..". The ribbon menu is visible with tabs like File, Home, Create, External Data, Database Tools, Help, Design, and Tell me. The Design tab is selected. The ribbon also includes sections for Views (Primary Key, Builder, Test Validation Rules), Tools (Property Sheet, Indexes, Create Data Macros, Rename/Delete Macro, Relationships, Object Dependencies), and Field, Record & Table Events.

The main area displays a table named "Table2" with the following fields and properties:

Field Name	Data Type	Option (Opt)
StudentID	AutoNumber	
FirstName	Long Text	
LastName	Long Text	
DOB	Date/Time	
Gender	Short Text	
Email	Short Text	
Phone	Short Text	
Address	Long Text	
EnrollDate	Date/Time	

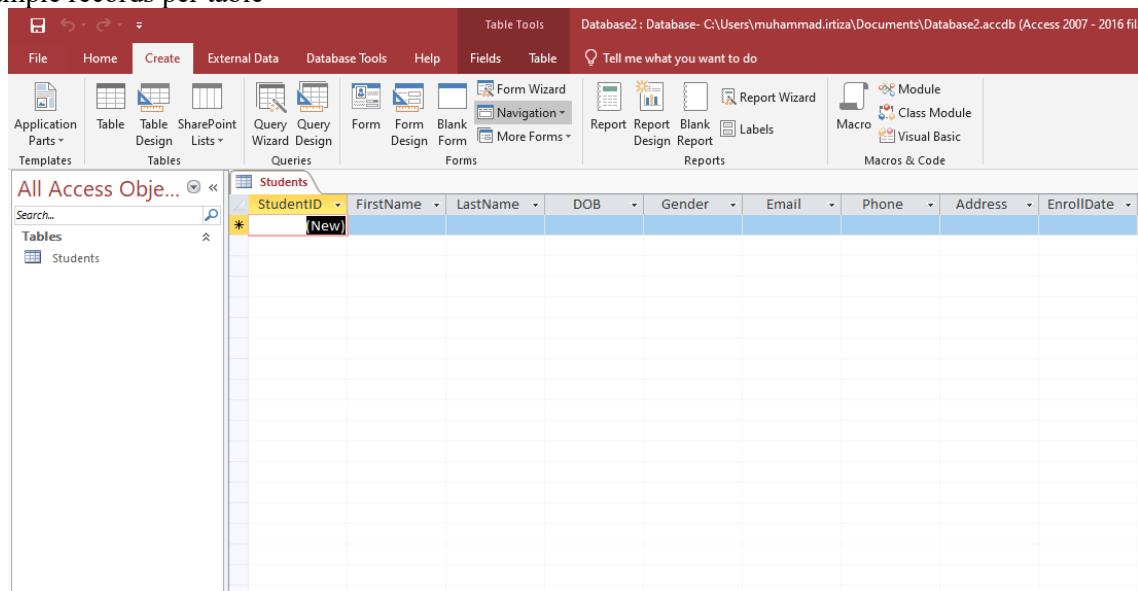
A tooltip message at the bottom right states: "A field name can be up to 64 characters long, including spaces. Press F1 for help on field names."

At the bottom left, a note says: "Design view. F6 = Switch panes, F1 = Help." At the bottom right, there are status indicators for Num Lock, a grid icon, and a chart icon.



### 3. Add Sample Data

- Open tables in Datasheet View
- Add 5–10 sample records per table



### 4. Create Relationships

- Database Tools → Relationships → Add Students, Courses, Enrollments
- Drag StudentID → Enrollments.StudentID, CourseID → Enrollments.CourseID
- Check Enforce Referential Integrity
- Save the relationships

### 5. Create Course Combo Box (Lookup)

- In frmEnrollments Design View, replace CourseID textbox with **Combo Box (Wizard)**
- Get values from **Courses Table** → show CourseName → hide CourseID (store CourseID in Enrollments.CourseID)

## 6. Add Buttons (Macros)

- In Design View, use **Button Wizard** to add:
  - New Record (Record Operations → New Record)
  - Save Record (Record Operations → Save Record)
  - Open Report (Report Operations → Open Report)
  - Close Form (Form Operations → Close Form)

## 7. Create a Report

- Create → Report Wizard → choose **Enrollments** or query by course → generate rptEnrolledStudents

## 8. Save and Backup

- File → Save
- Copy StudentManagement.accdb to submission folder

# Lab Activity

**Objective:** Create a small MS Access database for a gaming firm to manage games, customers, and purchases using GUI-based forms

## Games Table:

Field	Data Type	Notes
GameID	AutoNumber	Primary Key
GameTitle	Short Text	
Genre	Short Text	
Price	Currency	

## Customers Table:

Field	Data Type	Notes
PurchaseID	AutoNumber	Primary Key
CustomerID	Number	FK → Customers.CustomerID
GameID	Number	FK → Games.GameID
PurchaseDate	Date/Time	

## Purchases Table:

Field	Data Type	Notes
PurchaseID	AutoNumber	Primary Key
CustomerID	Number	FK → Customers.CustomerID
GameID	Number	FK → Games.GameID
PurchaseDate	Date/Time	

## Set Relationships

- Link CustomerID and GameID in Purchases to respective tables

## Add Sample Data

- At least 5 games, 5 customers, and several purchases

## Create Forms

- Customer Form
- Game Form
- Purchase Form (use combo boxes to select customer and game)

## Create a Report

- Show Customer Name, Game Title, and Purchase Date

## Final Result

### Customers Table:

Microsoft Access Datasheet View of the Customers Table:

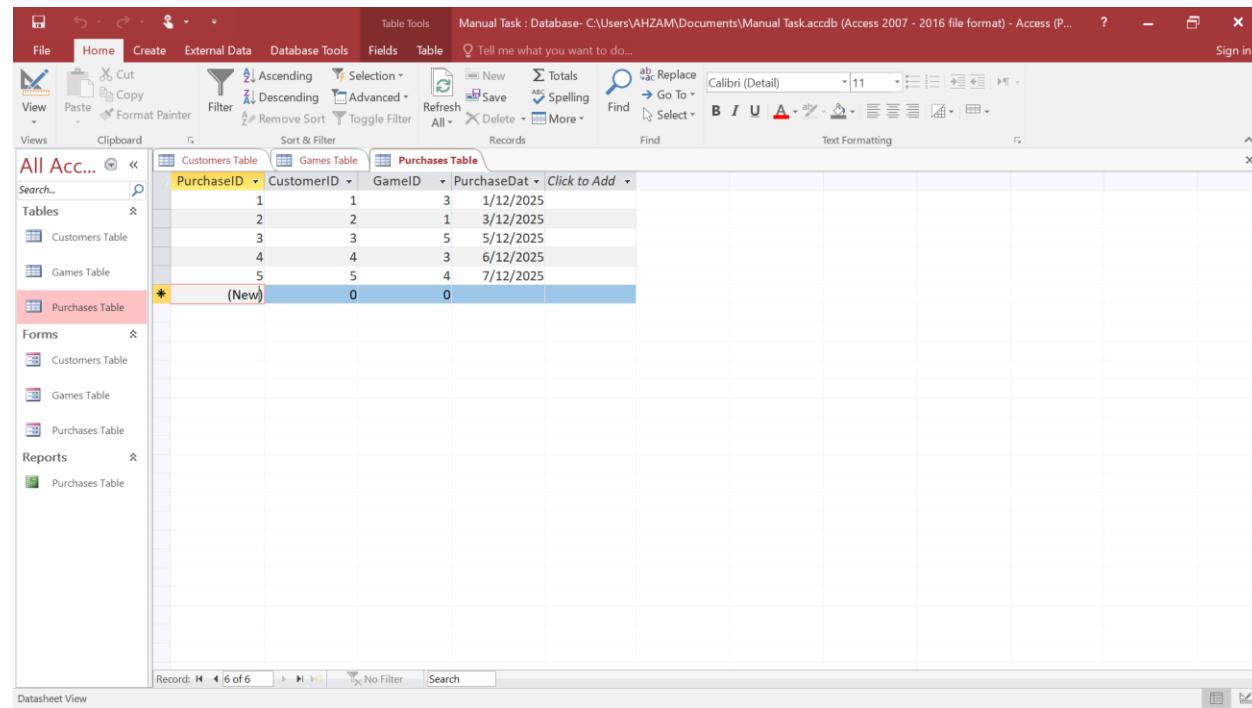
CustomerID	CustomerName	Email	Phone	Click to Add
1	Ali Raza	ali@gmail.com	0300-1234567	
2	Sara Ahmed	sara@yahoo.cc	0321-5566778	
3	Hamza Khan	hamza@gmail.i	0345-9988776	
4	Ayesha Noor	ayesha@outloc	0301-4455667	
5	Bilal Shah	bilal@gmail.cor	0333-6622114	
*	(New)			

### Games Table:

Microsoft Access Datasheet View of the Games Table:

GamesID	GamesTitle	Genre	Price	Click to Add
1	FIFA 24	Sports	\$59.99	
2	GTA 5	Action	\$39.99	
3	GTA 4	Action	\$35.99	
4	Minecraft	Adventure	\$29.99	
5	Call of Duty: MV Shooting		\$69.99	
*	(New)		\$0.00	

## Purchases Table:



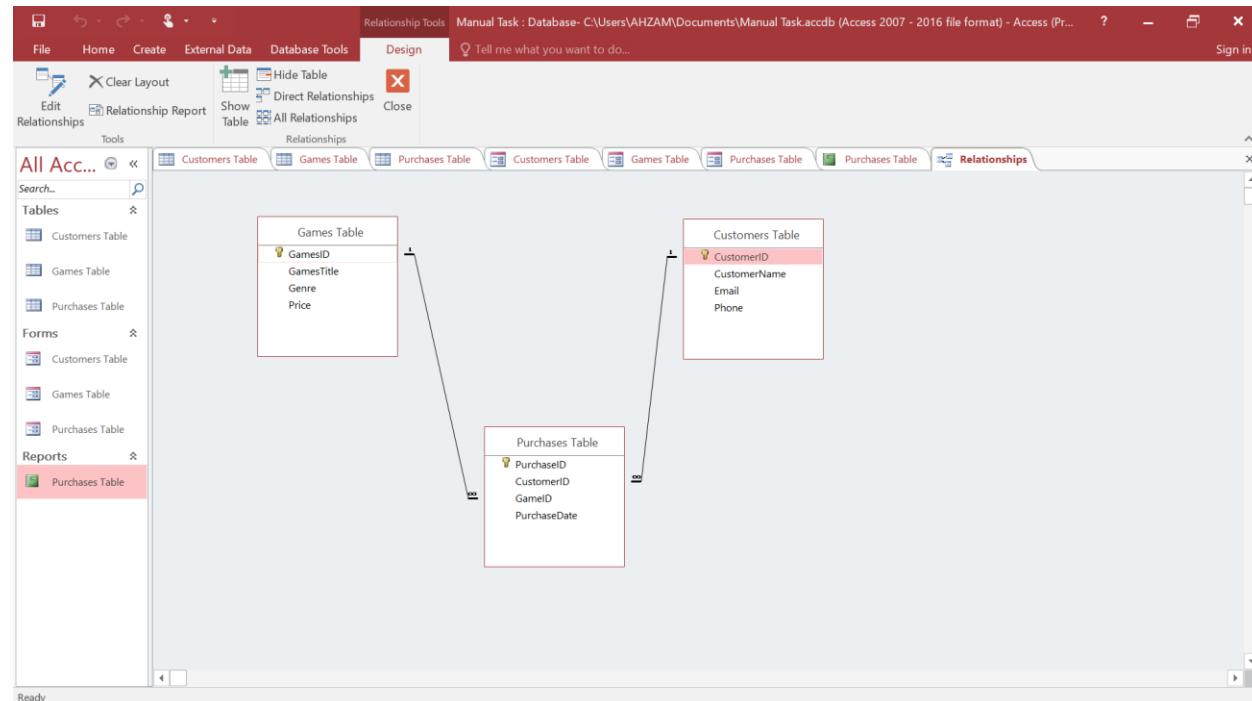
The screenshot shows the Microsoft Access application in Datasheet View. The ribbon at the top has 'File', 'Home' (selected), 'Create', 'External Data', 'Database Tools', 'Fields', and 'Table'. The 'Table Tools' tab is active. The title bar says 'Manual Task : Database- C:\Users\AHZAM\Documents\Manual Task.accdb (Access 2007 - 2016 file format) - Access (P...)'.

The left pane shows tables: 'Customers Table', 'Games Table', and 'Purchases Table' (selected). The main area displays the 'Purchases Table' with the following data:

PurchaseID	CustomerID	GameID	PurchaseDate
1	1	3	1/12/2025
2	2	1	3/12/2025
3	3	5	5/12/2025
4	4	3	6/12/2025
5	5	4	7/12/2025
*	(New)	0	

Record: 4 of 6

## Set Relationships:



## Create Forms

- Customer Form

The screenshot shows the Microsoft Access application interface. The title bar reads "Manual Task : Database- C:\Users\AHZAM\Documents\Manual Task.accdb (Access 2007 - 2016 file format) - Access (Product Activation Failed)". The ribbon tabs include File, Home, Create, External Data, Database Tools, and a search bar. The left pane displays the database structure with tables like Customers Table, Games Table, Purchases Table, and a selected form named "Customers Table". The main area shows the "Customers Table" form with the following data:

CustomerID	1
CustomerName	Ali Raza
Email	ali@gmail.com
Phone	0300-1234567

Record: 1 of 5

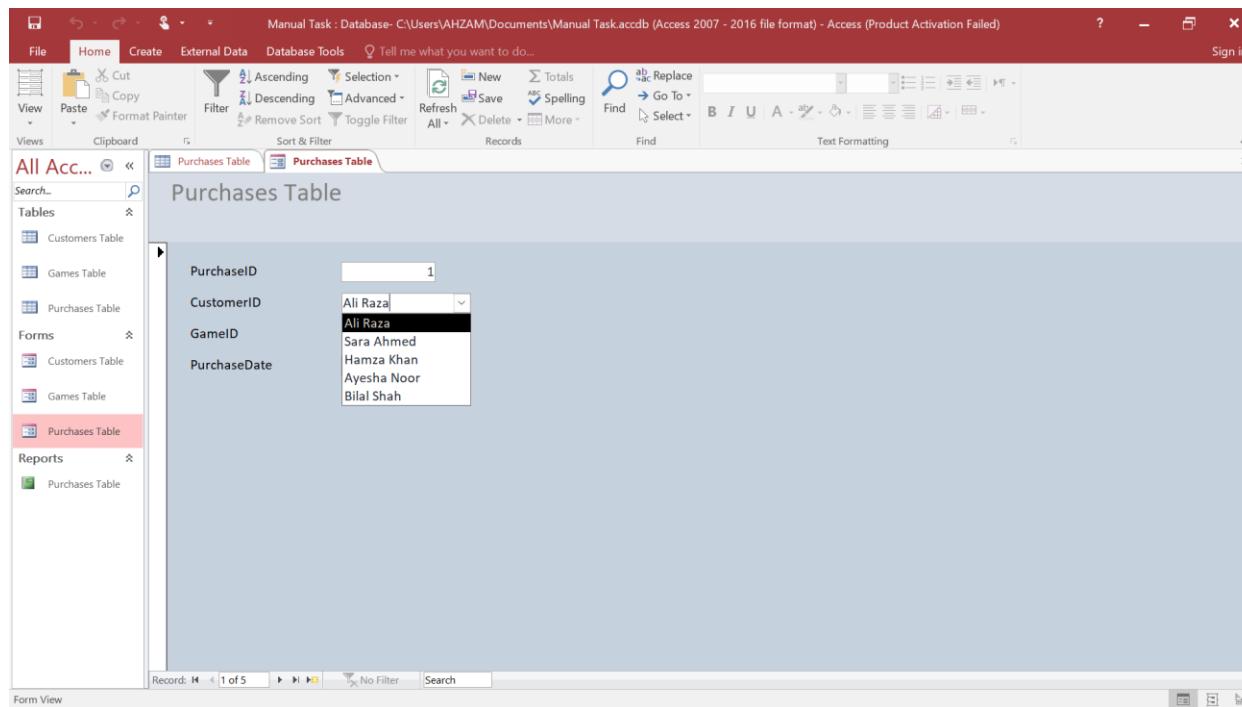
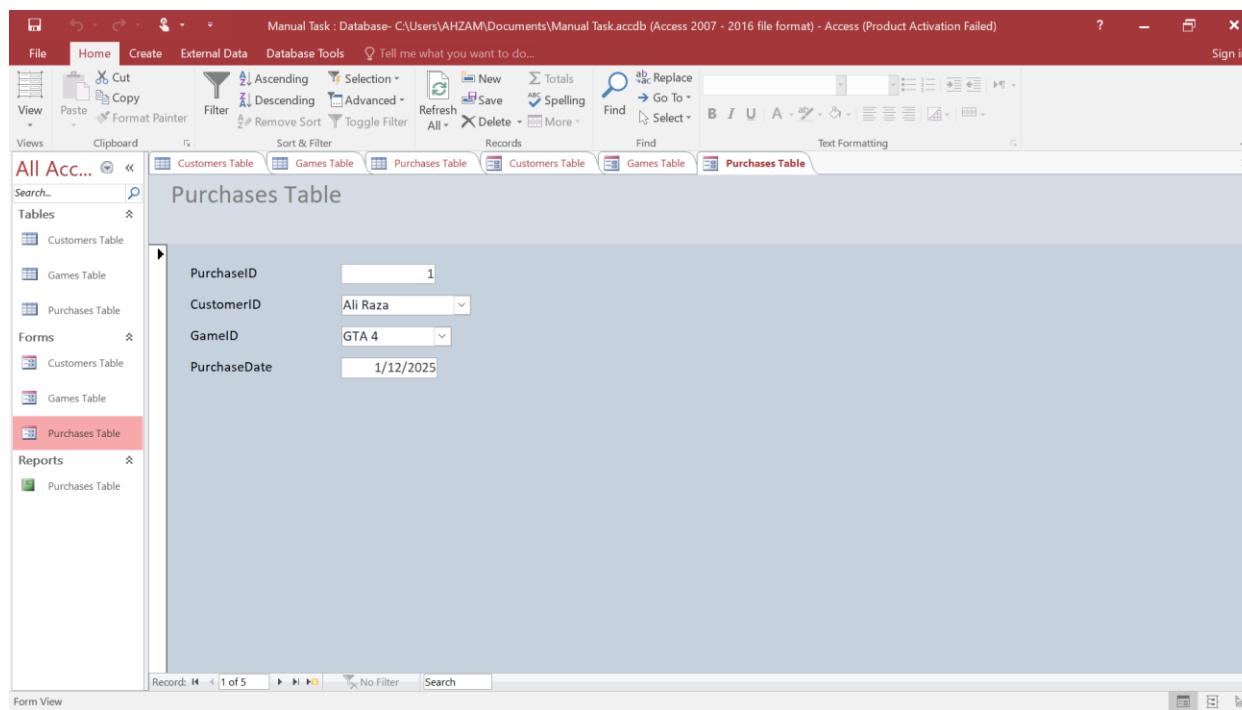
- Game Form

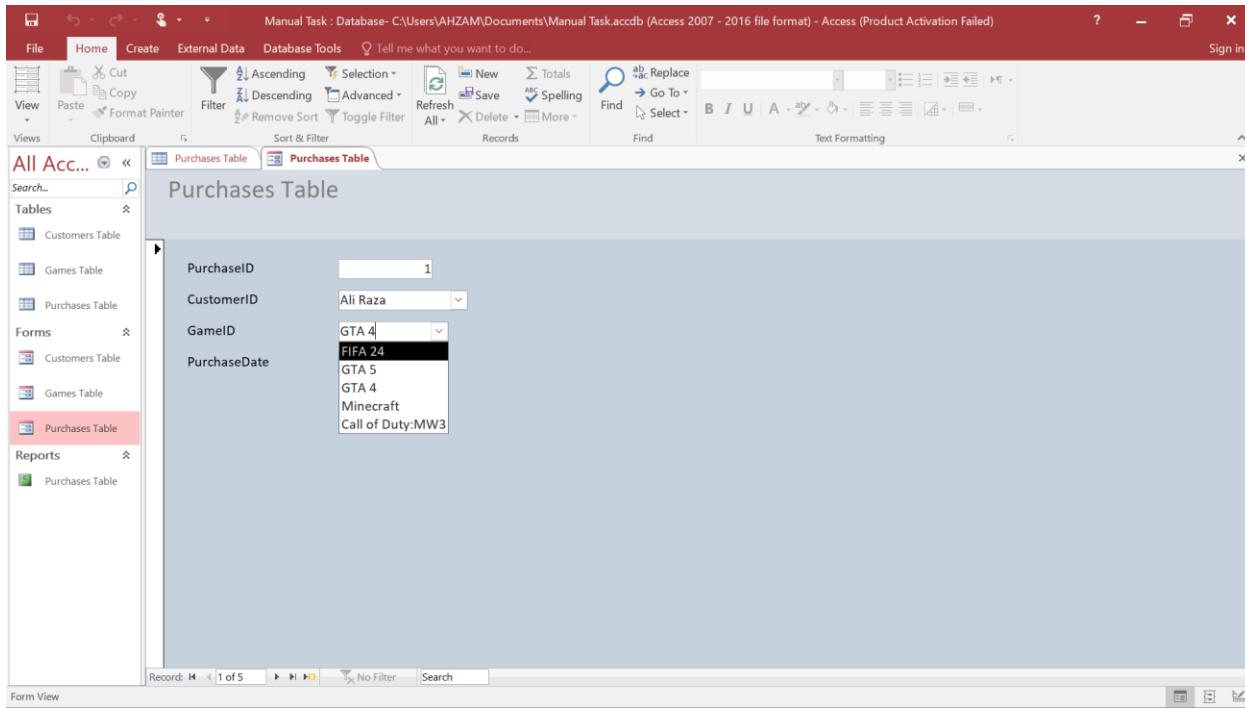
The screenshot shows the Microsoft Access application interface. The title bar reads "Manual Task : Database- C:\Users\AHZAM\Documents\Manual Task.accdb (Access 2007 - 2016 file format) - Access (Product Activation Failed)". The ribbon tabs include File, Home, Create, External Data, Database Tools, and a search bar. The left pane displays the database structure with tables like Customers Table, Games Table, Purchases Table, and a selected form named "Games Table". The main area shows the "Games Table" form with the following data:

GamesID	1
GamesTitle	FIFA 24
Genre	Sports
Price	\$59.99

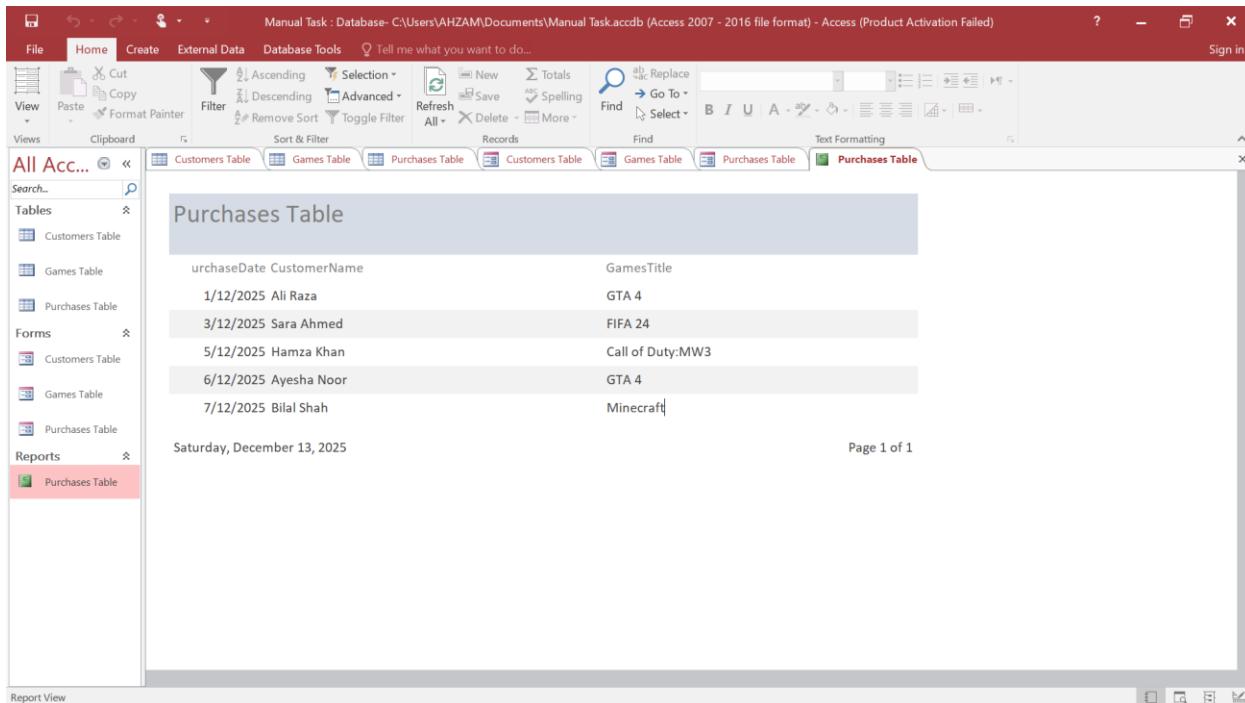
Record: 1 of 5

- Purchase Form (use combo boxes to select customer and game)





## Create a Report



# Lab 11

## INTRODUCTION TO PROJECT MANAGEMENT USING TRELLO

### OBJECTIVE

By the end of this lab, the student will be able to:

- Understand the purpose and core components of Trello (Boards, Lists, Cards, Workspaces).
- Create and customize a Trello account, board, and workflow.
- Add team members, set permissions, and collaborate effectively on a project board.
- Manage project tasks using labels, due dates, checklists, attachments, and card details.
- Navigate Workspaces and organize team projects efficiently.

### BACKGROUND & CONCEPTS

What is Trello?

Trello is a **visual work management and collaboration tool** used to organize tasks, manage teams, and track project progress. It uses a **Kanban-style interface** consisting of:

- **Boards** → A full project
- **Lists** → Stages of the workflow
- **Cards** → Individual tasks or ideas

This visual structure makes it easy to move tasks from **To Do** → **Doing** → **Done** simply by dragging cards.

Boards

A **board** represents a full project.

Examples:

- Event planning board
- Website development board

- Content writing pipeline



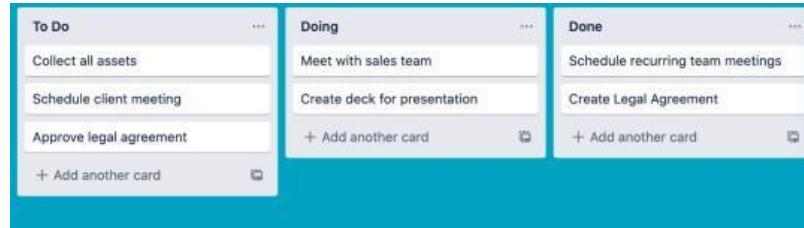
Boards contain all tasks and information related to the project.

### Lists

Lists help you organize cards into categories or stages.

Common examples:

- To Do
- Doing
- Done



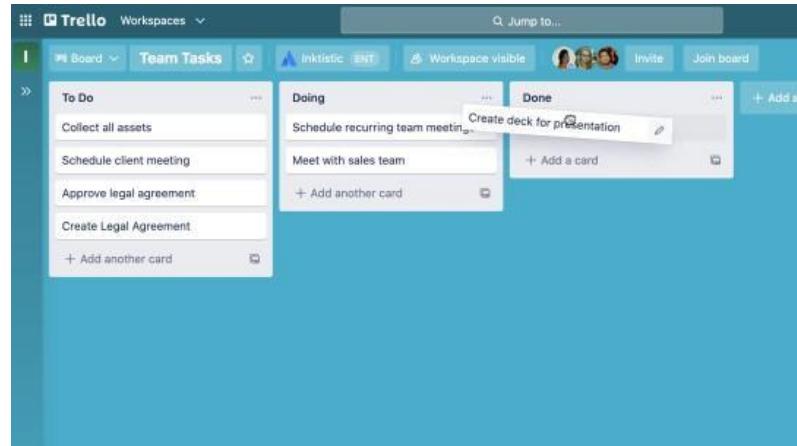
Lists help track task status from start to finish.

### Cards

A **card** represents a task or item from your project. A card can contain:

- Descriptions
- Checklists
- Attachments
- Labels
- Due dates
- Members

Cards can be clicked to open and edited in detail.



## STEP-BY-STEP LAB PROCEDURE

### PART 1 — Prerequisites & Setup

#### Software Needed

- Any web browser
- Internet connection
- A valid email address

#### Create Your Trello Account

1. Go to <https://trello.com/signup>
2. Enter your email and password.
3. Check your email to confirm your account.
4. Login → You're ready to start!

### PART 2 — Trello Basics (Board → Lists → Cards)

#### Phase 1: Create Your First Trello Board

##### Step 1:

Click “Create new board” from the Workspace tab

OR

Click “+” → Create Board

**Step 2:**

Enter a **Board Name**, e.g., "College Event Project"

**Step 3:**

Choose **Privacy Settings**:

- **Private** → Only invited members can access
- **Workspace Visible** → All workspace members can view
- **Public** → Visible on the internet (use only for public roadmaps)

**Expected Result:**

A new empty board appears with the option to add lists.

**Phase 2: Customize the Board Appearance**

**Step 1:**

Click **Show Menu** → **Change Background**

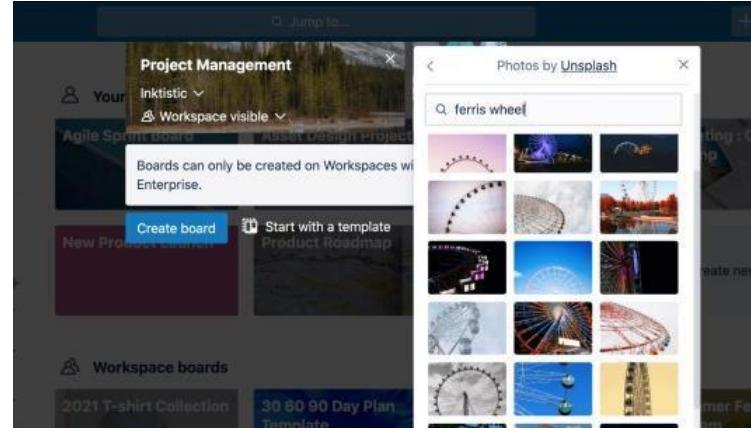
**Step 2:**

Choose from:

- Solid colors
- Unsplash images
- Upload your own image

**Result:**

Your board now has a unique theme suitable for your project.

**Phase 3: Build a Workflow (Add Lists)**

**Step 1:** Click “**Add a list**”

**Step 2:** Add at least 3 lists:

- To Do
- Doing
- Done

**Result:**

Your board now visually represents your workflow.

**Phase 4: Add Tasks Using Cards****Step 1:**

Click “**Add a card**” under *To Do*

**Step 2:**

Add 3–5 cards, e.g.:

- Write project proposal
- Contact vendors
- Design event website
- Confirm budget
- Assign roles

**Expected Output Example:****To Do**

- Write project proposal
- Design event website

**Phase 5: Add Details to Cards ("Card Back")**

Click each card and add:

- **Description**
- **Checklist** (e.g., "Step 1, Step 2...")
- **Attachments** (optional)
- **Comments**
- **Members** (assign tasks)

**Phase 6: Add Labels**

**Three ways to add labels:**

1. Open a card → click **Labels**
2. Hover card → click pencil icon → **Edit Labels**
3. Press **L** → choose a color

**Example labels:**

-  High Priority
-  Design
-  Development
-  Urgent

**Phase 7: Set Due & Start Dates**

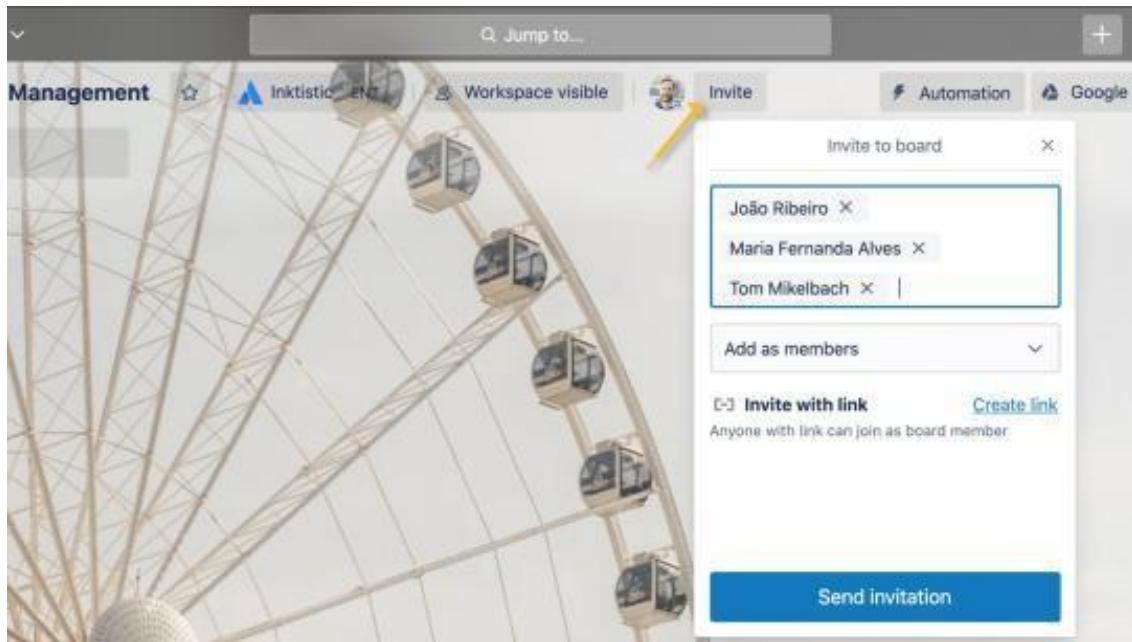
1. Open a card → click **Dates**
2. Set:
  - **Start Date**
  - **Due Date**
  - **Reminder time**
3. Click the checkbox to mark **Complete**

**Badge Colors:**

- Grey → More than 24 hours left
- Yellow → Due soon
- Red → Due now
- Light Pink → Overdue 24+ hours
- Green → Completed

Phase 8: Collaborate — Add Members to the Board

1. Click **Invite** at the top of the board
2. Add members by:
  - o Email
  - o Name
  - o Shareable link
  - o QR Code



## Roles:

- **Admin** → Full control
- **Normal** → View & edit cards
- **Observer** → Read-only (optional)

Phase 9: Create & Manage Workspaces

A **Workspace** is where all team boards and members are managed.

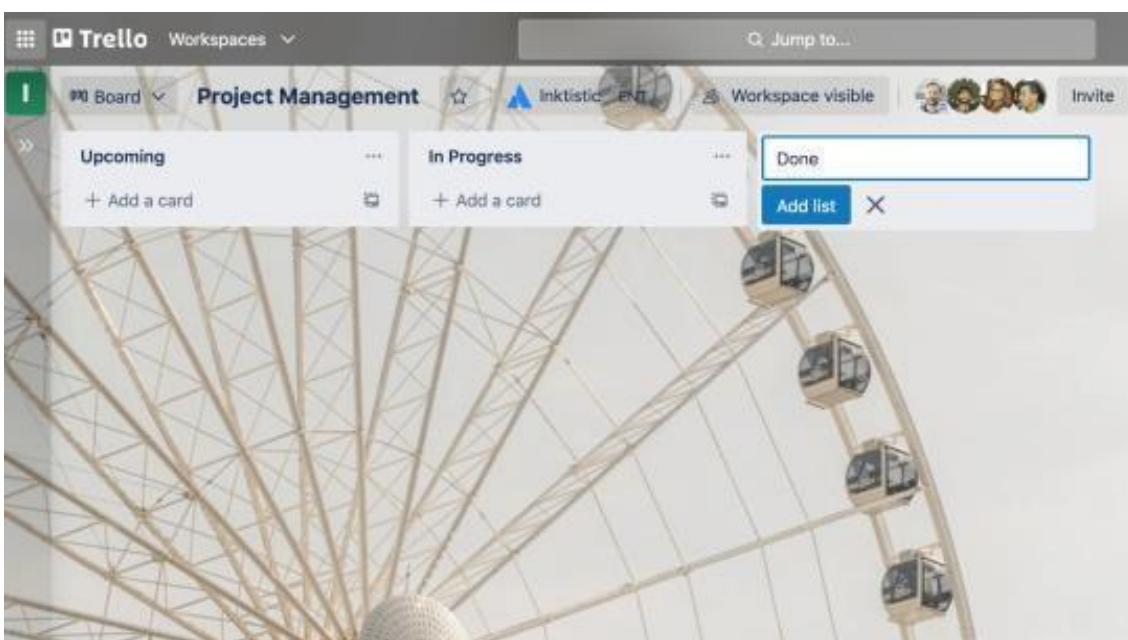


## Steps:

1. Go to Workspace
2. Click **Invite Workspace Members**
3. Add team members via email

In free plans → all members become Workspace Admins

In Premium → Admins can set roles (Admin, Normal, Observer)



## Build a Workflow in Trello

Lists in Trello help you organize your cards by status. They can represent different things like a collection of ideas or tasks within a larger project. Whether it's a basic Kanban board, a sales pipeline, a marketing calendar, or a robust project management workflow, the key is to establish a workflow that fits your team's needs.

## 1. Add Lists to Build Your Workflow

1. Click “**Add a list**” to add your first list to your board.
2. Give the list a title that represents the stage or type of information it will hold. Examples:
  - o To Do
  - o Doing
  - o Done
  - o Research
  - o Testing
3. Add as many lists as needed to build out your workflow. Trello is fully customizable.

## 2. Add Tasks and To-Dos (Cards)

Cards are the fundamental unit of a Trello board and represent tasks or ideas. They can be used for:

- Customer support issues
- Design tasks
- Blog posts
- Project-related reminders

### Steps to add cards:

1. Click “**Add a card**” under the relevant list.
2. Keep card titles short for easy scanning.
3. Add more information to cards to ensure clarity:
  - o Descriptions
  - o Due dates
  - o Members
  - o Checklists
  - o Attachments
  - o Comments

**Tip:** Drag and drop cards across lists to show progress. There is no limit to the number of cards you can add.

## 3. Get Specific on the Card Back

Click a card to expand it and access additional details on the **card back**, where you can:

- Add task instructions
- Assign members
- Add checklists or attachments
- Track progress

## 4. Onboard Your Team

Trello makes team collaboration simple:

- Invite team members to boards or Workspaces
- Assign tasks and roles
- Reduce miscommunication by centralizing information

## 5. Create a Workspace

A **Workspace** is a secure place for all your team's projects:

- Navigate all team boards and members
- View Workspace-specific information
- Organize stakeholders and tasks

**Steps:**

1. When you join Trello, you are automatically added to a Workspace.
2. Create up to 10 boards in a free Workspace.
3. Invite members by email or name through the **Members tab**.
4. Free Workspaces: all members automatically have admin status.
5. Premium Workspaces: Admins can assign roles (Admin, Normal, Observer) and manage permissions in detail.

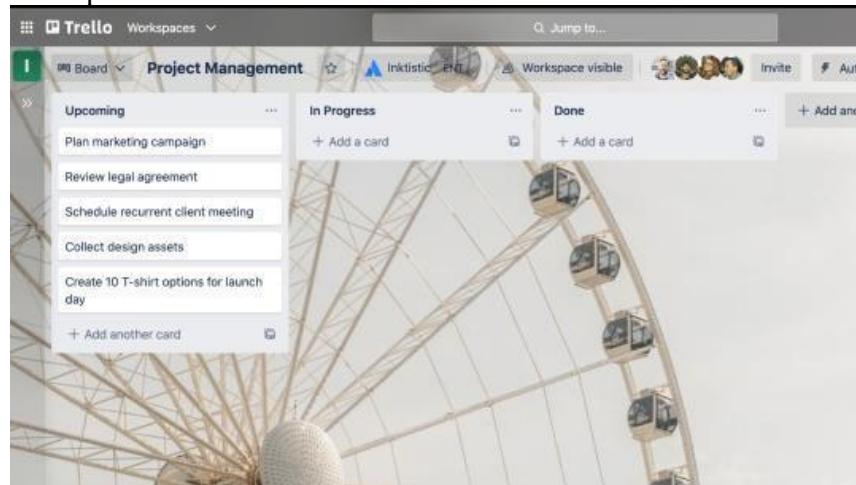
### Premium Admin Capabilities:

- Maintain admin status on all boards
- Control who can create or delete boards
- Manage board visibility and guest permissions

## 6. Add Labels to Cards

Labels are a way to categorize cards using colors:

- 30 color options + colorless option
- A single card can have multiple labels



## Ways to add a label:

- Open a card → click **Labels**
- Hover over a card → click pencil → **Edit Labels**
- Press L → select a label color
- Press 0–9 → select corresponding label color

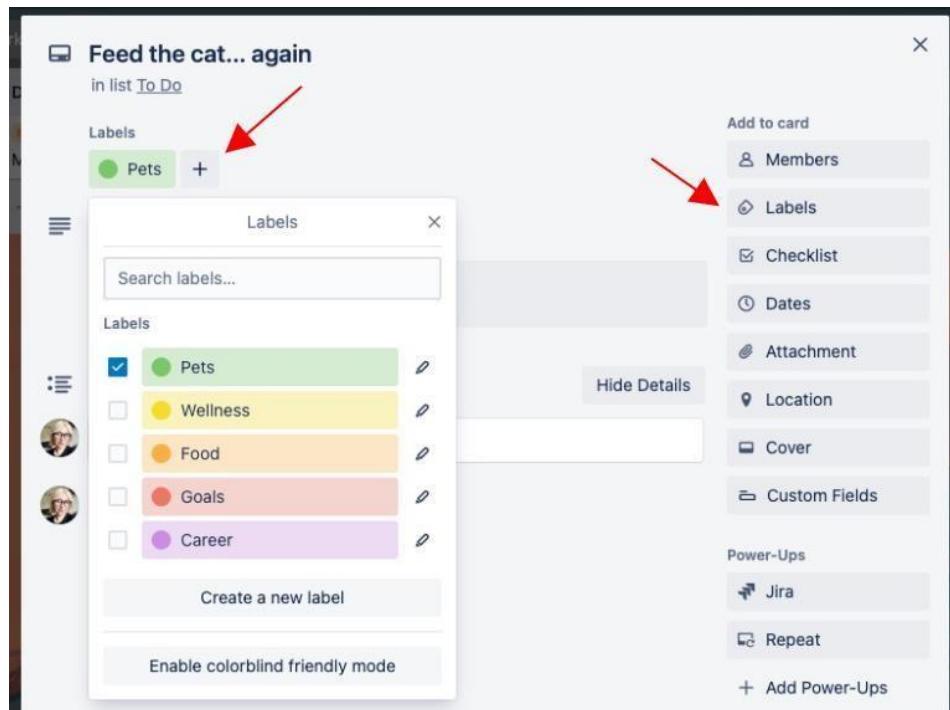
The screenshot shows a Trello board titled 'Project Management'. A card titled 'Plan marketing campaign' is selected. The card has a 'Marketing' label. The interface includes sections for 'Members', 'Labels' (with a dropdown menu), 'Due Date' (set to Sep 21 at 12:38 AM), and 'Description' (which contains a checklist). On the right side, there are sections for 'ADD TO CARD' (with options like 'Members', 'Labels', 'Checklist', 'Dates', 'Attachment', 'Location', and 'Cover'), 'POWER-UPS' (with 'Google Drive' and 'Slack'), and 'AUTOMATION' (with '+ Add Power-Ups' and '+ Add button').

## Remove a label:

- Open card → click **Labels** → deselect active label
- Hover card → pencil → **Edit Labels**
- Press L or 0–9 to remove

The screenshot shows the 'Members' page of a Trello workspace. It lists 'Workspace members (10)' with their names, roles (e.g., Admin, Normal), and 'Remove' buttons. There is also a section for 'Invite members to join you'.

Name	Role	Action
Alexia Ohannessian	Admin	<input type="button" value="Remove"/>
Carrie Steele	Normal	<input type="button" value="Remove"/>
Cynthia Yu	Normal	<input type="button" value="Remove"/>
Jordan Michael	Admin	<input type="button" value="Remove"/>
Lacey Kehring	Normal	<input type="button" value="Remove"/>
Lauren Moon	Admin	<input type="button" value="Remove"/>



## 7. Add Due Dates and Start Dates

Cards can have:

- **Start Date**
- **Due Date**
- **Due Time**

**Steps:**

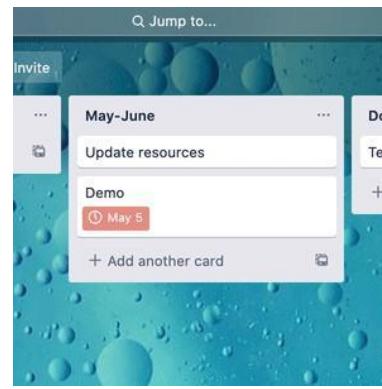
1. Click the card → click **Dates**
2. Enable **Start Date** and **Due Date**
3. Dates appear on both Calendar and Timeline Views

**Mark a due date as complete:**

- Click checkbox next to the date → badge turns green

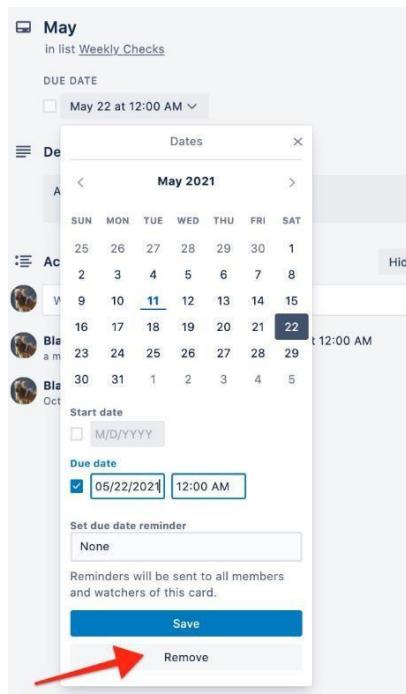
**Remove a date:**

- Click the date → select **Remove**



## 8. Due Date Badge Colors

- **Light Grey:** More than 24 hours left
- **Yellow:** Due soon (within 24 hours)
- **Red:** Just became due (overdue)
- **Light Pink:** Overdue for more than 24 hours
- **Green:** Task marked complete

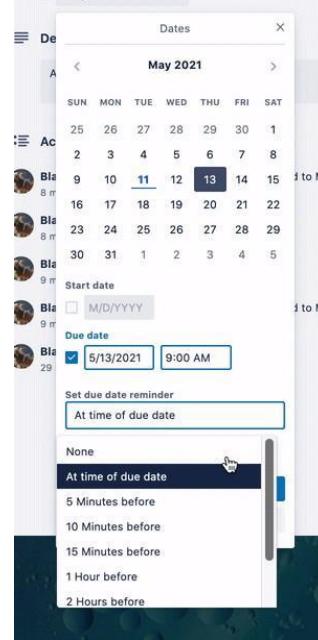


<p><b>Due date</b></p> <input type="checkbox"/> Jul 20 at 11:00 AM	Light grey means the card is due in more than 24 hours.
<p><b>Due date</b></p> <input type="checkbox"/> tomorrow at 11:00 AM <span style="background-color: yellow; border: 1px solid black; padding: 2px;">Due soon</span>	Yellow badge means a card is Due soon. (within 24 hours of being due)

<b>Due date</b> <input type="checkbox"/> today at 3:55 PM <span style="background-color: red; color: white; padding: 2px 5px;">Overdue</span> ▾	Red badge means the card just became Due, and is now Overdue. It will remain red for 24 hours.
<b>Due date</b> <input type="checkbox"/> Jun 15 at 11:25 AM <span style="background-color: pink; color: red; padding: 2px 5px;">Overdue</span> ▾	Light pink badge means the card has been Overdue for more than 24 hours.
<b>Due date</b> <input checked="" type="checkbox"/> Jun 15 at 11:25 AM <span style="background-color: green; color: white; padding: 2px 5px;">Complete</span> ▾	Green badge means the due date is marked "Complete".

## 9. Due Date Reminders

- Set reminders in the same panel as due dates
- Choose time to be notified
- Must set a reminder to receive notifications



## LAB ACTIVITY

### **Activity 1: Guided Task – Create a Mini Project Board**

Create a Trello board for “**Designing a Personal Portfolio Website.**”

You must:

- Create 3 lists (To Do, Doing, Done)
- Add at least 5 tasks
- Apply 3 different labels
- Assign yourself to 2 cards

**Hint:** Use labels like "Design", "Content", "Urgent".

### **Activity 2: Troubleshooting Scenario – Why Is the Task Missing?**

You open your Trello board and notice that:

- A card is **not visible** to some team members.

**Find & fix the issue:**

- Is the board set to Private?
- Is the team member not added?
- Did you accidentally filter labels?
- Is the card archived?

**Your task:**

Identify the cause and take action to fix visibility.

### **Activity 3: Creative Challenge – Build a Fun Project Board**

Create a Trello board for something fun, such as:

- Planning a birthday party
- Creating a YouTube channel content plan
- Designing a gaming tournament
- Weekly fitness routine

Requirements:

- Add 4+ lists
- Add 8+ cards
- Add labels, due dates, and checklists
- Customize background to match the theme

## Activity 1:

The screenshot shows a Trello board titled "Web Dev project". The board has three main lists: "TO Do", "DOING", and "DONE".

- TO Do:**
  - Conduct User Testing
  - Write Content for About Us
  - Fix Login Bug
  - Take Photos for Gallery
  - Meeting with Client
- DOING:**
  - Conduct User Testing
  - Fix Login Bug
- DONE:**
  - buy hosting
  - buy domain
  - logo design
  - content for the website

At the top right, there is a button to "Add another list". At the bottom, there are navigation links for "Inbox", "Planner", "Board" (which is selected), and "Switch boards".

## Activity 2:

The screenshot shows a Trello board titled "Web Dev project". On the left, there is a sidebar with a "TO Do" list containing cards: "Conduct User Testing", "Write Content for About Us", "Fix Login Bug", "Take Photos for Gallery", and "Meeting with Client". The main area displays a card titled "Conduct User Testing" in the "TO Do" list. The card has the following details:

- Title:** Conduct User Testing
- Members:** AA
- Description:** Add a more detailed description...
- Buttons:** + Add, Labels, Dates, Checklist, Attachment
- Comments and activity:** IrtizaMain copied this card from "Conduct User Testing" in list DOING 16 minutes ago.

At the bottom of the card, there are links for Power-ups, Automations, and Comments.

## Activity 3:

<https://trello.com/invite/b/6945642e8e2a11a370fc5e8c/ATTI398285e915219cb9237c09739585b3daEBDF949C/web-dev-project>

# Lab 12

## INTRODUCTION TO VERSION CONTROL SYSTEM

### OBJECTIVES

**By the end of this lab, the student will be able to:**

- Understand the purpose and types of version control systems (LVCS, CVCS, DVCS).
- Install, configure, and initialize Git for any new project.
- Track changes using the Git workflow (modify → stage → commit).
- Connect a local repository to GitHub and push changes to a remote server.
- Apply Git commands confidently in real-world project workflows.

### BACKGROUND & CONCEPTS (How It Works)

Version control is essential for modern software development, enabling teams to track changes, collaborate efficiently, and safeguard progress. Without version control, edits to a project can be overwritten, lost, or become difficult to manage — especially in team environments.

Git is today's most widely used **Distributed Version Control System (DVCS)**. Unlike older systems where only one central server held the project history, Git ensures **every developer has a complete copy of the project**, including all versions. This makes collaboration easier and protects work in case of server failures.

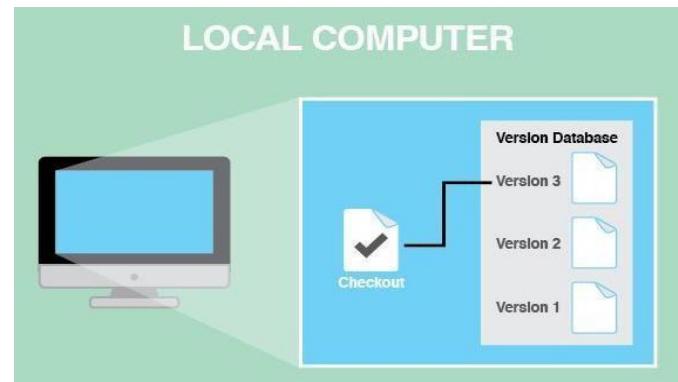


### Local Version Control System (LVCS)

A **Local Version Control System** is a simple version control method where **all version history is stored only on the user's local computer**. The system keeps track of changes to files by saving different versions to a local database.

### Key Characteristics

- Works **only on one machine**
- Stores versions in a **local directory or database**
- No online or team collaboration features
- Simple, fast, and easy to use
- Suitable for **individual developers** working alone on small projects



### How It Works

Every time you update a file, the LVCS saves a **new snapshot** of the file version locally. If needed, you can roll back to an older version.

Git works with three key **file states**:

1. **Modified** – You changed the file but haven't told Git yet.
2. **Staged** – You've marked the changed file for the next commit.
3. **Committed** – The changes are permanently saved into Git's repository.

These states correspond to three **locations**:

- **Working Directory** → where you edit files
- **Staging Area (Index)** → where Git prepares files
- **Git Directory (.git)** → where snapshots are stored

GitHub complements Git by providing a **remote repository hosting platform**. You can upload your code, collaborate with other developers, and track your project's full history online.

Centralized Version Control System (CVCS)	Decentralized / Distributed Version Control System (DVCS)
All versions are stored in <b>one central server</b> .	Each user has a <b>complete copy of the repository</b> (full history) on their machine.
SVN, Perforce, CVS	Git, Mercurial, Bazaar
Requires internet or network connection to commit and update.	Does <b>not</b> require internet for commits; syncing happens later.
Repository stored <b>only on server</b> .	Repository stored <b>on both server and each user's local machine</b> .
Slower (depends on server).	Faster (local operations).
Simple but depends heavily on the server.	Highly flexible; collaboration done via pushes/pulls.
<b>Yes</b> — if the server crashes, whole history may be lost.	<b>No</b> — every user has a full backup.
Central server controls access.	Multiple copies increase redundancy but require secure sharing.
Often complex and slow.	Easy, fast, and encouraged (especially in Git).
Small teams, tightly controlled environments.	Open-source projects, large teams, distributed contributors.
<p style="text-align: center;"><b>Central Version Control System</b></p>	<p style="text-align: center;"><b>Distributed Version Control System</b></p>

## STEP-BY-STEP LAB PROCEDURE

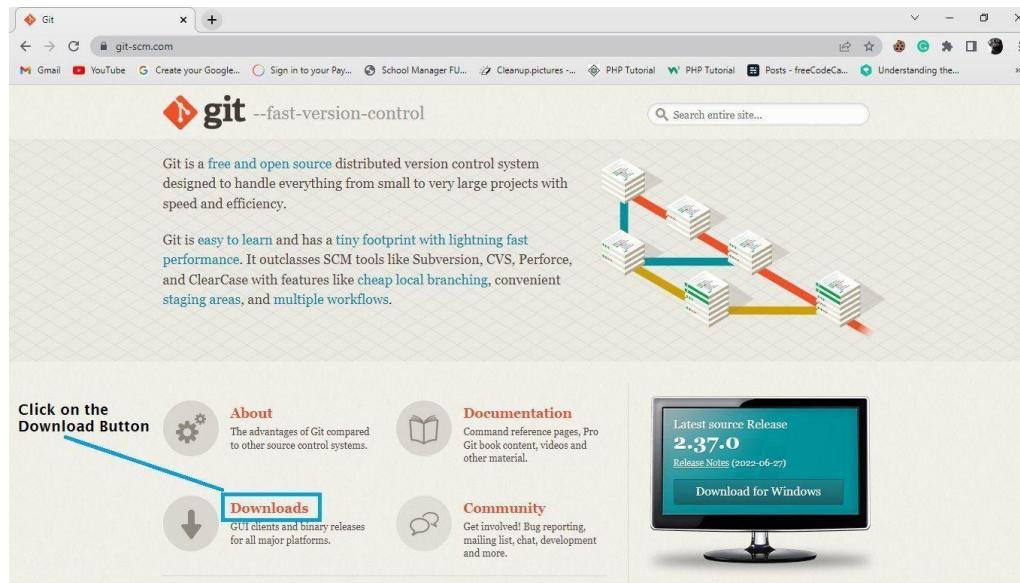
### Part 1: Prerequisites & Setup

#### Software Required

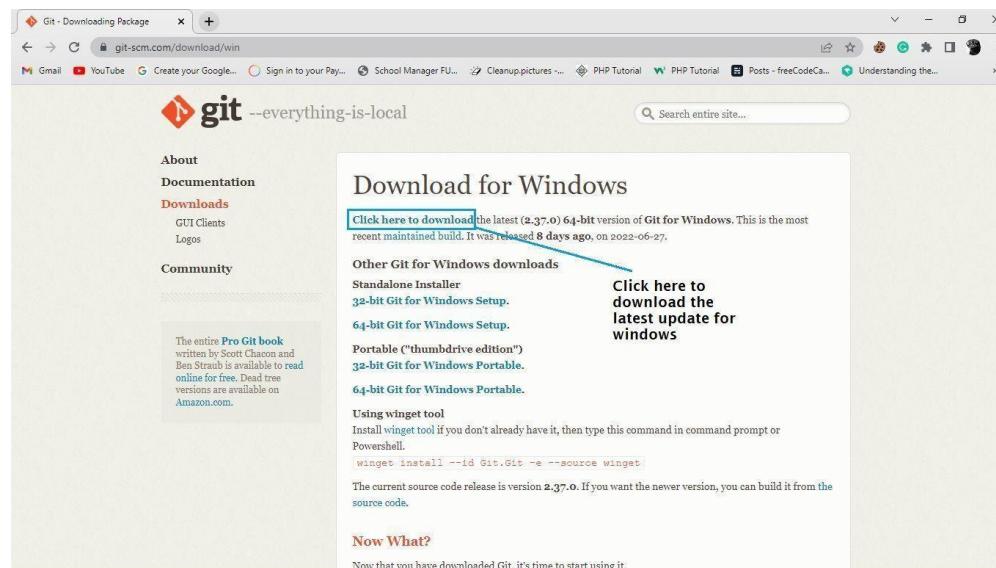
- Git (latest version): <https://git-scm.com>
- GitHub Account: <https://github.com>
- A code editor (VS Code recommended)
- Command Prompt / Git Bash

#### Step 1: Install Git

1. Go to [git-scm.com](https://git-scm.com)



2. Click Download for your operating system.



3. Run the installer and accept default settings.

## Step 2: Verify Installation

Open the terminal and run:

```
git --version
```

### Expected Output Example:

```
git version 2.45.1
```

If you see a version number — Git is installed successfully.

```
me@DEREK MINGW64 ~
$ git --version
git version 2.37.0.windows.1
```

## Step 3: Configure Git

Run the following commands with your details:

```
git config --global user.name "Your Name"
git config --global user.email "your@email.com"
git config --global init.defaultBranch main
```

```
me@DEREK MINGW64 ~
$ git config --global user.name "Derek Emmanuel"
me@DEREK MINGW64 ~
$ git config --global user.email derekemmanuel99@gmail.com
me@DEREK MINGW64 ~
$ git config --global init.default branch main
me@DEREK MINGW64 ~
$ |
```

### Purpose:

Git uses your name and email to label your commits. Changing the default branch ensures you start with **main** instead of the older **master**.

## Part 2: Main Procedure

### Phase 1: Initialize a Git Repository

#### Step 1: Create a Project Folder

Create a new folder called **git-lab-project** and open it in your terminal.

#### Step 2: Initialize Git

```
git init
```

### Expected Output:

```
Initialized empty Git repository in C:/.../git-lab-project/.git/
```

### Meaning:

Git is now tracking your project, and a **.git folder** has been created.

### Phase 2: Track and Commit Files

#### Step 1: Create a File

Create a file inside your folder:

```
echo "Hello Git!" > demo.txt
```

#### Step 2: Check Status

```
git status
```

**Expected:**

demo.txt is **untracked** → Modified State

## Step 3: Add File to Staging Area

```
git add demo.txt
```

**Now:** demo.txt is in the **staged** state.

## Step 4: Commit the File

```
git commit -m "First commit: added demo.txt"
```

**Now:**

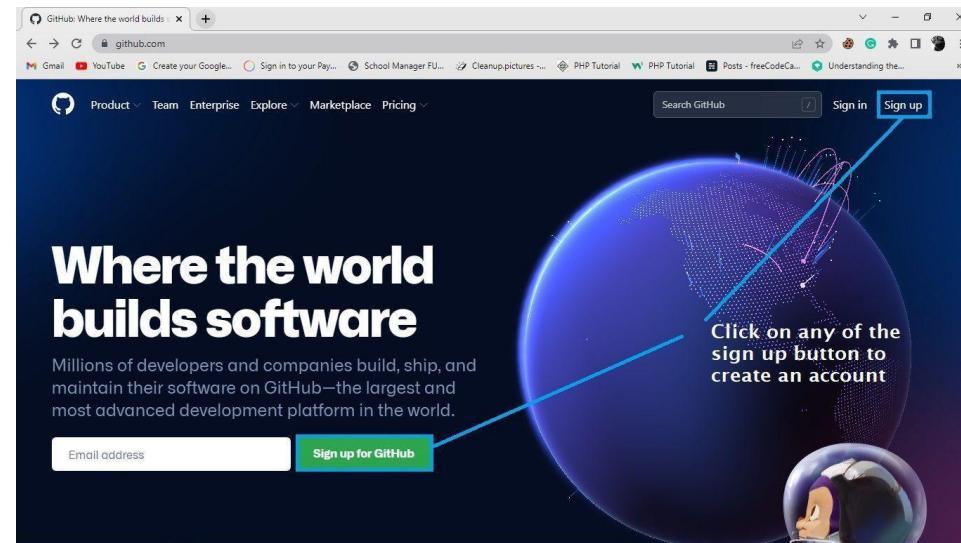
demo.txt is in the **committed** state.

## Phase 3: Connect to GitHub

## Step 1: Create a GitHub Repository

1. Log in at GitHub.com
2. Click **New Repository**
3. Name it **git-lab-project**
4. Choose **Public or Private**

Click **Create Repository**



## Step 2: Link Local Repo to GitHub

Copy the GitHub URL and run:

```
git remote add origin https://github.com/yourusername/git-lab-project.git
```

## Step 3: Push Your Code

```
git push -u origin main
```

**Expected Output:** Files uploaded to GitHub.

## Phase 4: Clone, Remove, Branching

### Clone a Repo

```
git clone https://github.com/yourusername/git-lab-project.git
```

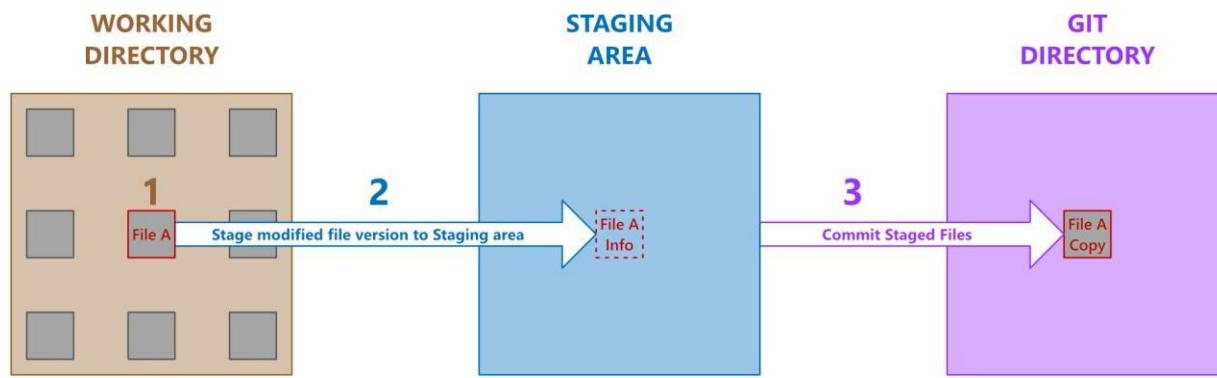
### Remove a File

```
git rm demo.txt
```

```
git commit -m "Removed demo.txt"
```

### Check Current Branch

```
git branch
```



## LAB ACTIVITY

Create three files:

- **index.html** (homepage)
- **about.html**
- **style.css**

Task:

1. Write *basic website content* inside each file (your name, bio, colors, simple headings).
2. Use **git add**, **git commit**, and **git status** to track the changes.
3. Push your mini website to GitHub.

Fun Twist:

Add a "secret section" in your HTML that says:

```
<!-- Hidden Developer Message: Git is awesome! -->
```

Activity 2 (Troubleshooting): Scenario:

A teammate says the file `contact.html` is missing from GitHub — but it exists on your computer.

Symptom:

git status shows:

modified: contact.html

But after pushing, GitHub still does NOT show the file.

Your Investigation Tasks:

1. Diagnose the problem: What step was skipped?
2. Fix it using Git commands (hint: staging is important!)
3. Write a short explanation of what went wrong.

Activity 3 (Mini-Project): Scenario:

Pretend you and a classmate are building a website called **TechTreasure Blog**.

Your Mission:

1. Create the following pages:
  - o home.html
  - o blog.html
  - o design-guide.md
2. Add real content—headings, text, and a simple style.
3. Commit each file separately with meaningful messages.
4. Push the project to GitHub.
5. Create a new branch called **feature-navbar** and add a website navigation bar.
6. Commit and push this branch.
7. Write a design brief (in design-guide.md) describing:
  - o Color palette
  - o Typography
  - o Layout strategy

Creative Twist:

Give your site a theme such as:

- Retro 90's web style
- Cyberpunk neon
- Minimalist Apple aesthetic
- Cartoon-style portfolio

## Outputs:

The screenshot shows a GitHub repository page for 'ICT-Lab-12-Final'. The repository is public and owned by 'Muhammad-Irtiza-2706'. The main branch is 'main'. There is 1 branch and 0 tags. The repository has 2 commits. The latest commit was made 5 minutes ago by '0bcde0e'. The commit message is 'Finished Lab 12'. Other files listed are '.gitattributes', 'Lab4IntroductiontoJavaScriptindex.html', and 'README.md'. The 'About' section indicates no description, website, or topics provided. The 'Code' section shows the repository's codebase. The 'About' section also lists activity metrics: 0 stars, 0 watching, and 0 forks. The 'Releases' section shows no releases published and a link to 'Create a new release'. The 'Packages' section shows no packages published and a link to 'Publish your first package'. The 'Languages' section shows HTML at 100.0%. The 'Suggested workflows' section is based on the tech stack. A footer at the bottom right says 'Jekyll using Docker' and 'Configure'.

The screenshot shows a GitHub commit interface for a repository named "ICT-Lab-12-Final". The commit is titled "Finished Lab 12" and was made by "Muhammad-Irtiza-2706" at 4 minutes ago. It contains one changed file, "Lab4IntroductiontoJavaScriptindex.html". The code in the file is as follows:

```

@@ -0,0 +1,70 @@
+ <!DOCTYPE html>
+ <html>
+ <head>
+   <title>Lab 4 Task</title>
+   <style>
+     body {
+       background-color: lightblue;
+       text-align: center;
+       font-family: Arial, sans-serif;
+     }
+     h1 {
+       color: darkblue;
+     }
+     button {
+       padding: 10px 20px;
+       font-size: 16px;
+       background-color: white;
+       border: 2px solid black;
+     }
+   </style>
+ </head>
+ <body>
+
+   <h1>ICT Lab 4: JS Introduction</h1>
+   <p><b>Group Members:</b> Ahad Abid & Muhammad Irtiza</p>
+   <hr>
+
+   <h2>Task: Checking Grades</h2>
+   <p>Check the Console for the loop and if-else results!</p>
+
+   <h2>Task: DOM Manipulation</h2>
+   <p id="demo">Original Text: Click the button to change me.</p>
+
+   <button onclick="myFunction()">Click Me</button>
+
+   <script>
+     // Task 1: Variables and Math
+   </script>

```

# Lab 13

## INTRODUCTION TO PROMPT ENGINEERING

### OBJECTIVES

**By the end of this lab, the student will be able to:**

- Understand the fundamental principles of prompt engineering and effective AI communication.
- Analyze how prompt structure, clarity, and context influence AI-generated responses.
- Implement various prompt engineering strategies such as role prompting, contextual prompting, constraint-based prompting, and chain-of-thought prompting.
- Evaluate and refine prompts to improve accuracy, relevance, and usefulness of AI outputs.
- Troubleshoot ambiguous or low-quality prompts by applying systematic improvement techniques.

### BACKGROUND & CONCEPTS (How It Works)

Prompt engineering is the practice of designing inputs (prompts) that guide an AI system—such as ChatGPT—to produce accurate, relevant, and high-quality outputs. Although modern AI models are highly capable, their responses depend heavily on the clarity, structure, and detail of the user's instructions.

#### Key Concepts:

##### 1. Role Assignment

Telling the AI *who it should act as* sets expectations and narrows context.

- Example: “*Act as a network engineer and explain...*”

##### 2. Context Inclusion

Providing background information avoids misinterpretation.

- Example: describing specifications, goals, constraints.

##### 3. Instruction Clarity

Clear, direct commands reduce ambiguity:

- Poor: “Tell me something about routing.”
- Good: “Explain OSPF routing in two paragraphs for a beginner.”

##### 4. Constraints

Adding limits (format, length, tone, style) produces more predictable results.

- Example: “Explain the concept in bullet points, maximum 5 lines.”

##### 5. Step-by-Step Reasoning

Chain-of-thought prompting encourages logical, structured responses.

- Example: “Think through the steps before providing the final answer.”

##### 6. Examples

Few-shot prompting allows the user to *show* expected patterns.

Why This Matters in the Lab?

As you proceed through the activities:

- You will observe how the **same question** produces **different responses** depending on prompt design.
- You will use strategies like **role prompting**, **context embedding**, and **output formatting** to improve results.
- Commands such as “*Rewrite*,” “*Summarize*,” “*Generate*,” “*Explain*,” “*Analyze*,” directly connect theory to the practical tasks.

## STEP-BY-STEP LAB PROCEDURE

### Part 1: Prerequisites & Setup

#### Software/Tools Needed:

- A modern web browser
- Access to ChatGPT, Claude, Gemini, or any large language model interface
- Stable internet connection

#### Optional Tools

- Text editor for drafting prompts (VS Code, Notepad++, etc.)
- Screen capture tool for documentation
- 

No installation is required other than access to an AI chatbot.

### Part 2: The Main Procedure

---

#### Phase 1: Introduction to Prompt Quality:

##### Step 1: Test a Basic Prompt

**Action:** Type the following prompt into your AI tool:

Explain clouds.

**Expected Output:** A vague, general explanation.

**Explanation:**

This prompt lacks context, format, and intent. The output will be general and may not meet your expectations.

##### Step 2: Improve the Prompt Using Clarity and Context

**Action:** Enter:

Explain how clouds form in the atmosphere. Use simple language suitable for a 12-year-old student and provide a real-world example.

**Expected Output:** Clear, age-appropriate explanation.

**Explanation:**

Adding context and constraints drastically improves quality.

#### Phase 2: Using Role Prompting

##### Step 3: Assign an Expert Role

**Action:**

Act as a meteorology instructor. Explain the process of cloud formation using technical terminology suitable for university students.

**Expected Output:**

More structured, technical explanation tailored for the role.

**Explanation:**

Assigning a role changes how the AI frames its knowledge and communication style.

**Phase 3: Using Formatting Constraints**

Step 4: Provide Specific Output Structure

**Action:**

Explain the cloud formation process in:  
 - 3 bullet points  
 - each bullet points no longer than 15 words

**Expected Output:**

Three concise bullets that follow your constraints.

**Explanation:**

Constraining length and format ensures predictable, uniform output.

**Phase 4: Using Step-by-Step Reasoning (Chain-of-Thought)**

Step 5: Encourage Logical Thinking

**Action:**

Think step-by-step and explain the sequence of events that lead to cloud formation, then provide a final summarized explanation in one paragraph.

**Expected Output:**

A detailed step-by-step breakdown followed by a summary.

**Explanation:**

Chain-of-thought prompting enhances depth and accuracy.

**Phase 5: Comparative Prompt Analysis**

Step 6: Compare Two Prompt Versions

**Action:**

Prompt A:

Explain photosynthesis.

Prompt B:

Explain photosynthesis in two stages:

1. Light-dependent reactions
2. Light-independent Calvin cycle

Use clear section headings and a diagram description.

**Expected Output:**

Prompt B will produce a clearer, more structured, more useful output.

**Explanation:**

This comparison shows how detailed instructions reduce guesswork for the model.

## LAB ACTIVITY

### **Activity 1: Scenario:**

You're helping a small bakery called **Moonlight Bakes** create content for their new website. They bake cupcakes, pastries, and custom cakes.

Task:

Use prompt-engineering techniques to generate **homepage content** for Moonlight Bakes.

Your prompt must include:

- A **role** (e.g., “Act as a professional website copywriter specializing in bakery brands.”)
- A **clear audience** (e.g., families, dessert lovers, party planners, etc.)
- Specific **content format**:
  - Website tagline (max 8 words)
  - Short welcome paragraph
  - A 3-item feature list (cupcakes, pastries, custom cakes)
- A **tone** (e.g., cozy, playful, premium, luxury, energetic, etc.)
- A **style constraint** (max 120 words)

Hint:

Think: branding + clarity + emotion + structure.

### **Activity 2: Scenario:**

A student tried to generate content for a fashion website using this prompt:

Write content for a fashion website.

The AI produced:

- Generic statements
- No brand personality
- No target audience
- No product highlights
- No call to action

Your Mission:

1. **Diagnose the Problem:**

List at least **three things missing** (e.g., tone, target audience, brand type, format, etc.)

2. **Rewrite the Prompt Using Prompt Engineering Techniques:**

Your improved prompt must include:

- Role prompting
- Context about the brand (you invent the brand!)
- Formatting constraints
- A clear output structure (e.g., tagline, About Us, product section, CTA)
- Optional fun constraints (e.g., “must sound like it was written by a Gen-Z trendsetter”)

**3. Explain Why Your Version Is Better:**

One paragraph, simple and clear.

**Activity 3: Scenario:**

You work in a digital agency. A new client wants a fresh website for their **Eco-Friendly Travel Company** named **Green Steps Adventures**. They want you to prepare a **full design brief** using AI.

Your Task:

Create a **multi-part advanced prompt** that instructs the AI to produce a complete design brief, including:

**1. Brand Overview**

Mission, values, tone, personality.

**2. Target Audience Description**

(Backpackers, adventure lovers, eco-conscious travelers, etc.)

**3. Website Structure Proposal**

Minimum 5 pages (Home, Destinations, Sustainability, Booking, Blog, Contact).

**4. Content Samples**

- Homepage hero text (max 20 words)
- A featured destination card description
- A “Why Travel Green?” section

**5. Visual Style Guide**

- Color palette recommendations
- Typography suggestions
- Imagery style (descriptive)

**6. A Call-to-Action Strategy**

(Newsletter, booking, trip planner, etc.)

Fun Requirement:

Add one creative twist to your prompt—such as:

- “Write it as if it’s for a Netflix documentary website.”
- “Give it a magical fairytale tone, but keep the professional structure.”
- “Make the brief follow the style of a minimalist Apple product page.”
- “Make it sound like a travel guide narrated by David Attenborough.”

Your choice!

Deliverable:

Submit:

- Your final prompt
- The AI-generated design brief

## Activity 1: Homepage Content for Moonlight Bakes

### Scenario:

Moonlight Bakes is a small bakery that sells cupcakes, pastries, and custom cakes. The task is to generate homepage content for their new website using prompt-engineering techniques.

### Prompt Used:

Act as a professional website copywriter specializing in bakery brands. Write homepage content for a small bakery called *Moonlight Bakes*. The target audience includes families, dessert lovers, and party planners. Use a cozy and warm tone. The content must include a website tagline (maximum 8 words), a short welcome paragraph, and a 3-item feature list highlighting cupcakes, pastries, and custom cakes. Keep the content under 120 words.

### Generated Homepage Content:

#### **Tagline:**

Freshly Baked Happiness Every Day

#### **Welcome Paragraph:**

Welcome to Moonlight Bakes, where every dessert is made with love and care. We believe in creating sweet moments with fresh ingredients and beautiful designs for every occasion.

#### **Our Specialties:**

- Delicious cupcakes in a variety of flavours
- Freshly baked pastries made daily

Custom cakes for birthdays and special events

## Activity 2: Improving a Weak Prompt

### Given Prompt

“Write content for a fashion website.”

### Problems with the Given Prompt

1. No target audience is mentioned.
2. No brand identity or tone is specified.
3. No content format or structure is given.
4. No product highlights or call to action are included.

### Improved Prompt Using Prompt-Engineering Techniques

Act as a professional fashion website copywriter. Write homepage content for a modern fashion brand called *UrbanVibe*. The target audience is young adults aged 18–30. Use a trendy and energetic tone. The content should include a catchy tagline, an About Us section, a product highlights list, and a clear call to action. The writing style should sound like it was written by a Gen-Z trendsetter.

### Why This Version Is Better:

My improved prompt is better because it clearly defines the role of the AI, the brand identity, the target audience, and the required content structure. It provides specific instructions about tone, format, and style, which helps the AI generate focused and meaningful content instead of generic text. By including clear sections and a call to action, the output becomes more engaging, relevant, and useful for a real website.

## Activity 3: AI-Generated Website Design Brief

### Scenario

You work in a digital agency. A new client wants a fresh website for their eco-friendly travel company named **Green Steps Adventures**. You are required to create a multi-part advanced prompt that instructs AI to generate a complete design brief.

### Final Prompt Used

Act as a professional web designer and brand strategist. Create a complete website design brief for an eco-friendly travel company called *Green Steps Adventures*. The brand focuses on sustainable tourism, nature conservation, and responsible travel. The target audience includes backpackers, adventure lovers, and eco-conscious travellers.

The design brief must include the following sections:

1. **Brand Overview**
  - Mission, values, tone, and personality
2. **Target Audience Description**
3. **Website Structure Proposal**
  - Minimum 5 pages: Home, Destinations, Sustainability, Booking, Blog, Contact
4. **Content Samples**
  - Homepage hero text (maximum 20 words)
  - One featured destination card description
  - A “Why Travel Green?” section
5. **Visual Style Guide**
  - Colour palette recommendations
  - Typography suggestions
  - Imagery style
6. **Call-to-Action Strategy**
  - Booking, newsletter, or trip planner

### Creative Twist:

#### 1. Brand Overview

Green Steps Adventures promotes responsible travel that protects nature and supports local communities. The brand tone is calm, inspiring, and educational, with a strong focus on sustainability and exploration.

#### 2. Target Audience

The website is designed for eco-conscious travellers, backpackers, and adventure seekers who care about nature, wildlife, and ethical tourism.

#### 3. Website Structure

- Home
- Destinations
- Sustainability
- Booking
- Blog
- Contact

#### 4. Content Samples

##### **Homepage Hero Text:**

Explore the world while protecting it

##### **Featured Destination Card:**

Discover lush forests, quiet trails, and local cultures that thrive through sustainable tourism.

##### **Why Travel Green?**

Traveling responsibly helps preserve ecosystems, reduce pollution, and create positive impact for future generations.

#### 5. Visual Style Guide

- **Colours:** Earth green, sky blue, sand beige
- **Typography:** Clean sans-serif fonts for readability
- **Imagery:** Nature photography, wildlife, real travel experiences

#### 6. Call-to-Action Strategy

Encourage users to book eco-friendly trips, subscribe to a sustainability newsletter, or plan customized green adventures.

# Lab 14

## OPEN ENDED LAB

### Objective

To design and develop a responsive single-page website by integrating HTML5, CSS, JavaScript, and AI-generated content, while mastering prompt engineering techniques and GitHub publishing workflow.

### Learning Outcomes

Upon completion, students will be able to:

- Design and structure semantic HTML5 documents
- Implement CSS styling using external, internal, and inline methods
- Apply basic DOM manipulation using JavaScript
- Engineer effective AI prompts for targeted content generation
- Integrate multiple web technologies into a functional website
- Deploy and manage projects using GitHub

### Requirements

#### 1. Project Selection

Choose **ONE** website category:

- Restaurant Menu & Information Portal
- Product Showcase E-commerce Site
- Professional Service Business Website
- Event Promotion Page

#### 2. Technical Specifications

##### HTML Structure

- Semantic HTML5 doctype and document structure
- Header with navigation menu
- Minimum of three content sections
- Contact form with validation
- Footer section
- Proper semantic tags (header, nav, main, section, footer)

##### CSS Implementation

- External CSS: Primary styling in separate stylesheet
- Internal CSS: Page-specific styles in “<style>“ tags
- Inline CSS: Single element styling demonstration
- Required properties: borders, backgrounds, margins, padding, text formatting

##### JavaScript Functionality

- One interactive feature using DOM manipulation
- Form validation or content modification
- Event handling implementation

## GitHub Deployment

- Repository creation and initialization
- Proper file structure organization
- GitHub Pages activation for live deployment
- Professional README.md documentation

## 3. AI Content Generation

Develop and execute prompts for:

- Business/personal brand identity
- Section headings and body content
- Product/service descriptions
- Contact information and details

## Deliverables

### Required Files:

- “index.html” (main website file)
- “styles.css” (external stylesheet)
- “script.js” (JavaScript functionality)
- “prompts.txt” (AI prompts documentation)
- “README.md” (project documentation)

### GitHub Requirements:

- Public repository with descriptive name
- Proper file structure organization
- Active GitHub Pages deployment
- Professional README with:
  - Project description
  - Technologies used
  - Setup instructions
  - Live demo link

## Submission Guidelines

1. Push all code to GitHub repository
2. Ensure GitHub Pages is active and working
3. Submit GitHub repository link through learning portal
4. Include working live demo link in submission
5. Ensure all files are properly committed

## GitHub Setup Instructions

### 1. Repository Creation

**Create new repository on GitHub.com**

**Clone repository locally**

**git clone <https://github.com/yourusername/your-repo-name.git>**

**cd your-repo-name**

## 2.File Structure

```
your-repo-name/  
    └── index.html  
    └── styles.css  
    └── script.js  
    └── prompts.txt  
    └── README.md  
    └── assets/  
        └── images/  
        └── fonts/
```

## 3. Deployment Steps

1. Commit all files to main branch
2. Go to Repository Settings → Pages
3. Select "Deploy from branch" → main branch
4. Save and wait for deployment
5. Access live site at: "<https://yourusername.github.io/your-repo-name>"

Website:



This image shows the 'Signature Dishes' section of the Bella Cucina website. At the top left is the 'Bella Cucina' logo. The top navigation bar includes 'Home', 'Menu', 'About', and 'Reserve' links, along with a 'Cart' button showing '0'. Below the navigation is a large, faint watermark-like image of a chef in a kitchen. Centered on the page is the heading 'Our Menu' in red text, followed by 'Signature Dishes' in large, bold black text. A subtitle 'Handcrafted with love, served with passion' is displayed below the main heading. At the bottom of the section are four category buttons: 'All Dishes' (red), 'Appetizers' (white), 'Main Courses' (white), and 'Desserts' (white). Below these buttons are three images of dishes: a wooden board with two slices of bruschetta labeled 'Popular', a plate of fried calamari rings with dipping sauce labeled 'Vegetarian', and a plate of Caprese salad labeled 'Vegetarian'.

### Bella Cucina

 Bella Cucina

★★★★★ 4.8

Chef's Choice



**Fettuccine Alfredo** \$22

Creamy fettuccine pasta tossed with parmesan cheese and grilled chicken breast

★★★★★ 4.7

★★★★★ 4.6

Popular



**Lasagna Bolognese** \$24

Layered pasta with rich meat sauce, béchamel, and melted cheese baked to perfection

★★★★★ 4.9

★★★★★ 4.9

Premium



**Osso Buco** \$38

Slow-braised veal shanks in white wine, served with creamy saffron risotto

★★★★★ 5.0

### Bella Cucina

 Bella Cucina

★★★★★ 4.7

Vegetarian



**Margherita Pizza** \$18

Wood-fired pizza with San Marzano tomatoes, fresh mozzarella, and basil leaves

★★★★★ 4.8

★★★★★ 4.9

Popular



**Tiramisu** \$10

Classic Italian dessert with espresso-soaked ladyfingers and mascarpone cream

★★★★★ 4.9

★★★★★ 5.0



**Panna Cotta** \$9

Silky vanilla-infused cream topped with fresh berry compote and mint

★★★★★ 4.7

202 | Page


**Bella Cucina**

[Home](#)
[Menu](#)
[About](#)
[Reserve](#)

Cart 0

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Our Story

## Bringing Italy to Your Table

Founded in 2010, Bella Cucina has been serving authentic Italian cuisine with a passion for tradition and quality. Our chefs, trained in the heart of Italy, bring generations of culinary expertise to every dish.

We source only the finest ingredients, from imported Italian olive oil to locally-grown organic produce, ensuring each meal is a celebration of flavor and authenticity.





[Expert Chefs](#)

[Fresh Ingredients](#)

[Award Winning](#)

Trained in Italy

Daily sourced

5-star rated





**Bella Cucina**

[Home](#)
[Menu](#)
[About](#)
[Reserve](#)

Cart 0

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Get in Touch

### Reserve Your Table

Join us for an unforgettable Italian dining experience. Book your table today!

**Location**  
 Islamabad, Pakistan

**Phone**  
 03372485364

**Email**  
 ahmedmoin832@gmail.com

**Hours**  
 Mon-Sun: 11:00 AM - 11:00 PM

**Full Name \***

**Email Address \***

**Phone Number \***

**Number of Guests \***

**Reservation Date \***

**Preferred Time \***

**Special Requests**  
Dietary restrictions, special occasions, seating preferences...

[Reserve Table →](#)

**Git Hub Link:**

<https://github.com/ahmedmoin832/bella-cucinaa.git>