Experiment- 1.1

**Aim**: To write a program to explain the working of lists. Note: It should have ordered list, unordered list, nested list and order list in a unorder list and definition list.

**Description**:

**Ordered List (<ol>)**

Displays items in a specific order (numbered: 1, 2, 3… or Roman numerals, etc.).
Useful when the sequence of items matters.

**Unordered List (<ul>)**

Displays items with bullet points.
Sequence doesn't matter, items are just grouped together.

**Nested List**

A list inside another list (either <ul> or <ol>).

**Ordered List inside Unordered List**

A special case of nesting where an **ordered list (<ol>)** is placed inside an **unordered list (<ul>)**.
Often used to show categories with step-by-step details inside.

**Definition List (<dl>)**

Used to define terms with their descriptions.
Uses <dt> (definition term) and <dd> (definition description).

**Program**:

```
<html>
<head><title>HTML lists</title>
</head>
<body bgcolor ="pink">
          <h1>24B11CS005</h1>
          <h1>Demonistration of Lists</h1>
          <h2>Ordered lists</h2>
<ol>
       <li>First Item</li>
       <li>Second Item</li>
       <li>Third Item</li>
</ol>
<h2>Unordered lists</h2>
<ul>
      <li>First Item</li>
      <li>Second Item</li>
      <li>Third Item</li>
</ul>
<h1>3.Unorder list inside Order List</h1>
<ol>
<li>Fruits
  <ul>
    <li>Mango</li>
    <li>Grapes</li>
  </ul>
</li>
<li>Flower>
```

```
<ul>
     <li>Rose</li>
     <li>Jasmine</li>
   </ul>
</li>
</ol>
<h1>4.Order inside Unorder list</h1>
<ul>
<li>Fruits
  <ol>
    <li>Mango</li>
    <li>Grapes</li>
  </ol>
</li>
<li>Flowers
   <ol>
     <li>Rose</li>
     <li>Jasmine</li>
   </ol></li>
</ul>
<h1>Definition List</h1>
<dl>
   <dt>HTML</dt>
   <dd>HTML is markup Language</dd>
</dl>
</body>
</html>
```

Output:


**Result**:

Experiment- 1.2

**Aim**: Write an HTML program to explain the working of hyperlinks using the <a> tag and href,
target Attributes.Note: Use text to link https://www.aec.edu.in/
Use image to link https://www.aec.edu.in/?p=Gallery

**Description:**

**HTML Links - Hyperlinks**

HTML links are hyperlinks.
You can click on a link and jump to another document.
When you move the mouse over a link, the mouse arrow will turn into a little hand.
Note: A link does not have to be text. A link can be an image or any other HTML element!

**HTML Links - Syntax**

The HTML <a> tag defines a hyperlink. It has the following syntax:
<a href="*url*">*link text*</a>
The most important attribute of the <a> element is the href attribute, which indicates the link's destination.
The link *text* is the part that will be visible to the reader.
Clicking on the link text will send the reader to the specified URL address.

**Program**:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Hyperlink Example</title>
</head>
<body>
  <h1>Demonstrating Hyperlinks in HTML</h1>
  <!-- Text Hyperlink -->
  <h2>1. Text Link using</h2>
  <p>
    Visit <a href="https://erp.adityauniversity.in/"</a>.
  </p>
  <!-- Image Hyperlink -->
  <h2>2. Image Link using &lt;a&gt; and href</h2>
  <p>
    Click the image below to visit the <strong>Gallery Page</strong>:
  </p>
  <a href="https://www.aec.edu.in">
</body>
</html>
```

Output:

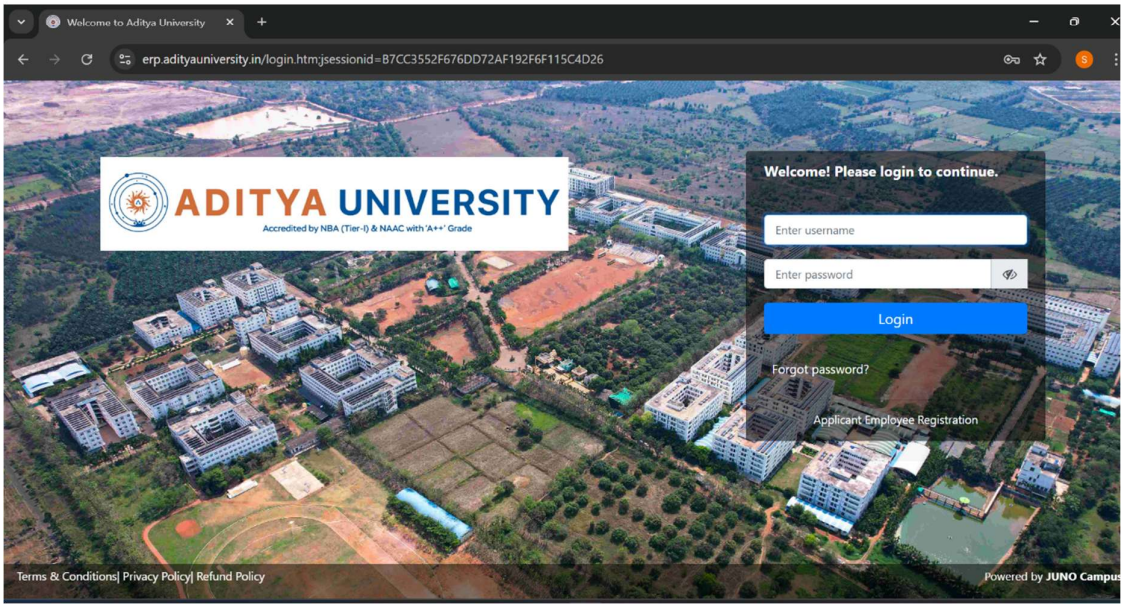
# Demonstrating Hyperlinks in HTML

## 1. Text Link using

Visit .

## 2. Image Link using <a> and href

Click the image below to visit the **Gallery Page**:




**Result**:

**Experiment- 1.3**

**Aim**: Create a HTML Document that has your image and your friend image with height and width when we click their image it should navigate to their respective profile.

Description:

**<img> Tag**

Used to display an image in HTML.

Attributes:

src : location of the image file.

alt : alternative text if image is not available.

height & width : set the dimensions of the image.

**<a> Tag (Anchor)**

Used to create hyperlinks in HTML.

Attribute:

href : specifies the URL to navigate to.

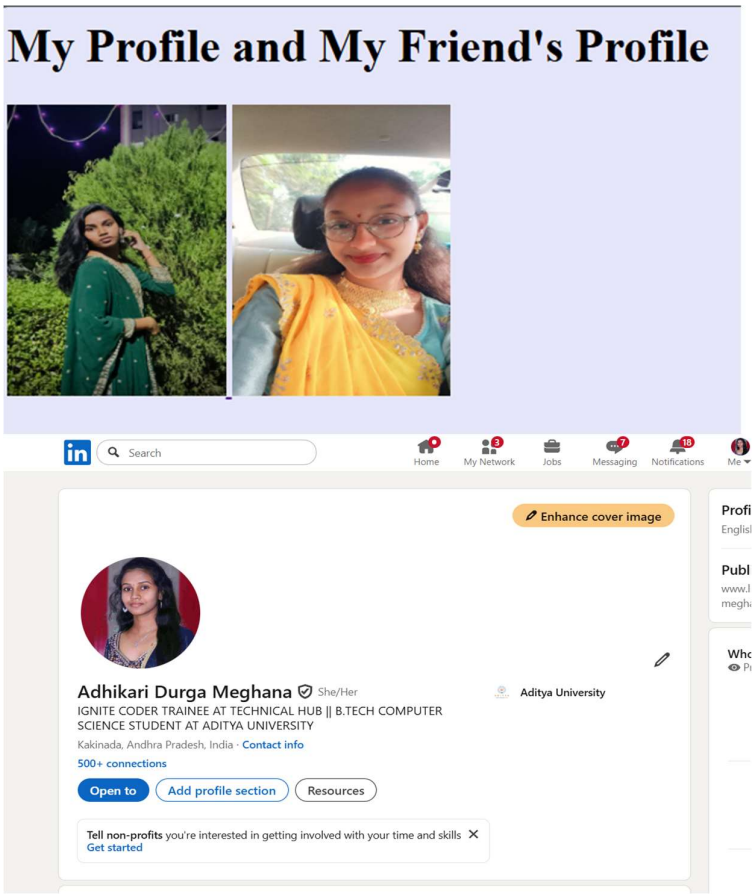
**Combining <a> and <img>**

By placing an <img> inside an <a>, the image becomes clickable and acts like a link. This lets us click on the picture and open a profile page.

**Program**:

```
<html>
<body bgcolor="lavender">

<h1>My Profile and My Friend's Profile</h1>

<!-- Your Image-->
<a href="https://www.linkedin.com/in/adhikari-durga-meghana-54a79a32b/"_blank">
<img src="C:\Users\Asus\OneDrive\Documents\meg.jpg"alt="Your Profile"
width="150" height="200">
</a>

<!-- Friends Image -->
<a href="https://www.linkedin.com/in/kiranmai-galla-464157326/"_blank">
<img src="C:\Users\Asus\OneDrive\Documents\ki.jpg" alt="Friend's
Profile" width="150" height="200">
</a>

</body>
</html>
```

Output:


My Profile and My Friend's Profile
Search
Home
My Network
Jobs
Messaging
Notifications
Me
Enhance cover image
Adhikari Durga Meghana
She/Her
IGNITE CODER TRAINEE AT TECHNICAL HUB || B.TECH COMPUTER SCIENCE STUDENT AT ADITYA UNIVERSITY
Kakinada, Andhra Pradesh, India · Contact info
500+ connections
Aditya University
Open to
Add profile section
Resources
Tell non-profits you're interested in getting involved with your time and skills
Get started

**Result**:

**Experiment- 1.4**

**Aim**: To write a HTML program in such a way that rather than placing large images on a page the preferred image is to be thumbnail. Like to 100*100 pixels each thumbnail image is link to full sized version of the image create an image gallery using this technique.

**Description**:

**Thumbnail Images**

Small versions of images (e.g., 100×100 pixels).

Load quickly and give a preview without using too much bandwidth.

**Full-Size Images**

The original, larger versions of images.

Opened when a user clicks on a thumbnail.

**How It Works in HTML**

Use <a> (anchor) tag to link to the full-size image.

Inside <a>, place <img> with width and height set to **100×100** (thumbnail size).

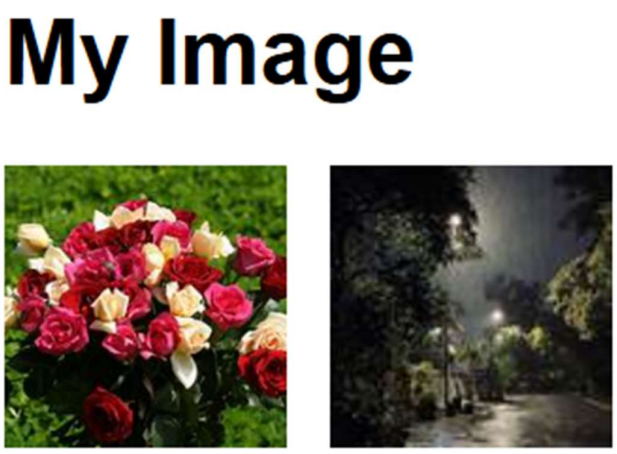
Clicking the thumbnail opens the original full image.

**Program**:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
<title>Thumb Nail image</title>
<style>
body{
    font-family: Arial, sans-serif;
    text-align: left;
}
.gallery{
   display: flex;
   flex-wrap: wrap;
   justify-content: left;
   gap: 15px;
   margin-top: 20px;
}
.gallery a img{
   width: 100px;
   height: 100px;
   object-fit: cover;
   border: 2px; solid #ccc;
   border-radius: 8px
   transition: transform 0.3s;
}
.gallery a img: hover{
      transform: scale(1.1)
      border-color: #666;
}
</style>
```

```
</head>
<body>
  <h1>My Image</h1>
  <div class="gallery">
<a href="C:\Users\Dell\OneDrive\Desktop\roses.jpeg"target=_blank>
 <img src="C:\Users\Dell\OneDrive\Desktop\roses.jpeg" "
</a>
<a href="C:\Users\Dell\OneDrive\Desktop\rain.jpeg" target=_blank>
 <img src="C:\Users\Dell\OneDrive\Desktop\rain.jpeg"
</a>
</body>
</html>
```

Output:




**Result**:

**Experiment- 2.1**

**Aim**: To write a HTML program to explain the working of tables (use tags: <table>, <tr>, <th>, <td>,and attributes: border, rowspan, colspan)

**Description**:

1. **<table>**
   Defines a table.
2. **<tr> (Table Row)**
   Defines a row inside the table.
3. **<th> (Table Header)**
   Defines a header cell (bold and centered by default).
4. **<td> (Table Data)**
   Defines a normal data cell.
5. **Attributes:**
   **border** : specifies the border thickness of the table.
   **rowspan** : merges cells **vertically** (one cell spans multiple rows).
   **colspan** : merges cells **horizontally** (one cell spans multiple columns).

**Program**:

```
<html>
<head>
<title>About...</title>
</head>
<body bgcolor="Yellow">
<h1>Hii</h1>
<h3>24B11CS005</h3>
<div>
<p>Helooo Worlddd....</p>
</div>
<table width="100" height="100" bordercolor="red" border="2px" cellpadding="10"
cellspacing="0" >
  <tr>
    <th><i>SNO</i></th>
    <th><i>Name</i></th>       <!--For header-->
    <th><i>Age</i></th>
  </tr>

  <tr  align="center">
    <td>1</td>
    <td><b>Megha</b></td>
    <td>18</td>
   </tr>

   <tr align="center">
    <td>2</td>
    <td>Jhanuu</td>
    <td>15</td>
   </tr>
```

```
</table><br>
<h2>Thank you</h2>
</body>
</html>
```

Output:


**Result**:

**Experiment- 2.2**

**Aim**: To write a HTML program to explain the working of tables for prepare the timetable Use the <caption> tag to set the caption to the table and also use cellspacing, rowspan .

**Description**:

- **<caption>**: Adds a heading/caption for the table, usually shown above the table.
- **rowspan**: Attribute that allows a single cell to stretch across multiple rows. Useful when a subject/class period takes more than one slot.
- **Columns** for days (Monday, Tuesday, …).
- **Rows** for periods (Period 1, Period 2, …).
- **rowspan** to merge cells if a subject spans multiple periods.

**Program**:

```
<!DOCTYPE html>
<html>
<head>
<center>
<titlee]>College Timetable</title>
</head>
<body>
<h2>Weekly Class Timetable</h2>
<table border="2" cellspacing="5" cellpadding="10" bgcolor="Lavender" align="center">
<caption><strong>Class Timetable - CSE Department</strong></caption>
<tr>
<th>Day</th>
<th>9:00 - 10:00</th>
<th>10:00 - 11:00</th>
<th>11:00 - 12:00</th>
<th>12:00 - 1:00</th>
<th>1:00 - 2:00</th>
<th>2:00 - 3:00</th>
<th>3:00 - 4:00</th>
</tr>
<tr>
<td>Monday</td>
<td>Maths</td>
<td>Physics</td>
<td>Chemistry</td>
<td rowspan="5" style="text-align:center;">Lunch Break</td>
<td colspan="2">Computer Lab</td>
<td>English</td>
</tr>
<tr>
<td>Tuesday</td>
<td>English</td>
<td>Maths</td>
<td>Physics</td>
<td>Chemistry</td>
<td>Worshop</td>
```

```
<td>Sports</td>
</tr>
<tr>
<td>Wednesday</td>
<td colspan="3">Seminar</td>
<td>Physics</td>
<td>Maths</td>
<td>English</td>
</tr>
<tr>
<td>Thursday</td>
<td colspan="3">Seminar</td>
<td>Physics</td>
<td>Maths</td>
<td>English</td>
</tr>
<tr>
<td>Friday</td>
<td colspan="3">Seminar</td>
<td>Physics</td>
<td>Maths</td>
<td>English</td>
</tr>
</table>
</body>
</html>
```

Output:

College Timetable

**Weekly Class Timetable**

**Class Timetable - CSE Department**

| Day | 9:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 1:00 | 1:00 - 2:00 | 2:00 - 3:00 | 3:00 - 4:00 |
|---|---|---|---|---|---|---|---|
| Monday | Maths | Physics | Chemistry | Lunch Break | Computer Lab | | English |
| Tuesday | English | Maths | Physics | | Chemistry | Worshop | Sports |
| Wednesday | Seminar | | | | Physics | Maths | English |
| Thursday | Seminar | | | | Physics | Maths | English |
| Friday | Seminar | | | | Physics | Maths | English |

**Experiment- 2.3**

**Aim**: To write HTML program to explain the working of forms by designing registration form.

Description:

Forms in HTML are created using the <form> tag. They allow users to enter data that can be sent to a server for processing (like registration, login, surveys, etc.).

Important form elements:

- **<input>** → Used for different types of fields (text, email, password, number, etc.)
- **<label>** → Provides a caption for each input field
- **<textarea>** → For multi-line text (e.g., address)
- **<select>** with <option> → For dropdown lists
- **<input type="radio">** → For single-choice options
- **<input type="checkbox">** → For multiple-choice options
- **<input type="submit">** → To submit the form
- **<input type="reset">** → To clear the form

Program:

```
<html>
<head>
<title>Form</title>
</head>
<body bgcolor=pink align="center">
<h1>Registration Form</h1>
<form method="POST" action="1.php">
username:
<input type="text" name="username" placeholder="Enter Username"><br><br>
password:
<input type="password" name="password" placeholder="Enter Password"><br><br>
Gender:
Male
<input type="radio" value="Male" name="gender" id="male">Male
Female
<input type="radio" name="gender" value="Female"><br>
Languages Known:

<input type="checkbox" name="C program" >C program
<input type="checkbox" name="CPP" >CPP
<input type="checkbox" name="HTML" >HTML<br><br>
<label for="dob">Date of birth:</label>
<input type="date" id="dob" name="dob"><br><br>
<input type="submit" Reset="submit">

</form>

</body>

</html>
```

Output:


Result:

Experiment- 2.4

Aim: To write a HTML program to explain the working of frames such that page is to be divided into 3 parts on either direction first frame is image second frame is paragraph and third frame is hyperlink use no frame attribute such that image is fixed.

Description:

**<frameset>** → Replaces <body> when using frames. Defines how the screen is divided (rows or columns).

**<frame>** → Loads a separate HTML file or content in each section.

**rows** → Divides the page horizontally.

**cols** → Divides the page vertically.

**<noframes>** → Provides alternative content for browsers that do not support frames

**Program:**

```
<html>
<head>
<title>Frames</title>
</head>
<frameset cols="33%,33%,34%">
   <frame src="C:\Users\Asus\OneDrive\Documents\pp.jpg">
   <frame src="C:\Users\Asus\OneDrive\Documents\WhatsApp Image 2025-09-26 at 20.21.51_03b14c4d.jpg">
   <frame src="C:\Users\Asus\OneDrive\Documents\meg.jpg">
  <noframes>
    <body>
  <p>Please update your browser</p>
     </body>
  </noframes>
</frameset>
</html>
```

**Output:**

Result:

Experiment-3.1

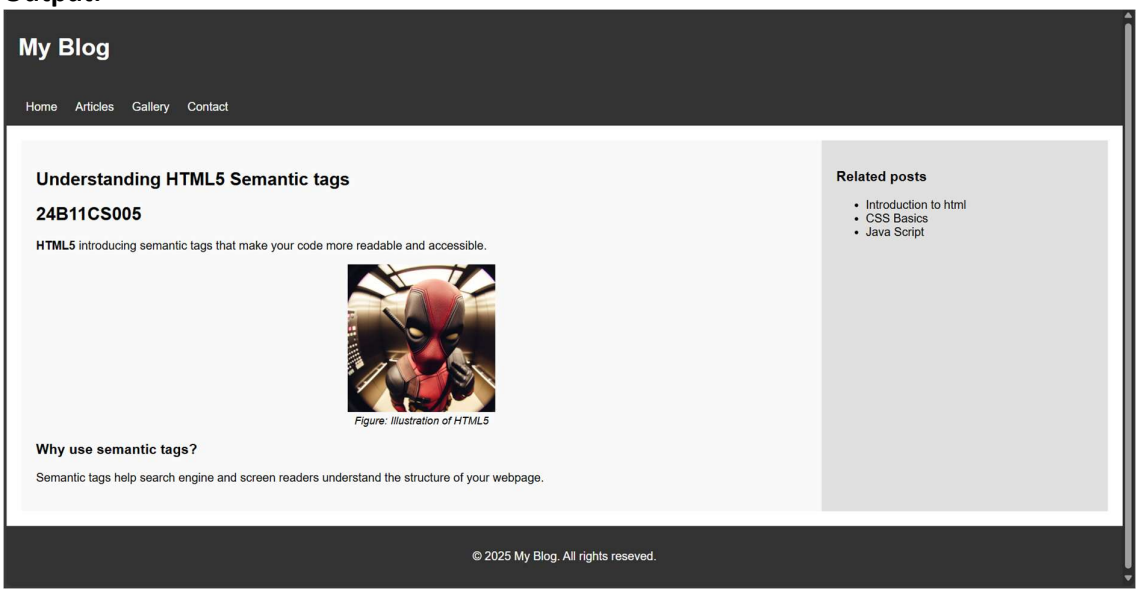
AIM: HTML Tables, Forms and Frames
a. Write a HTML program, that makes use of <article>, <aside>, <figure>, <figcaption>, <footer>, <header>, <main>, <nav>, <section>, ,  tags.
DESCRIPTION:
In HTML5, semantic elements are used to give meaning to different parts of a webpage. They help browsers, developers, and screen readers understand the structure of the content better.
Most of these elements are placed inside the <body> tag because they represent the visible content of the webpage.
**Program:**

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <title>HTML5 Semantic tags</title>
   <style>
      body{
         font-family: Arial, sans-serif;
         margin:0;
         }
       header, nav, footer
       {
       background-color:#333;
       color: white ;
       padding:1em;
       }
       nav a{
          color: white;
          margin: 0 10px;
          text-decoration: none;
        }
        main{
         display: flex;
         padding:20px;
        }
      article{
      flex: 3;
      padding: 20px;
      background-color:#f9f9f9;
      }
      aside{
      flex: 1;
      padding: 20px;
      background-color:#e0e0e0;
      }
```

```
figure{
margin:0;
text-align: center;
}
figcaption{
font-style: italic;
font-size: 0.9em;
}
footer{
text-align:center;
}
</style>
<head>
<body>
<header>
  <h1>My Blog</h1>
</header>
<nav>
  <a href="#">Home</a>
  <a href="#">Articles</a>
  <a href="#">Gallery</a>
  <a href="#">Contact</a>
</nav>
<main>
<article>
  <h2>Understanding HTML5 Semantic tags</h2>
   <h2>24B11CS005</h2>
  <p><span style="font-weight:bold;">HTML5</span>
introducing semantic tags that make your code more readable and accessible.</p>
  <figure>
    <img src="C:\Users\Asus\Downloads\download.jpg"align="centre" height="200"
width="200">
  <figcaption>Figure: Illustration of HTML5</figcaption>
  </figure>
  <section>
  <h3>Why use semantic tags?</h3>
    <p>Semantic tags help search engine and screen readers understand the structure
of your webpage.</p>
  </section>
</article>
<aside>
  <h3>Related posts</h3>
  <ul>
    <li><ahref="#"> Introduction to html</a></li>
    <li><ahref="#"> CSS Basics</a></li>
    <li><ahref="#"> Java Script</a></li>
  </ul>
```

```
    </aside>

    </main>

    <footer>
    <p>&copy; 2025 My Blog. All rights reseved.</p>
    </footer>

</body>
</html>
```

**Output:**




Result:

**Experiment-3.2**

AIM:

b. Write a HTML program, to embed audio and video into HTML web page.

**DESCRIPTION:**

1. Embedding Audio in HTML

The <audio> tag is used to embed sound content like music, voice, or effects.

You can provide multiple formats for browser support and add controls for play/pause.

Syntax:

```
<audio controls>
  <source src="audiofile.mp3" type="audio/mpeg">
  <source src="audiofile.ogg" type="audio/ogg">
  Your browser does not support the audio element.
</audio>
```

Explanation:

- controls → Displays default play, pause, and volume buttons.
- <source> → Specifies the file path and type.
- The text inside <audio> appears if the browser doesn't support the tag.

2. Embedding Video in HTML

The <video> tag is used to embed video content like tutorials, clips, or movies.

Syntax:

```
<video controls width="500" height="300">
  <source src="video.mp4" type="video/mp4">
  <source src="video.ogg" type="video/ogg">
  Your browser does not support the video tag.
</video>
```

Explanation:

- controls → Displays play, pause, volume, and fullscreen buttons.
- width & height → Set the size of the video player.
- <source> → Allows multiple file formats for better browser compatibility.

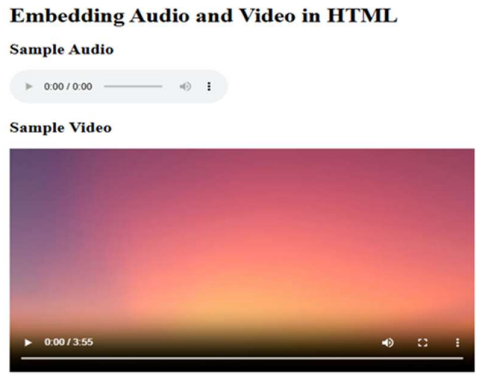
Fallback text is shown if the browser does not support the <video> tag

**Program:**

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Audio and Video Embedding</title>
</head>
<body>
    <h1>Embedding Audio and Video in HTML</h1>

    <!-- Audio Section -->
    <h2>Sample Audio</h2>
    <audio controls>
        <source src="indian-hindi-song-bollywood-music-342142.mp3" type="audio/mpeg">
```

```
        <source src="777-hz-higher-angelic-frequencies-223415.mp3" type="audio/mpeg">
        Your browser does not support the audio element.
    </audio>

    <!-- Video Section -->
    <h2>Sample Video</h2>
    <video width="640" height="360" controls>
        <source src="C:\Users\106html\Downloads\ZAYN & Sia - Dusk Till Dawn
(Lyrics).mp4" type="video/mp4">
        <source src= type="video/webm">

        Your browser does not support the video tag.
    </video>
</body>
</html>
```

**Output:**




Result:

**Experiment-3.3**

**AIM:**
3. . HTML 5 and Cascading Style Sheets, Types of CSS
c. Write a program to apply different types (or levels of styles or style specification formats) - inline, internal, external styles to HTML elements. (identify selector, property and value).

**DESCRIPTION:**
In HTML, **CSS (Cascading Style Sheets)** is used to style web pages by applying different formatting to elements. CSS can be applied in **three ways** — **inline**, **internal**, and **external**.

1. **Inline Styles**
    - These styles are applied directly to an HTML element using the style attribute.
    - They affect only the specific element where they are written.
    - Example: This is a blue paragraph.
    - **Selector:** The element itself (like ).
    - **Property:** The style attribute name (like color).
    - **Value:** The assigned value (like blue).
2. **Internal Styles**
    - Internal CSS is written inside a <style> tag in the <head> section of the HTML document.
    - It applies styles to multiple elements within the same page.
3. **External Styles**
    - External CSS is written in a separate .css file and linked to the HTML file using the <link> tag.
    - This approach allows you to apply styles to multiple pages, making it easier to maintain and update.
    - **Selector:** h1.
    - **Property:** text-align, color.
    - **Value:** center, green.

**Program:**

```
<!DOCTYPE html>
<html>
<head>
   <title>Types of CSS Styles</title>
  <!-- External Style -->
   <link rel="stylesheet" type="text/css" href="style.css">
<!-- Internal Style -->
   <style>
      /* Internal CSS uses selectors */
      h2 {
         color: darkblue; /* property: color; value: darkblue */
         text-align: center;
      }
      p {
         font-size: 18px; /* property: font-size; value: 18px */
         color: green;
      }
```

```
   </style
</head>
<body>

   <!-- Inline Style -->
   <h1 style="color:red; text-align:center;">Inline, Internal, and External CSS</h1>

   <h2>This is styled using Internal CSS</h2>

   <p>This paragraph demonstrates Internal CSS applied with a selector.</p>

   <div class="box">This box is styled using External CSS</div>

</body>
</html>
```

OUTPUT:

**Experiment-4.1**

**AIM:**

4. Selector forms

a. Write a program to apply different types of selector forms

I. Simple selector (element, id, class, group, universal)
II. Combinator selector (descendant, child, adjacent sibling, general sibling)
III. Pseudo-class selector
IV. Pseudo-element selector
V. Attribute selector

**DESCRIPTION:**

CSS selector forms define **how to choose elements** in an HTML document for styling.

**Types :**

**I. Simple Selectors**

Simple selectors target elements directly by name, id, class, group, or universally **CSS Selector Forms**.

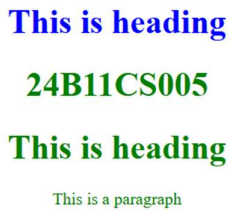
**1. Element Selector:** Selects all elements of a given tag.
**2. ID Selector:** Selects an element with a specific id.
**3. Class Selector:** Selects elements with a specific class.
**4. Group Selector:** Allows applying styles to multiple elements at once.
**5. Universal Selector:** Selects **all elements** on the page.

**Program:**

```
<html>
<body>
<head>
<style>
h1
{
color:green;
}

.h{
color:blue;
}
#s{
color:green;
}

*{
 text-align:center;
}

</style>
</head>
<body>
```

```
<h1 class="h">This is heading</h1>

<h1>24B11CS005</h1>
<h1>This is heading</h1>
<p id="s">This is a paragraph</p>

</body>
<html>
```

**Output:**




**Result:**

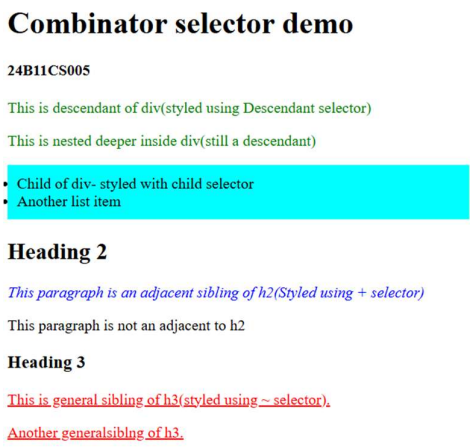
4.2
Description:
**II. Combinator Selectors**
Used to select elements based on relationships (parent-child, siblings, etc.)
**1. Descendant Selector (Space):** Selects elements inside another element.
**2. Child Selector (>)**:Selects **direct children** of an element.
**3. Adjacent Sibling Selector (+)**:Selects the first element **immediately after** a given element.
The **first <p> after <h1>** will be green.
4.**General Sibling Selector (~):** Selects **all siblings** after a given element.

Program:

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <title Combinator selectors></title>
    <style>
      div p{
        color: green;
        font-size:16px;
      }
      /* child selector (>)*/
      div >ul{
        background-color:aqua ;
        padding:10px;
      }
      /* Adjacent sibling selector (+)*/
      h2 + p{
        color:blue;
        font-style: italic;
      }
      /* General sibling  selector(~)*/
      h3 ~ p {
        color:red;
        text-decoration: underline;
      }
    </style>

  </head>
  <body>
    <h1>Combinator selector demo</h1>
    <h4>24B11CS005</h4>  <!--relation between tags or elements-->
    <div>
      <p>This is descendant of div(styled using Descendant selector)</p>
      <section>
        <p>This is nested deeper inside div(still a descendant)</p>
      </section>
```

```
        <ul>
          <li> Child of div- styled with child selector</li>
          <li> Another list item</li>
        </ul>
      </div>

      <h2> Heading 2</h2>
      <p> This paragraph is an adjacent sibling of h2(Styled using + selector)</p>
      <p> This paragraph is not an adjacent to h2</p>

      <h3> Heading 3</h3>
      <p> This is general sibling of h3(styled using ~ selector).</p>
      <p> Another generalsiblng of h3.</p>
   </body>
</html>
```

Output:




**Result:**

4.3

**III. Pseudo-Class Selector**

- **Description:** Selects elements in a specific state (hovered, visited, first-child, etc.)
- **Syntax:**a:hover {
  color: orange;
  }
  p:first-child {
  font-style: italic;
  }

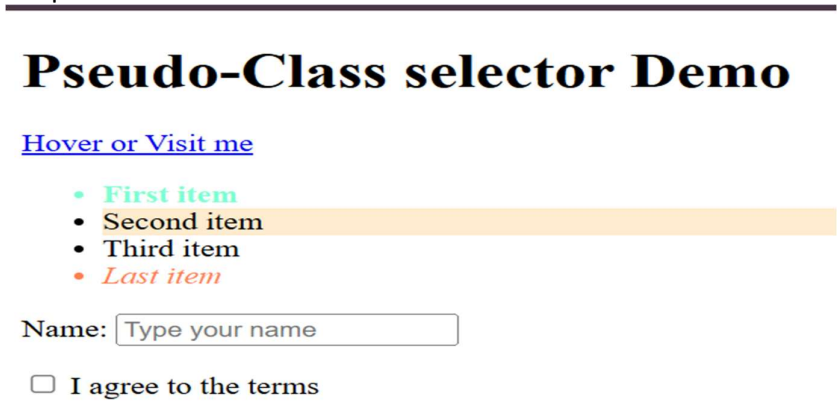
First example changes color when hovered, second styles first <p> inside a container.

**Program:**

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <title>Pseudo class selectors</title>
   <style>
      /*: hover- when mouse is over the element*/
      a:hover{
         color:red;
         text-decoration: underline;
      }
      /*: first -child - targets the first child element*/
      ul li:first-child{
         font-weight: bold;
         color:aquamarine;
      }
      /*last-child - targets the last child element*/
      ul li:last-child{
         font-style: italic;
         color: coral;
      }
      /* :nth-child - targets the nth child*/
      ul li:nth-child(2)
      {
         background-color: blanchedalmond;
      }
      /* :focus - applies when input is focused*/
      input:focus{
         border: 2px solid orange;
         outline: none;
      }
      /* checked -  when checkbox is selected*/
      input[type="checkbox"]:checked+label{
         color: cornflowerblue;
         font-weight: bold;
      }
```

```
      /* :visited - visited links */
      a:visited{
        color: purple;
      }
    </style>
</head>
  <body>
      <h1> Pseudo-Class selector Demo</h1>
      <a href="https://www.codechef.com/login?destination=/dashboard">Hover or Visit
me</a>
      <ul>
        <li>First item</li>
        <li>Second item</li>
        <li>Third item</li>
        <li>Last item</li>
      </ul>
      <form>
        <p>
          <label for="name">Name:</label>
          <input type="text" id="name" placeholder="Type your name">
        </p>
        <p>
          <input type="checkbox" id="agree">
          <label for="agree">I agree to the terms</label>
        </p>
      </form>
  </body>
</html>
```

Output:




**Result:**

4.4

IV. Pseudo-Element Selector

- Description: Selects parts of an element (like first line, first letter, etc.)
- Syntax:

```
p::first-line {
  font-weight: bold;
}
p::first-letter {
  font-size: 200%;
  color: red;
}
```

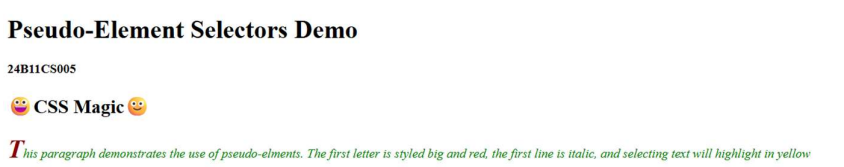
This makes first line bold and first letter big & red.

**Program:**

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Pseudo Class Selectors</title>
    <style>
        /*::first-letter-style the first letter of a paragraph*/
        p::first-letter{
            font-size:  200%;
            font-weight: bold;
            color: darkred;
        }
        /*::first-line -style the first line of a paragraph*/
        p::first-line{
            font-style: italic;
            color: green;
        }
        /*:: before- insert content before an element*/
        h2::before{
            content: " 😀 ";
            color: aquamarine;
        }

        /* ::after-insert content after an element*/
        h2::after{
            content: " 🙂 ";
            color: orange;
        }
         /* ::selection- style selected text*/
        ::selection{
            background-color: bisque;
            color: chartreuse;
        }
```

```
  </style>
</head>
<body>
  <h1>Pseudo-Element Selectors Demo</h1>
  <h4>24B11CS005</h4>
  <h2>CSS Magic</h2>
  <p> This paragraph demonstrates the use of pseudo-elments.
    The first letter is styled big and red, the first line is italic, and selecting text will highlight
in yellow</p>
</body>
</html>
```

**Output:**




**Result:**

4.5

**V. Attribute Selector**

- **Description:** Selects elements based on attributes or attribute values.
- **Syntax:**

```
input[type="text"] {
  border: 2px solid blue;
}
a[target="_blank"] {
  color: purple;
}
```

First applies style to text input fields, second applies to links opening in new tabs.

**Program:**

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <title>Simple Attribute Selector</title>
   <style>
      input[type="text"]
   {
   background-color:lightyellow;
   }
   a[target = "_blank"] {
   color:red;
   }
   img[alt]{
   border:5px solid black;
   }
   </style>
</head>
<body>
   <h2> Attribute Selector Demo</h2>
   <h4>24B11CS005</h4>
   <input type="text" placeholder="Enter Your Name"><br><br>
   <a href="https://www.codechef.com/users/smack_trust_39">Code chef</a><br><br>
   <img src="C:\Users\Asus\OneDrive\Documents\meg.jpg"width="100" height="100">
</body>
</html>
```

**Output:**

## Attribute Selector Demo

**24B11CS005**

Enter Your Name

Code chef

Result:

**AIM:**

**5)CSS with Color, Background, Font, Text and CSS Box Model**

**a) Write a program to demonstrate the various ways you can reference a color in CSS.**

**DESCRIPTION:**

The **color property in CSS** can be defined in multiple ways, allowing developers flexibility in how they choose and apply colors to elements. Colors can be referenced using:

1. **Named Colors:**
   - CSS supports predefined color names like red, blue, green, yellow, etc.
   - Example: color: red;
2. **Hexadecimal Values (#RRGGBB or #RGB):**
   - Uses a six-digit or three-digit hex code to represent red, green, and blue values.
   - Example: color: #ff0000; (red), color: #0f0; (green).
3. **RGB Values (rgb):**
   - Defines a color using red, green, and blue values ranging from 0 to 255.
   - Example: color: rgb(255, 0, 0); (red).
4. **RGBA Values (rgba):**
   - Similar to RGB but adds an alpha channel for transparency (0.0 to 1.0).
   - Example: color: rgba(0, 0, 255, 0.5); (semi-transparent blue).
5. **HSL Values (hsl):**
   - Defines colors using hue (0–360), saturation (%), and lightness (%).
   - Example: color: hsl(120, 100%, 50%); (green).
6. **HSLA Values (hsla):**
   - Same as HSL but with an alpha (transparency) component.
   - Example: color: hsla(240, 100%, 50%, 0.3); (transparent blue).

→In short, CSS allows colors to be defined in **different formats** depending on readability, flexibility, and design needs, making it easy for developers to control the look and feel of a webpage.

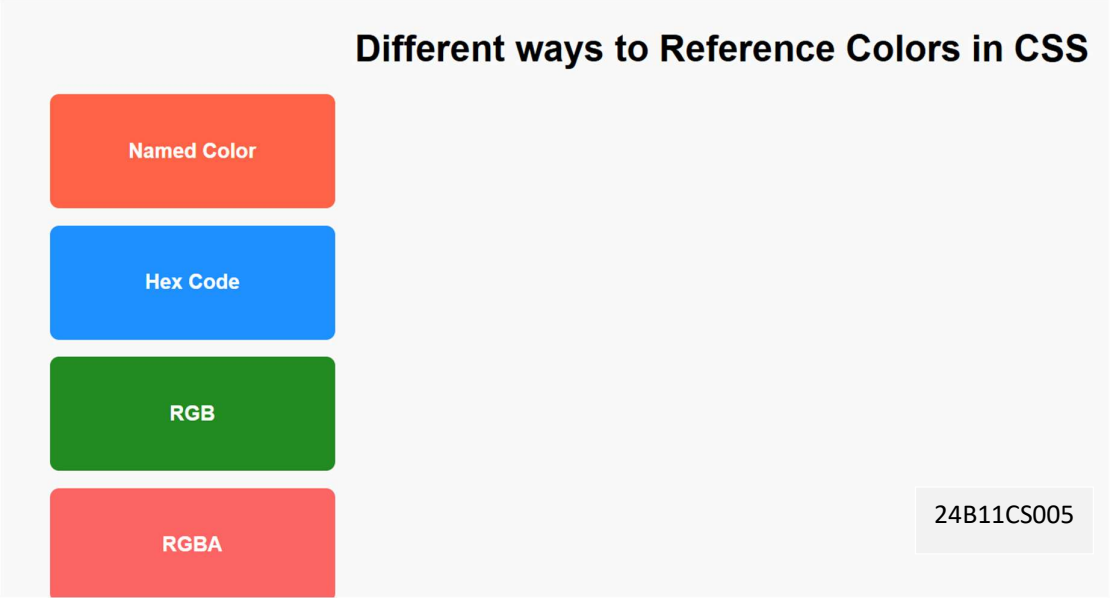
**PROGRAM:**

```
<!DOCTYPE html>
<html>
<head>
 <meta charset="UTF-8">
 <title>CSS Color Reference Methods</title>
 <style>
   body {
     font-family:Arial,sans-serif;
     padding:20px;
     background-color:#f9f9f9;
     }
 h1 {
  text-align:center;
 }
 .color-box {
```

```
    width:250px;
    height:100px;
    color:white;
    display:flex;
    align-items:center;
    justify-content:center;
    margin:15px;
    font-size:18px;
    font-weight:bold;
    border-radius:8px;
    box-shadow:0 4px 6px rgba(0,0,0,0,1);
   }

 /*1.Named color*/
  .named-color {
      background-color:tomato;/*CSS Named Color*/
      }

/*2.Hexadecimal notation*/
.hex-color {
   background-color:#1E90FF;/*Dodger Blue*/
  }

/*3.RGB notation*/
  .rgb-color {
    background-color:rgb(34,139,34);/*Forest Green*/
   }

/*.RGBS notation(with transparency)*/
 .rgba-color {
    background-color:rgba(255,0,0,0.6);/*Red with transparency*/
   }

/*5.HSL notation*/
  .hsl-color {
      background-color:hsl(300,76%,72%);/*Light Purple*/
    }

/*6.HSLA notation(with trancparency)*/
  .hsla-color {
    background-color:hsla(39,100%,50%,0.7);/*Orange with transparency*/
    }
</style>
 </head>
<body>

  <h1>Different ways to Reference Colors in CSS</h1>
```

```
  <div class="color-box named-color">Named Color</div>
  <div class="color-box hex-color">Hex Code</div>
  <div class="color-box rgb-color">RGB</div>
  <div class="color-box rgba-color">RGBA</div>
  <div class="color-box hsl-color">HSL</div>
  <div class="color-box hsla-color">HSLA</div>
</body>
</html>
```

**OUTPUT:**




**RESULT:**

**5)b.**

**AIM:Write a CSS rule that places a background image halfway down the page, tilting it horizontally. The image should remain in place when the user scrolls up or down.**

**DESCRIPTION:**

The **background-image property in CSS** allows you to add images behind HTML elements. To place a background image halfway down the page, fix it so it doesn't move while scrolling, and repeat it horizontally, we use a combination of background-position, background-repeat, and background-attachment.

- **background-image** → specifies the image file to be used as background.
- **background-position** → positions the image on the page; using center 50% places it halfway vertically and centered horizontally.
- **background-repeat** → controls tiling; setting it to repeat-x repeats the image horizontally across the page.
- **background-attachment** → fixes the background image so it remains in place while the user scrolls.

→ In short, this CSS rule ensures the background image appears halfway down, stretches horizontally through tiling, and stays fixed in position even when the page is scrolled.

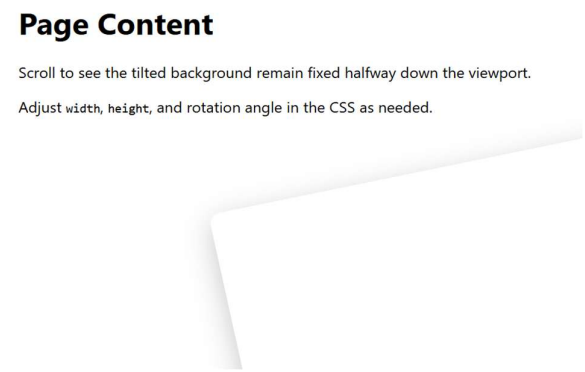
**PROGRAM:**

```
<!doctype html>

<html>

<head>

<meta charset="utf-8" />

<title>Fixed tilted background (horizontal rotate)</title>

<style>

/* Container content so you can scroll the page */

body {

  min-height: 300vh; /* make page scrollable to test fixed behaviour */

 margin: 0;

  font-family: system-ui, Arial, sans-serif;

}

/* Fixed background image element */.tilted-bg {
```

```
  position: fixed;
  left: 50%;          /* center horizontally */
  top: 50vh;          /* halfway down the viewport */
  transform: translate(-50%, -50%) rotate(-12deg);
  width: 60vw;        /* size the image element */
  height: 40vh;
  background-image: url('spasskaya_tower.jpg'); /* place image in same folder */
  background-size: cover;
  background-position: center;
  background-repeat: no-repeat;
  pointer-events: none; /* so it won't block clicks */
  border-radius: 12px;
  box-shadow: 0 10px 30px rgba(0,0,0,0.25);
  z-index: 9999;
  opacity: 0.95;
  will-change: transform;
}
/* sample page content */
main {
  padding: 2rem;
}
</style>
</head>
<body>
  <div class="tilted-bg" aria-hidden="true"></div>
  <main>
    <h1>Page Content</h1>
    <p>Scroll to see the tilted background remain fixed halfway down the viewport.</p>
```

```
  <p>Adjust <code>width</code>, <code>height</code>, and rotation angle in the CSS as needed.</p>


<!-- Add content to scroll -->

  <p style="margin-top:140vh">This line is roughly below the fold to show scrolling.</p>

 </main>

</body>

</html>
```

**OUTPUT:**




**RESULT:**

**AIM:**

**5)c.Write a program using the following terms related to CSS font and text:**

**i. font-size ii. font-weight iii. font-style**

**DESCRIPTION:**

1. **font-size**
    - The font-size property in CSS is used to define the size of the text on a webpage.
    - It can be given in different units such as pixels (px), em (em), rem (rem), percentage (%), or predefined keywords like small, medium, large.
    - Example: font-size: 20px; makes the text larger, while font-size: 12px; makes it smaller.
2. **font-weight**
    - The font-weight property controls the **thickness (boldness)** of text characters.
    - It can take values like normal, bold, lighter, bolder, or numeric values ranging from 100 (thin) to 900 (extra bold).
    - Example: font-weight: bold; makes the text bold, while font-weight: 300; makes it lighter.
3. **font-style**
    - The font-style property specifies whether the text should appear in **normal**, **italic**, or **oblique** form.
    - normal shows plain text, italic makes the text slanted and stylized, and oblique also slants text but in a less decorative way than italic.
    - Example: font-style: italic; makes text slanted for emphasis.

→In summary, these three CSS properties (font-size, font-weight, and font-style) are essential for controlling **how text looks** on a webpage, making it more readable, attractive, and suitable for design requirements.

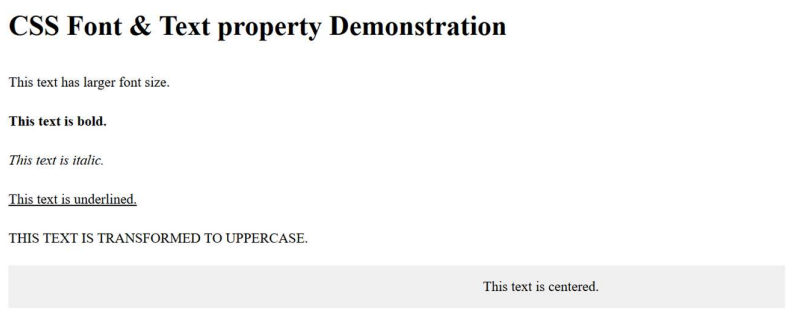
**PROGRAM:**

```
<!DOCTYPE html>

<html>

<head>

    <meta charset="UTP+8">
```

```
<title>CSS Font and Text Properties</title>
  <style>
    body {
      .font-family: Arial, sans-serif;
      padding: 20px;
      line-height:1.8;
     }
  /* 1. font-size */
      .font-size {
          front-size:24px; /* Increase text size */
      }
  /* 2. font-weight */
      .font-weight {
         font-weight: bold; /* Make text bold */
      }
  /* 3. font-style */
      .font-style {
          font-style: italic; /* Make text italic */
      }
/* 4. text-decoration */
      .text-decoration {
          text-decoration: underline; /* Add underline */
      }
  /* 5. text-transform */
      .text-transform {
         text-transform: uppercase; /* convert all letters to uppercase */
       }
```

```
 /* 6. text-align */
      .text-align {
         text-align: center; /* center align text */
         background-color: #f0f0f0;
         padding: 10px;
       }
</style>
</head>
 <body>
      <h1>CSS Font & Text property Demonstration</h1>
      <p class="font-size">This text has larger font size.</p>
      <p class="font-weight">This text is bold.</p>
      <p class="font-style">This text is italic.</p>
      <p class="text-decoration">This text is underlined.</p>
      <p class="text-transform">This text is transformed to uppercase.</p>
      <p class="text-align">This text is centered.</p>
</body>
</html>
```

**OUTPUT:**



**AIM:**

**5)d.Write a program, to explain the importance of CSS Box model using**

**i. Content ii. Border iii. Margin iv. padding**

**DESCRIPTION:**

The **CSS Box Model** is the fundamental concept that describes how every element on a webpage is structured and how spacing is applied. Each element is treated as a rectangular box made up of four layers:

1. **Content**
    - This is the innermost area of the box, where the actual text, image, or other media is displayed.
    - Example: The words inside a paragraph or an image inside a div are part of the content.
2. **Padding**
    - Padding is the space between the **content** and the **border** of the element.
    - It creates breathing room inside the box without affecting the border.
    - Example: Adding padding: 20px; increases the distance between the text and its surrounding border.
3. **Border**
    - The border wraps around the **padding** and the **content**.
    - It can be styled with color, thickness, and patterns (solid, dotted, dashed, etc.).
    - Example: border: 2px solid black; adds a black outline around the element.
4. **Margin**
    - The margin is the outermost layer of the box.
    - It creates space **outside** the border, separating the element from other elements.
    - Example: margin: 15px; pushes the element away from neighboring boxes.

**PROGRAM:**

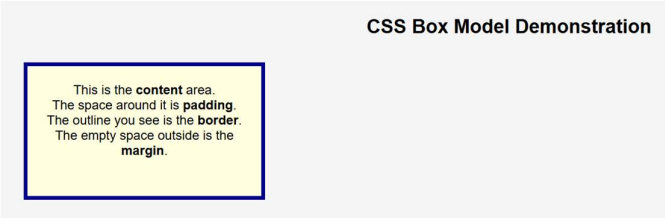
<!DOCTYPE html>

,html lang="en">

```
<head>
  <meta charset="UTF-8">
  <title>CSS Box Model Example</title>
  <style>
        .box {
          width: 250px;
          height: 120px;
          background-color: lightyellow;       /* i. Content */
          padding: 20px;                       /* iv. Padding */
          border: 5px solid darkblue;          /* ii. Border */
          margin: 30px;                        /* iii.Margin */
          font-size: 16px;
          text-align: center;
        }
body {
                background-color: #f5f5f5;
                font-family: Arial, sans-serif;
        }
    </style>
  </head>

<body>
  <h2 style="text-align:center;">CSS Box Model Demonstration</h2>
 <div class="box">
        This is the <b>content</b> area.<br>
        The space around it is <b>padding</b>.</br>
        The outline you see is the <b>border</b>.<br>
```

```
        The empty space outside is the <b>margin</b>.
    </div>
</body>
</html>
```

**OUTPUT:**




**RESULT:**

**Experiment-6.1**

**AIM:** Write a program to embed internal and external JavaScript in a web page

**DESCRIPTION:**

**Internal JavaScript:**

Written inside the HTML file using <script> tag.
Usually placed inside <head> or <body>.
Useful for small scripts.

**External JavaScript**

Saved in a separate .js file and linked using <script src="...">.
Useful for reusability and better code organization.

**JavaScript I/O**

Input: Using prompt() to take user input.
Output: Using document.write(), alert(), or console.log().

**Type Conversion**

parseInt() → converts string to integer.
parseFloat() → converts string to floating point.
Number() → converts string to number.
toString() → converts number to string.

**PROGRAM:**

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Embedded</title>
  <!--External Javascript-->
  <script src="script.js"></script>
</head>
<body>
  <h3>24B11CS005</h3>
  <h1>Welcome to Javascript Demo</h1>
  <button onclick="internalFunction()">Run Internal JS</button>
  <button onclick="externalFunction()">Run External JS</button>
  <!--Internal Javascript-->
  <script>
    function internalFunction(){
      alert("Hello from internal javascript");
    }
  </script>
</body>
</html>
```

**OUTPUT**


**RESULT:**

**Experiment-6.2**

**AIM:**Write a program to explain the different ways for displaying output.

**DESCRIPTION:**

JavaScript provides multiple ways to display output on a webpage or to the user:

**1. Using document.write()**

This method writes content directly into the HTML document.

It is often used for testing or quick demonstrations.

**2. Using console.log()**

This method displays output in the browser's console (accessible by pressing F12 or opening developer tools).

It is mainly used by developers for debugging and testing code.

**3. Using alert()**

This method displays a popup dialog box with a message.

Showing urgent messages, alerts, or confirmations that require immediate user attention.

**4. Using prompt()**

prompt(): Displays a dialog box that asks the user for input. Whatever the user types can then be displayed or stored in a variable.

**PROGRAM:**

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8">
  <title>Document</title>
</head>
<body>
  <h3>24B11CS005</h3>
  <h1>JavaScript Output Methods</h1>
  <button onclick="showAlert()">Show Alert</button>
  <button onclick="logToConsole()">Log to Console</button>
  <button onclick="writeToDocument()">write To Document</button>
  <button onclick="updateDOM()">Update DOM</button>
  <div id="outputArea">output will appear here...</div>
  <script>
    //1.Alert box
    function showAlert()
    {
      alert("This is an alert box!");
    }
    //2.console.log
    function logToConsole(){
      console.log(" This message is logged to the console.");
    }
    //3.document.write
    function writeToDocument(){
     document.write("This text is written directly to the document.");
    }
```

```
      //4.upadate dom
      function updateDOM(){
         document.getElementById("outputArea").innerText="This text was inserted using
DOM manipulation.";
      }
   </script>
</body>
</html>
```

**OUTPUT:**

**24B11CS005**

# JavaScript Output Methods

Show Alert | Log to Console | write To Document | Update DOM

output will appear here...

**RESULT:**

**Experiment-6.3**

**AIM: Write a program to explain the different ways for taking input.**

**DESCRIPTION:**

JavaScript allows us to collect input from users in multiple ways. These methods can be simple (like dialog boxes) or more advanced (like HTML forms). Each method has its own purpose and usage.

**1. Using prompt()**

The simplest way to take input directly from a user.

When called, it opens a dialog box with a text field where the user can type something.

**2. Using HTML Form Fields**

The most common and professional way to collect user input.

Inputs can be taken through <input>, <textarea>, <select>, and other form elements.

**3. Using Event Listeners (Keyboard/Mouse Events)**

JavaScript can capture user input through events like keypress, keyup, keydown, or mouse click.

**4. Using Command-Line Arguments (in Node.js)**

If JavaScript is executed outside the browser (using Node.js), input can be taken from the command line.

**5. Using External Files :**

JavaScript can also take input indirectly by reading data from:

Text files / JSON files

**PROGRAM:**

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <title>Document</title>
   <style>
      body{
         font-family: Arial, Helvetica, sans-serif; padding: 20px;
         input,button{
            margin:10px 0;display: block;
         }
         #output{
            margin-top: 20px; font-weight: bold;
         }
      }
   </style>
</head>
<body>
  <h3>24B11CS005</h3>
  <h1>Ways to take input in Javascript</h1>
  <!--1.Text input field-->
  <label>Enter your name:</label>
  <input type="text" id="nameInput">
  <button onclick="getInputFromField()">Submit Name</button>
  <!--2.Prompt box-->
```

```
 <button onclick="getInputFromPrompt()">Enter Age (Prompt)</button>
 <!--3.Form Input-->
 <form onsubmit="getInputFromForm(event)">
  <label>Enter your Email</label>
  <input type="email" id="emailInput">
  <button type="submit">Submit Email</button>
 </form>
 <!---4.Dropdown Selection-->
  <label>Select your country</label>
  <select id="countrylist">
   <option value="India">India</option>
   <option value="USA">USA</option>
   <option value="Japan">Japan</option>
  </select>
  <button onclick="getInputFromDropdown()">Submit Country</button>
  <div id="output">Your input will appear here.</div>
  <script>
   //1.Input from text field
   function getInputFromField()
   {
      const name=document.getElementById("nameInput").value;
      document.getElementById("output").innerText="Name:"+name;
   }
   //2.Input from Prompt box
   function getInputFromPrompt(){
      const age=prompt("Please enter the age:");
      document.getElementById("output").innerText="Age:"+age;
   }
   //3.Input from form
   function getInputFromForm(event){
      event.preventDefault();//prevent page reload
      const email=document.getElementById("emailInput").value;
      document.getElementById("output").innerText="Email:"+email;
   }
   //4.Input from drop down selection
   function getInputFromDropdown(){
     const country=document.getElementById("countrylist").value;
     document.getElementById("output").innerText="Country:"+country;
   }
  </script>
</body>
</html>
```

**OUTPUT:**


**RESULT:**

**Experiment-6.4**

**AIM:**Create a webpage which uses prompt dialogue box to ask a voter for his name and age. Display the information in table format along with either the voter can vote or not.

**DESCRIPTION:**

It validates the inputs (not empty, age is a sensible number).
It calculates eligibility (e.g., “Can Vote” if age ≥ 18; otherwise “Cannot Vote”).
It displays the results in a table on the page with the columns: *Name*, *Age*, *Eligibility*, and optionally *Notes/Reason*.
If the user cancels or provides invalid input, the page shows a friendly message and does not add a bad row.
Input collection details

**Name prompt**

The prompt message clearly asks for the voter’s full name.
After the user responds, the script trims whitespace from the start and end.

**Age prompt**

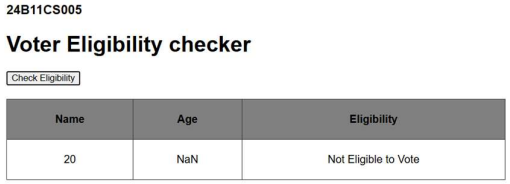
The prompt message asks for Age in years (numbers only).
After the user responds, the script trims whitespace and attempts to convert the string to a number.

**PROGRAM:**

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <title>Voter Eligibility checker</title>
   <style>
     body{
       font-family: Arial,sans-serif;
       padding: 20px;
     }
     table{
       border-collapse: collapse;
       width:50%;
       margin-top: 20px;
     }
     th,td{
       border: 1px solid #333;
       padding: 20px;
       text-align: center;
     }
th{
background-color:softblue
}
   </style>
</head>
<body>
   <h3>24B11CS005</h3>
```

```
  <h1> Voter Eligibility checker</h1>
  <button onclick="checkvoter()">Check Eligibility </button>
  <div id="result"></div>
  <script>
    function checkvoter()
    {
      const name=prompt("Enter Name");
      const age=prompt("Enter Age");
      if(name===null || age===null || name.trim()==="" || isNaN(age)){
        alert("Invalid. Try again Later");
        return;
      }

      const ageNum=parseInt(age);
      const eligibility = ageNum >=18 ? "Eligibility to Vote" : "Not Eligible to Vote";

      const tableHTML =`
      <table>
        <tr>
          <th>Name</th>
          <th>Age</th>
          <th>Eligibility</th>
        </tr>
        <tr>
          <td>${name}</td>
          <td>${ageNum}</td>
          <td>${eligibility}</td>
        </tr>
      </table>
    `;
     document.getElementById("result").innerHTML=tableHTML;
    }
  </script>
</body>
</html>
```

**OUTPUT:**




**RESULT:**

**Experiment-7.1**

**AIM:** write a program using document object properties and methods.
**DESCRIPTION:** The Document Object Model (DOM) represents the structure of an HTML document.
Using the document object, we can access and manipulate elements, attributes, and content of a web page dynamically.
Common properties of the document object include title, URL, and lastModified.
Common methods include write(), getElementById(), getElementsByTagName(), and createElement().
This program demonstrates how to use document object properties to display webpage information and methods to modify the page dynamically.

**PROGRAM:**

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <title>Document Object Example</title>
</head>
<body>
   <h3>24B11CS005</h3>
   <h1 id="heading">Hello World!</h1>
   <p> This is a demo of document  object.</p>

   <button onclick="showInfo()">Show Document Info</button>

   <div id="output"></div>

   <script>
      function showInfo(){
         //Using document properties
         let title=document.title;
         let URL=document.URL;
         let lastModified=document.lastModified
         //Using document methods
         document.getElementById("heading").style.color="brown";//Change heading color
         document.getElementById("output").innerHTML=
         "title:" +title +"<br>"+ "URL:"+URL +"<br>"+ "lastModified:"+lastModified;
      }
   </script>
</body>
</html>
```

**OUTPUT:**

**24B11CS005**

# Hello World!

This is a demo of document object.

Show Document Info

title:Document Object Example
URL:file:///C:/Users/Asus/OneDrive/Documents/11.1.html
lastModified:10/11/2025 11:58:06

**RESULT:**

**Experiment-7.2**

**AIM:** write a program using window object properties and methods

**DESCRIPTION**: In JavaScript, the window object represents the browser window.
It is the global object in client-side JavaScript — meaning all global variables, functions, and objects belong to it.

Common Window Object Properties:

- window.innerWidth – Returns the width of the browser window's content area.
- window.innerHeight – Returns the height of the browser window's content area.
- window.location – Returns the current URL.
- window.document – Refers to the document loaded in the window.

Common Window Object Methods:

- window.alert() – Displays an alert dialog box.
- window.confirm() – Displays a dialog box with OK and Cancel buttons.
- window.prompt() – Displays a dialog box that prompts the user for input.
- window.open() – Opens a new browser window.
- window.setTimeout() – Executes a function after a specified delay.

**PROGRAM:**

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Window Object Example</title>
</head>
<body>
  <h3>24B11CS005</h3>
  <h1>Window <Object> Demo</Object></h1>
  <button onclick="showWindowInfo()">show Window Info</button>
  <button onclick="openNewWindow()">Open New Window </button>
  <button onclick="closenewWindow()">Close New Window</button>

  <div id="output"></div>
  <script> let newWin;  //to store reference of opened window
    function showWindowInfo(){
      let width=window.innerWidth;
      let height=window.innerHeight;
      let locationHref=window.location.href;

      //Display info
      document.getElementById("output").innerHTML=
      "Window Width: "+width+ "px<br>"+
      "Window Height:"+height+"px<br>"+
      "Current URL: "+locationHref;
    }

    function openNewWindow(){
      //using window.open()
```

```
newWin=window.open("https://www.google.com","Example","width=400,height=300");
      }

      function closenewWindow(){
        //Using Window.close()
        if (newWin){
          newWin.close
        }
      }
   </script>

</body>
</html>
```

**OUTPUT:**


**RESULT:**

**Experiment-7.3**

**AIM:** write a program using array object properties and methods

**DESCRIPTION**: In JavaScript, the Array object is used to store multiple values in a single variable.

It provides several properties and methods to work with data easily.

Common Array Properties:

- length – Returns the number of elements in an array.

Common Array Methods:

- push() – Adds an element at the end.
- pop() – Removes the last element.
- unshift() – Adds an element at the beginning.
- shift() – Removes the first element.
- sort() – Sorts the array.
- reverse() – Reverses the order of elements.
- join() – Combines elements into a string.

**PROGRAM:**

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Array object example</title>
</head>
<body>
  <h3>24B11CS005</h3>
  <h1>Array object Example</h1>
  <p id="output"></p>
  <script>
    let fruits=["banana","mango","grapes"];
    let length=fruits.length;
    fruits.push("orange");     //add an element at the end
    fruits.unshift("Papaya");  //adds an element at the beggining
    let last=fruits.pop();     //removes the last element
    let first=fruits.shift();   //removes the first element
    let sorted=fruits.sort();  //sort the array
    let joined=fruits.join(", ");//joins elements as a string


    document.getElementById("output").innerHTML=
   "<b>Original length:</b>"+length+"<br>"+
   "<b>After push & unshift:</b> papaya,banana,mango,grapes,orange<br>"+
   "<b>Removed Last:</b>"+last+"<br>"+
   "<b>Removed first:</b>"+first+"<br>"+
   "<b>Sorted array:</b>"+sorted+"<br>"+
   "<b>Joined as string:</b>"+joined;
  </script>
```

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

**OUTPUT:**

**24B11CS005**

# Array object Example

**Original length:**3
**After push & unshift:** papaya,banana,mango,grapes,orange
**Removed Last:**orange
**Removed first:**Papaya
**Sorted array:**banana,grapes,mango
**Joined as string:**banana, grapes, mango

**RESULT**

**Experiment-7.4**

**AIM:** write a program using math object properties and methods

**DESCRIPTION**: The Math object in JavaScript provides mathematical constants and functions.

It is not a constructor, so you don't need to create it — you can use its methods directly as Math.methodName().

Common Math Properties:

- Math.PI – Returns the value of π (3.14159...).
- Math.E – Returns Euler's number (2.718...).

Common Math Methods:

- Math.round() – Rounds to the nearest integer.
- Math.floor() – Rounds down to the nearest integer.
- Math.ceil() – Rounds up to the nearest integer.
- Math.sqrt() – Returns the square root.
- Math.pow(x, y) – Returns x raised to the power of y.
- Math.random() – Returns a random number between 0 and 1.
- Math.max() / Math.min() – Returns the largest/smallest number.

**PROGRAM:**

```
<!DOCTYPE html>
<head>
   <title>Math Object Example</title>
</head>
<body>
      <h3>24B11CS005</h3>
      <h2>Math Object Example</h2>
      <p id="output"></p>
   <script>
      //Math object properties
       let pivalue=Math.PI;
       let evalue=Math.E;
       let sqrt2value=Math.SQRT2;
       //Math object Methods
        let sqrtresult=Math.sqrt(16);
        let powerresult=Math.pow(2,5);
        let absresult=Math.abs(-25);
        let roundresult=Math.round(4.7);
        let ceilresult=Math.ceil(4.2);
        let floorresult=Math.floor(4.8);
        let randomresult=Math.random();
        let maxresult=Math.max(3,9,2,15,7);
        let minresult=Math.min(3,9,2,15,7);
      //Display results
       document.getElementById("output").innerHTML=
        "<b>properties:</b><br>"+
```

```
        "PI: " + pivalue + "<br>" +
        "E: " + evalue + "<br>" +
        "SQRT2: " + sqrt2value + "<br><br>" +
        "<b>Methods:</b><br>" +
        "Square Root of 16: " + sqrtresult + "<br>" +
        "2^5 (Power): " + powerresult + "<br>" +
        "Absolute of -25: " + absresult + "<br>" +
        "Round(4.7): " + roundresult + "<br>" +
        "Ceil(4.2): " + ceilresult + "<br>" +
        "Floor(4.8): " + floorresult + "<br>" +
        "Random Number (0-1): " + randomresult + "<br>" +
        "Max(3,9,2,15,7): " + maxresult + "<br>" +
        "Min(3,9,2,15,7): " + minresult;
    </script>
 </body>
</html>
```

**OUTPUT:**

**24B11CS005**

## Math Object Example

**properties:**
PI: 3.141592653589793
E: 2.718281828459045
SQRT2: 1.4142135623730951

**Methods:**
Square Root of 16: 4
2^5 (Power): 32
Absolute of -25: 25
Round(4.7): 5
Ceil(4.2): 5
Floor(4.8): 4
Random Number (0-1): 0.24486658508966808
Max(3,9,2,15,7): 15
Min(3,9,2,15,7): 2

**RESULT:**

**Experiment-7.5**

**AIM:** write a program using string object properties and methods

**DESCRIPTION:** The String object in JavaScript is used to work with text.
It provides properties and methods to perform operations such as finding length, changing case, extracting substrings, searching, and replacing text.

Common String Property:

- length – Returns the number of characters in a string.

Common String Methods:

- toUpperCase() – Converts to uppercase.
- toLowerCase() – Converts to lowercase.
- charAt(index) – Returns the character at the given position.
- indexOf(substring) – Returns the position of the first occurrence of a substring.
- substring(start, end) – Extracts characters between two indices.
- replace(old, new) – Replaces part of a string.
- concat() – Joins two or more strings.
- trim() – Removes extra spaces.

**PROGRAM:**

```
<!DOCTYPE html>
<head>
   <title>String Object Example</title>
</head>
<body>
  <h3>24B11CS005</h3>
  <h2>JavaScript String Object Example</h2>
  <p id="output"></p>
   <script>

    //Create a String
     let text="Hello JavaScript World!";

   //Using String Properties
     let length=text.length;    //property

   //Using String Methods
     let upper=text.toUpperCase();    //Convert to uppercase
     let lower=text.toLowerCase();     //Convert to lowercase
     let trimmed=text.trim();         //remove spaces
     let sliced=text.slice(6,16);     //extract part of string
     let replaced=text.replace("World","Programming");    //replace  word
     let charAtPos=text.charAt(7);     //get character at position
     let index=text.indexOf("JavaScript");   //find index of word
     let splitted=text.trim().split(" ");  //split into array by spaces

     //Display the results
     document.getElementById("output").innerHTML=
       "<b>Original String:</b> " + text + "<br>" +
```

```
        "<b>Length:</b> " + length + "<br>" +
        "<b>Uppercase:</b> " + upper + "<br>" +
        "<b>Lowercase:</b> " + lower + "<br>" +
        "<b>Trimmed:</b> " + trimmed + "<br>" +
        "<b>Sliced:</b> " + sliced + "<br>" +
        "<b>Replaced:</b> " + replaced + "<br>" +
        "<b>Character at 7:</b> " + charAtPos + "<br>" +
        "<b>Index of 'Javascript':</b> " + index + "<br>" +
        "<b>Splitted:</b> " + splitted.join(", ") ;
    </script>
  </body>
</html>
```

**OUTPUT:**

**24B11CS005**

## JavaScript String Object Example

**Original String:** Hello JavaScript World!
**Length:** 23
**Uppercase:** HELLO JAVASCRIPT WORLD!
**Lowercase:** hello javascript world!
**Trimmed:** Hello JavaScript World!
**Sliced:** JavaScript
**Replaced:** Hello JavaScript Programming!
**Character at 7:** a
**Index of 'Javascript':** 6
**Splitted:** Hello, JavaScript, World!

**RESULT:**

**Experiment-7.6**

**AIM:** write a program using regex object properties and methods

**DESCRIPTION**: The RegExp (Regular Expression) object in JavaScript is used to search for patterns in strings.

It provides properties and methods for pattern matching and text validation.

Common RegExp Properties:

- source – Returns the text of the regular expression.
- global – Returns true if the global (g) flag is set.
- ignoreCase – Returns true if the case-insensitive (i) flag is set.
- multiline – Returns true if the multiline (m) flag is set.

Common RegExp Methods:

- test() – Tests if a pattern exists in a string (returns true or false).
- exec() – Executes a search and returns the first match.
- Used with String methods:
    - match() – Returns an array of matches.
    - replace() – Replaces matched text.
    - search() – Returns position of match.

**PROGRAM:**

```
<html>
<head>
	<title>Contact us Page</title>
	<script type="text/javascript">
		//Validation for fields
		function validation(){
			var nm=document.getElementById("name_id").value;
			var em=document.getElementById("email_id").value;
			var su=document.getElementById("subject_id").value;
			var me=document.getElementById("message_id").value;
			if(nm=="" && em=="" && su=="" && me=="")
			{
				alert("Please enter all fields");
				return false;
			}
			else if(nm=="")
			{
				alert("Enter Name");
				return false;
			}
			else if(nm.length<4)
			{
				alert("Name should not be below 6 character");
				return false;
			}
			else if(em=="")
			{
				alert("Enter Email");
```

```
                        return false;
                }
                else if(!/^[A-z0-9]{6,}[@][A-z]{4,5}[.][A-z]{3}$/.test(em))
                {
                        alert("Enter valid Email ID");
                        return false;
                }
                else if(su=="")
                {
                        alert("Enter Subject");
                        return false;
                }
                else if(me=="")
                {
                        alert("Enter message");
                        return false;
                }

                else if(ms.length<=20)
                {
                        alert("message should below 20 characters ");
                        return false;
                }
                else{
                        return true;
                }
        }

    </script>
</head>
<h3>24B11CS005</h3>
<form onSubmit="return validation()" action="registration_app.php" method="POST">
    <table>
        <tr>
            <td colspan="2"><h2>Contact us</h2></td>
        </tr>
        <tr>
            <td>Name</td>
            <td><input type="text" name="name" id="name"/></td>
        </tr>
        <tr>
            <td>Email ID</td>
            <td><input type="text" name="email" id="email_id" /></td>
        </tr>
        <tr>
            <td>Password</td>
            <td><input type="text" name="password" id="password_id" /></td>
```

```
                </tr>
                <tr>
                        <td>Phone number</td>
                        <td><input type="text" name="phone" id="phone" /></td>
                </tr>

                <tr>
                        <td>Address</td>
                        <td><textarea name="address" id="address"></textarea></td>
                </tr>
                <tr>
                        <td></td>
                        <td><input type="submit" value="SUBMIT" /><input type="reset"
value="CLEAR" /></td>
                </tr>
        </table>
</form>
</html>
```

**OUTPUT:**

**24B11CS005**

**Contact us**

| | |
|---|---|
| Name | Meghana Adhikari |
| Email ID | 24B11CS005@adityauniver |
| Password | ****** |
| Phone number | 7382149314 |
| Address | 1-33<br>***** |

SUBMIT CLEAR

**RESULT:**

**Experiment-7.7**

**AIM:** write a program using date object properties and methods

**DESCRIPTION**: The Date object in JavaScript is used to work with dates and times.
It can display the current date, extract date components (like day, month, year), and even modify date values.

Common Date Methods:

- getDate() – Returns the day of the month (1–31).
- getMonth() – Returns the month (0–11).
- getFullYear() – Returns the year.
- getDay() – Returns the day of the week (0–6).
- getHours(), getMinutes(), getSeconds() – Return time components.
- setFullYear(), setMonth(), setDate() – Set specific parts of a date.
- toDateString() – Returns a readable date string.
- toLocaleString() – Returns date and time based on locale.

**PROGRAM:**

```
<!DOCTYPE html>
<head>
   <title>Date Object Example</title>
</head>
<body>
 <h3>24B11CS005</h3>
 <h2>JavaScript Date Object Example</h2>
 <p id="dateInfo"></p>
  <script>

    //Create a new date object
     let currentDate=new Date();

   //Using date object methods
     let year=currentDate.getFullYear();
     let month=currentDate.getMonth()+1;      //get the month (0-11), so +1
     let date=currentDate.getDate();
     let day=currentDate.getDay();
     let hours=currentDate.getHours();
     let minutes=currentDate.getMinutes();
     let seconds=currentDate.getSeconds();
     let time=currentDate.getTime();

   //Array for week days
     let days=["Sunday", "Monday", "Tuesday", "Wednesday", "Thursday", "Friday",
"Saturday"]

   //Display the values
    document.getElementById("dateInfo").innerHTML=
     "Current Date:" + date + "/" + month + "/" + year + "<br>" +
     "Day of the week:" + days[day] + "<br>" +
```

```
    "Current Time:" + hours + ":" + minutes + ":" + seconds + "<br>" +
    "Milliseconds since jan 1, 1970: " + time;
   </script>
  </body>
</html>
```

**OUTPUT:**

**24B11CS005**

# JavaScript Date Object Example

Current Date:11/10/2025
Day of the week:Saturday
Current Time:12:12:48
Milliseconds since jan 1, 1970: 1760164968883

**RESULT:**

**Experiment-7.8**

**AIM:** write a program to explain user defined object properties,methods,accessors,construcutors and display

**DESCRIPTION**: In JavaScript, you can create user-defined objects using a constructor function or object literals.

Objects can have:

- Properties – variables that hold data.
- Methods – functions that define behavior.
- Accessors – get and set methods for controlled access to properties.
- Constructors – special functions used to initialize objects.

**PROGRAM:**

```
<!DOCTYPE html>
<html>
<head>
   <title>User Defined Object Example</title>
</head>
<body>
  <h3>24B11CS005</h3>
 <h2>User Defined Object Example</h2>
 <p id="Output"></p>

  <script>
    //constructor function to define a user-defined object
    function Student(name,age,marks)  {

      //Properties
       this.name=name;
       this.age=age;
       this.marks=marks;
     //Method

      this.displayDetails=function()  {
     return "Name:"+this.name+", Age:"+this.age+", Marks:"+this.marks;
      };

     //Accessor(Getter)
      this.getGrade=function() {
      if(this.marks>=90) return "A";
      else if(this.marks>=75) return "B";
      else if(this.marks>=50) return "C";
      else return "fail";
     };
    //Accessor(setter)
     this.setMarks=function(newMarks) {
     this.marks=newMarks;
    };
```

```
  }

   //Create an object using the constructor
    let student1=new Student("Hema",18,82);

   //Use setter to update marks
    student1.setMarks(92);

  //Display details and grade
   document.getElementById("Output").innerHTML=
   student1.displayDetails()+"<br>"+
   "Grade:"+student1.getGrade();
  </script>
 </body>
</html>
```

**OUTPUT:**

**24B11CS005**

# User Defined Object Example

Name:Hema, Age:18, Marks:92
Grade:A

**RESULT:**

**Experiment-8.1**

**AIM**: Write a program which asks the user to enter three integers, obtains the numbers from the user and outputs HTML text that displays the larger number followed by the words "LARGER NUMBER" in an information message dialog. If the numbers are equal, output HTML text as "EQUAL NUMBERS".

**DESCRIPTION:** This program is designed using HTML and JavaScript to compare three integers entered by the user. When the user clicks a button, they are prompted (using prompt()) to input three numbers. These inputs are then converted to integers using parseInt().

The program first checks if all three numbers are equal. If they are, it displays the message "EQUAL NUMBERS" using both an alert() message dialog and by writing it to the HTML page using innerHTML.

If the numbers are not all equal, the program calculates the largest of the three using simple conditional comparisons (if statements). It then displays the largest number followed by the message "LARGER NUMBER" (e.g., "25 LARGER NUMBER") in both the alert dialog and on the web page.

**PROGRAM:**

```
<!DOCTYPE html>
<html>
<head>
   <title>Larger Number Finder</title>
  <script>
function findLargerNumber () {
    //Take three numbers from user
     let num1=parseInt(prompt("Enter first integer:"));
     let num2=parseInt(prompt("Enter second integer:"));
     let num3=parseInt(prompt("Enter third integer:"));

     let message="";

    //Check if all numbers are equal
    if (num1===num2 && num2===num3) {
    message="EQUAL NUMBERS";
    } else {
    //find the largest
    let Largest=Math.max(num1,num2,num3);
    message=Largest+" is the LARGER NUMBER";
    }
    //Display result in an info dialog
    alert(message);
    }
  </script>
</head>
<body onload="findLargerNumber()">
</body>
</html>
```

**OUTPUT:**


**RESULT:**

**Experiment-8.2**

**AIM**: Write a program to display week days using switch case**.**

**DESCRIPTION**: This program is developed using HTML and JavaScript to display the name of a weekday based on a number input from the user. The user is prompted to enter a number from 1 to 7, where each number represents a day of the week:

- 1 → Monday
- 2 → Tuesday
- ...
- 7 → Sunday

The switch-case statement is used to evaluate the input and match it to the correct day. If the input does not fall within the 1 to 7 range, the program displays an error message: "Invalid input! Please enter a number between 1 and 7."
This exercise demonstrates:

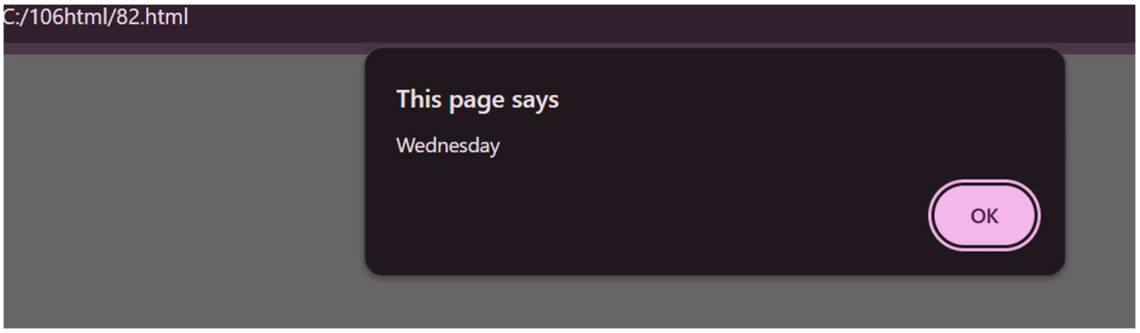
- Use of switch-case for multi-branch selection.
- Simple user interaction using prompt().
- Output using alert() and HTML display (innerHTML).

**PROGRAM:**

```
<!DOCTYPE html>
<html>
<head>
   <title>Week Days with switch case</title>
  <script>

function showWeekDay() {
    let daynumber=parseInt(prompt("Enter a number(1-7) for the weekday:"));
    let dayName="";

    switch(daynumber) {
    case 1:
        dayName="Monday";
         break;
    case 2:
        dayName="Tuesday";
         break;
    case 3:
        dayName="Wednesday";
         break;
    case 4:
        dayName="Thursday";
         break;
    case 5:
        dayName="Friday";
         break;
    case 6:
        dayName="Saturday";
         break;
    case 7:
        dayName="Sunday";
```

```
            break;
      default:
           dayName="Invalid";
       }

     //Display result in dialog box
       alert(dayName);
      // Also display result inside webpage
        document.getElementById("output").innerHTML =
            "<h2>" + dayName + "</h2>";
            }
</script>
<body onload ="showWeekDay()">
<div id="output" style="text-align:center;margin-top:20px;font-family:Lucida
Calligraphy;"></div>
</body>
</html>
```

**OUTPUT:**




**RESULT:**

**EXPERIMENT-8.3**

**AIM:**

Write a program to print 1 to 10 numbers using for, while and do-while loops.

**DESCRIPTION:**

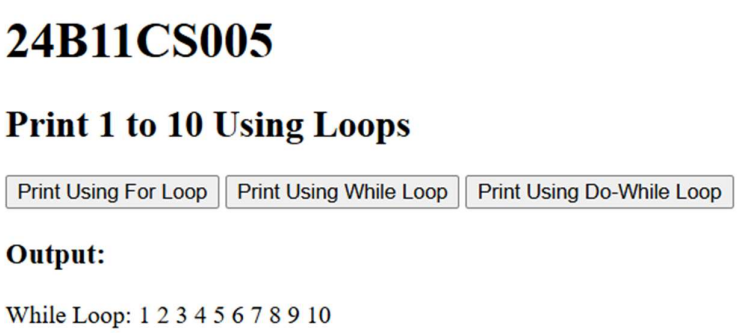
This program demonstrates how to print numbers from 1 to 10 using three types of JavaScript loops — for, while, and do-while. Each button calls a function that runs the respective loop and displays the numbers in the Output section.
For Loop: Repeats from 1 to 10 using a counter inside the loop header.
While Loop: Runs while the condition (i <= 10) is true.
Do-While Loop: Executes at least once before checking the condition.
Example Output: For Loop: 1 2 3 4 5 6 7 8 9 10

**PROGRAM:**

```
<!DOCTYPE html>
<html>
<head>
<title>Loop Demo</title>
</head>
<body>
<h1>24B11CS005</h1>
<h2>Print 1 to 10 Using Loops</h2>
<button onclick="printUsingFor()">Print Using For Loop</button>
<button onclick="printUsingWhile()">Print Using While Loop</button>
<button onclick="printUsingDoWhile()">Print Using Do-While Loop</button>
<h3>Output:</h3>
<p id="output"></p>
<script>
 function printUsingFor() {
  let result = "For Loop: ";
  for (let i = 1; i <= 10; i++) {
   result += i + " ";
  }
  document.getElementById("output").innerHTML = result;
 }
 function printUsingWhile() {
  let i = 1;
  let result = "While Loop: ";
  while (i <= 10) {
   result += i + " ";
   i++;
  }
  document.getElementById("output").innerHTML = result;
 }
 function printUsingDoWhile() {
  let i = 1;
  let result = "Do-While Loop: ";
  do {
```

```
    result += i + " ";
    i++;
  } while (i <= 10);
  document.getElementById("output").innerHTML = result;
 }
</script>
</body>
</html>
```

**OUTPUT:**




**RESULT:**

**EXPERIMENT-8.4**

**AIM:**

Write a program to print data in object using for-in, for-each and for-of loops

**DESCRIPTION:**

This program demonstrates how to iterate through an object in JavaScript using three different loop methods — for-in, forEach, and for-of.

When the webpage loads, it creates a person object with properties: name, age, and city.

The program then displays each property and its value using all three loop types.

for-in loop: Iterates over the keys of the object.

forEach loop: Uses Object.keys() to loop through each key.

for-of loop: Uses Object.entries() to get key-value pairs.

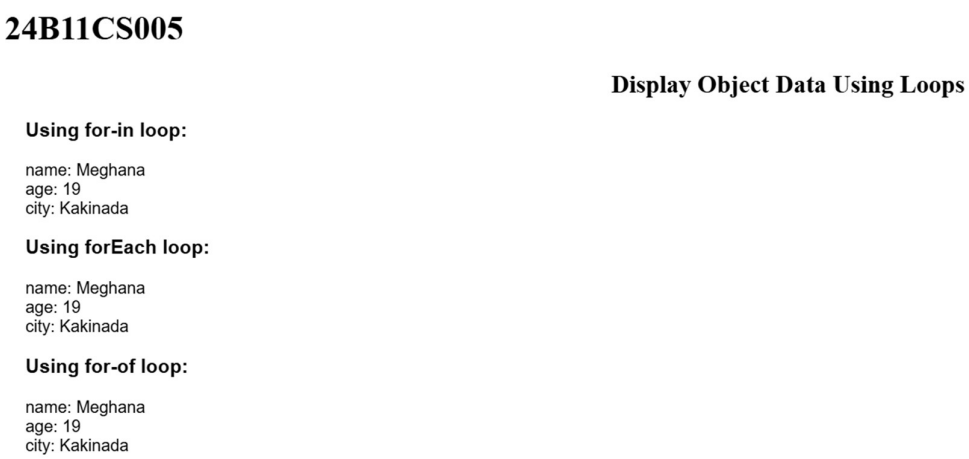
Output: It shows the property names and values three times — once for each loop method.

**PROGRAM:**

```
<!DOCTYPE html>
<html>
<head>
 <meta charset="utf-8">
 <title>Iterate Object in JavaScript</title>
 <script>

  function displayObjectData() {
   const person = {
    name: "Meghana",
    age: 19,
    city: "Kakinada"
   };

   let output = "";

   // Using for-in (loops over keys)
   output += "<h3>Using for-in loop:</h3>";
   for (let key in person) {
    output += key + ": " + person[key] + "<br>";
   }

   // Using forEach (on Object.keys)
   output += "<h3>Using forEach loop:</h3>";
   Object.keys(person).forEach(function(key) {
    output += key + ": " + person[key] + "<br>";
   });

   // Using for-of (on Object.entries)
   output += "<h3>Using for-of loop:</h3>";
   for (let [key, value] of Object.entries(person)) {
    output += key + ": " + value + "<br>";
   }
```

```
    document.getElementById("result").innerHTML = output;
   }
  </script>
</head>
<body onload="displayObjectData()">
<h1>24B11CS005</h1>
  <h2 style="text-align:center;">Display Object Data Using Loops</h2>
  <div id="result" style="margin:20px; font-family:Arial; font-size:16px;">
  </div>
</body>
</html>
```

**OUTPUT:**




**RESULT:**