



Kot Bhalwal, Jammu



Model Institute of Engineering
& Technology (Autonomous)
Lab Handout

LAB MANUAL

WEB TECHNOLOGIES LAB (BCAMI-109)

BCA(Hons.)- 1st SEMESTER

ACADEMIC YEAR (2024-25)

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Dr. Arun K. Gupta Teaching-Learning Centre

Version 1.1

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Course Code	Course Name	Course Type	Cd	L	T	P	Marks		
							Sessional	Final Exam	Total
BCAMI-109	Web Technologies Lab	Minor	2	0	0	4	-	50	50

COURSE OUTCOMES

At the end of the course the student will be able to:	
CO1	Demonstrate an understanding of designing a web page using HTML
CO2	Develop web pages using DHTML and Cascading Styles sheets.
CO3	Develop dynamic web pages using JavaScript (client-side programming).
CO4	Develop dynamic web pages using database connectivity.
CO5	Develop an interactive web application using PHP.

LIST OF EXPERIMENTS

S.No.	Title
1	Create an HTML document with the different formatting options i.e., Bold, Italics, Underline, Headings (Using H1 to H6 heading styles).
2	Create an HTML document with the different, Font (Type, Size and Color), Background (Colored background/Image in background), Paragraph, Line Break, Horizontal Rule, Pre tag.
3	Create an HTML document which consists of: Ordered List, Unordered List, Nested ordered and/or unordered List and Image.
4	Create an HTML document which implements Internal linking as well as External linking.
5	Create a table using HTML demonstrating use of columns and rows, merging multiple rows and/or columns etc. With data and image values and contents with hyperlinking.
6	Create HTML documents having multiple frames in different possible formats/organization.
7	Design a bio data form using form and controls in HTML.
8	<ul style="list-style-type: none"> Implementation of CSS selectors. Implementation of Inter CSS Implementation of External CSS
9	Program in JavaScript to check given no is even or odd
10	<ul style="list-style-type: none"> Program to calculate factorial of a no Program to generate series from 1 to 10
11	<ul style="list-style-type: none"> Implementation of inbuilt String functions in JavaScript Implementation of inbuilt Mathematical functions in JavaScript



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12	<ul style="list-style-type: none"> • Implementation of Arrays in JavaScript • Implementation of Strings
13	Implementation of alert and input functions
14	Implementation of events in JavaScript
15	<ul style="list-style-type: none"> • Create an XML document with the following sample real estate data ▪ Root element real-estate will contain a sequence of sub-elements agencies, owners, properties and flats, all with an empty content. • Create an internal DTD for the XML document. • Move the previous DTD to an external file and validate the XML document.
16	Create a PHP page using functions for comparing three integers and print the largest number.
17	Create a PHP page which accepts strings from users. After submission that page displays the reverse of the provided string.
18	Write a PHP script that removes the whitespaces from a string. Sample string: 'The quick " " brown fox'.
19	Create a login page having username and password. On clicking submit, a welcome message should be displayed if the user is already registered (i.e.name is present in the database) otherwise an error message should be displayed.
20	Using switch case and dropdown list display a —Hello! message depending on the language selected in drop down list.

ADDITIONAL WEB RESOURCES

1.	https://www.coursera.org/specializations/web-design
2.	https://vsit.edu.in/vlab.html
3.	https://www.youtube.com/watch?v=8sXRyHI3bLw

LAB REPORT INSTRUCTIONS

- Provide specific title of the lab experiment.
- Theory: Provide a concise abstract (typically 100-200 words) that summarizes the purpose, methods, key findings, and significance of the experiment.
- Software/Simulation Tools:
- Experimental Procedure: Describe the step-by-step procedure for conducting the experiment. Be detailed and clear in your instructions. Include diagrams or schematics to illustrate the setup, connections, and component placement. Explain any variations or adjustments made to the standard procedure.
- Observation & Calculations/Analysis: Detail the data you collected during the experiment. Include descriptions of measurements and any calculations made. Use tables, charts, or graphs to present data clearly. Discuss any trends, patterns, or significant observations. Interpret the data in the context of the experiment's objectives. Ensure that all figures, tables, and equations are correctly labeled.





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- **Results:** Summarize the key findings of the experiment. Present results in a clear and organized manner using tables and graphs. Include units of measurement and labels for data points.
- **Conclusion:** Provide a concise summary of the experiment's key points and outcomes.

GRADING AND ASSESSMENT

- **Program writing:** 10 marks
- **Program Implementation:** 10 marks
- **File Maintenance:** 10 marks
- **Viva:** 10 marks
- **Attendance:** 10 marks
- **Lab Overall Marks:** 50 marks

COURSE POLICIES

- **Attendance:** Minimum 75% attendance is mandatory to appear in the final examination of the course.
- **Late Submissions:** Manuals and projects must be submitted by the specified timelines.

FACULTY INFORMATION

- **Office Hours**
Monday (12:05 PM - 12:55 PM)
Friday (12:55 PM - 1:45 PM)
- **Contact Information**
deepanshi.cse@mietjammu.in

RUBRICS FOR LAB CONTINUOUS EVALUATION

Parameters	Performance			Marks
	Low	Medium	High	
Execution of the Experiment	Student was not able to setup and conduct the Experiment completely	Student was able to setup and conduct the experiment but measurement/results/observations were not correct	Students was able to set and conduct the experiment and the measurement/results/observations were not correct	10
	0-2 Marks	3-6 Marks	7-10 Marks	
Record	Student was not able to describe the detailed procedure and could not record the measurement.	Students were able to describe the detailed procedure partially or with some inaccuracy.	Students were able to describe the detailed procedure accurately and record all measurements correctly.	10
	0-2 Marks	3-6 Marks	7-10 Marks	



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Viva Voice	Students could not demonstrate sufficient knowledge of foundation, functional or applied aspects related to the experiment during viva.	Students demonstrated sufficient knowledge of foundation, functional or applied aspects related to the experiment during viva.	Students demonstrate strong knowledge of foundation, functional or applied aspects related to the experiment during viva	10
	0-2 Marks	3-6 Marks	7-10 Marks	
Total Marks				30





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ACTIVITY : Create an HTML document with the different formatting options i.e., Bold, Italics, Underline, Headings (Using H1 to H6 heading styles).

Code:

```

1 <!DOCTYPE html>
2 <html lang="en">
3 <head>...
7 </head>
8 <body>
9   <h1>HTML Formatting Options</h1>
10
11   <h2>1. Headings</h2>
12   <p>HTML provides six levels of headings, from <code>&lt;h1&gt;</code> to <code>&lt;h6&gt;</code></p>
13   <h1>Heading 1</h1>
14   <h2>Heading 2</h2>
15   <h3>Heading 3</h3>
16   <h4>Heading 4</h4>
17   <h5>Heading 5</h5>
18   <h6>Heading 6</h6>
19
20   <h2>2. Text Formatting</h2>
21   <p>Below are examples of text formatting options:</p>
22
23   <p><b>Bold Text:</b> This is an example of <b>bold</b> text.</p>
24   <p><i>Italic Text:</i> This is an example of <i>italic</i> text.</p>
25   <p><u>Underlined Text:</u> This is an example of <u>underlined</u> text.</p>
26   <p><b><i>Bold and Italic Text:</i></b> This is an example of text that is both <b><i>bold and italic</i></b>.</p>
27
28   <h2>3. Combination Example</h2>
29   <p>
30     This is a <b>bold</b>, <i>italic</i>, and <u>underlined</u> example of formatted text. You can mix and match formatting styles as
31     needed.
32   </p>
33 </body>
34 </html>

```

Output:

HTML Formatting Options

1. Headings

HTML provides six levels of headings, from <h1> to <h6>:

Heading 1

Heading 2

Heading 3

Heading 4

Heading 5

Heading 6

2. Text Formatting

Below are examples of text formatting options:

Bold Text: This is an example of **bold** text.

Italic Text: This is an example of *italic* text.

Underlined Text: This is an example of underlined text.

Bold and Italic Text: This is an example of text that is both ***bold and italic***.

3. Combination Example

This is a **, *, and example of formatted text. You can mix and match formatting styles as needed.***





ACTIVITY : Create an HTML document with the different, Font (Type, Size and Color), Background (Colored background/Image in background), Paragraph, Line Break, Horizontal Rule, Pre tag.

Code:

```
1 <!DOCTYPE html>
2 <html>
3 <head>...
4 </head>
5 </head>
6 <style>
7   body {
8     color: ■rgb(255, 255, 255);
9     background-image: url(images/n.jpg);
10    background-size: cover;
11    background-repeat: no-repeat; }
12 </style>
13 <body>
14   <marquee><h1>Activity 2</h1></marquee>
15
16   <h1>Different HTML Elements</h1>
17
18   <h2>Font Element</h2>
19   <p>This text is in a <font face="Arial">different font</font>.</p>
20
21   <h2>Background Element</h2>
22   <p>This paragraph has a <font color="red">red background</font>.</p>
23
24   <h2>Paragraph Element</h2>
25   <p>This is a simple paragraph.</p>
26   <p>This is another paragraph.</p>
27
28   <h2>Line Break Element</h2>
29   <p>This paragraph has a line<br />break.</p>
30
31   <h2>Horizontal Rule Element</h2>
32   <hr />
33
34   <h2>Preformatted Text Element</h2>
35   <pre>
36   i am form
37     |         miet jammu
38     |         |         |
39     |         |         |
40   </pre>
41 </body></html>
```

Output :



Activity 2

Different HTML Elements

Font Element
This text is in a different font.

Background Element
This paragraph has a red background.

Paragraph Element
This is a simple paragraph.
This is another paragraph.

Line Break Element
This paragraph has a line break.

Horizontal Rule Element

Preformatted Text Element

```
I am from
  mi et jammu
  chanbyou
```



ACTIVITY : Create an HTML document which consists of: Ordered List, Unordered List, Nested ordered and/or unordered List and Image.

Code:

```

1  <!DOCTYPE html>
2  <html lang="en">
3  > <head> ...
7  </head>
8  <body>
9    <h1>HTML Lists Example</h1>
10
11   <h2>Ordered List</h2>
12   <ol>
13     <li>First item</li>
14     <li>Second item</li>
15     <li>Third item</li>
16   </ol>
17
18   <h2>Unordered List</h2>
19   <ul>
20     <li>Item one</li>
21     <li>Item two</li>
22     <li>Item three</li>
23   </ul>
24
25   <h2>Nested List</h2>
26   <ol>
27     <li>
28       First item
29       <ul>
30         <li>Sub-item one</li>
31         <li>Sub-item two</li>
32       </ul>
33     </li>
34     <li>Second item</li>
35   </ol>
36   <h2>Image</h2>
37   
38 </body>
39 </html>
40

```



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Output:

HTML Lists Example

Ordered List

1. First item
2. Second item
3. Third item

Unordered List

- Item one
- Item two
- Item three

Nested List

1. First item
 - Sub-item one
 - Sub-item two
2. Second item

Image



ACTIVITY : Create an HTML document which implements Internal linking as well as External linking Code:



```
1 <!DOCTYPE html>
2 <html lang="en">
3 > <head> ...
7 </head>
8 <body>
9   <h1>Welcome to My Webpage</h1>
10  <p>
11    This is an example of an HTML document with
12    internal and external links.
13  </p>
14  <a href="#section2">Go to Section 2</a>
15
16  <a href="https://www.google.com"
17    target="_blank">Visit google.com</a>
18
19  <h2 id="section1">Section 1</h2>
20  <p>This is the first section of the page.</p>
21
22  <h2 id="section2">Section 2</h2>
23  <p>This is the second section of the page.</p>
24
25  <h2 id="section3">Section 3</h2>
26  <p>This is the third section of the page.</p>
27 </body>
28 </html>
```

Output:

Welcome to My Webpage

This is an example of an HTML document with internal and external links.

[Go to Section 2](#) [Visit google.com](https://www.google.com)

Section 1

This is the first section of the page.

Section 2

This is the second section of the page.

Section 3

This is the third section of the page.



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ACTIVITY : Create a table using HTML demonstrating use of columns and rows, merging multiple rows and/or columns etc. With data and image values and contents with hyperlinking.

Code:





```

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>HTML Table Example</title>
7      <style>
8          table {
9              width: 100%;
10             border-collapse: collapse;
11         }
12         th, td {
13             border: 1px solid #ddd;
14             padding: 8px;
15             text-align: center;
16         }
17         th {
18             background-color: #f2f2f2;
19         }
20         img {
21             width: 50px;
22             height: 50px;
23         }
24     </style>
25 </head>
26 <body>
27
28 <h2>Sample HTML Table</h2>
29
30 <table>
31     <tr>
32         <th rowspan="2">Product</th>
33         <th colspan="2">Details</th>
34         <th rowspan="2">Price</th>
35     </tr>
36     <tr>
37         <th>Image</th>
38         <th>Link</th>
39     </tr>
40
41     <tr>
42         <td>Product 1</td>
43         <td></td>
44         <td><a href="https://example.com/product1" target="_blank">View Product</a></td>
45         <td>$10.00</td>
46     </tr>
47     <tr>
48         <td>Product 2</td>
49         <td></td>
50         <td><a href="https://example.com/product2" target="_blank">View Product</a></td>
51         <td>$15.00</td>
52     </tr>
53     <tr>
54         <td>Product 3</td>
55         <td></td>
56         <td><a href="https://example.com/product3" target="_blank">View Product</a></td>
57         <td>$20.00</td>
58     </tr>
59     <tr>
60         <td colspan="3">Total</td>
61         <td>$45.00</td>
62     </tr>
63 </table>
64 </body>
65 </html>

```



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Output:

Sample HTML Table

Product	Details		Price
	Image	Link	
Product 1		View Product	\$10.00
Product 2		View Product	\$15.00
Product 3		View Product	\$20.00
Total			\$45.00

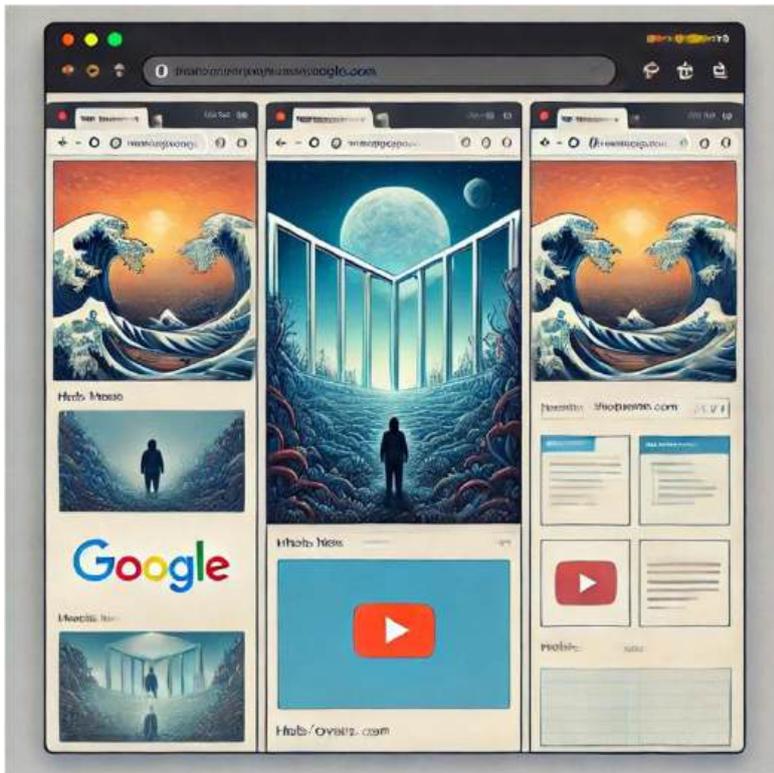
ACTIVITY : Create HTML documents having multiple frames in different possible formats/organization.

Code:



```
1 <!DOCTYPE html>
2 <html>
3 <head>
4   <title>Frameset Example</title>
5 </head>
6 <body>
7   <h1>Frameset Layouts</h1>
8
9   <!-- Vertical Layout -->
10  <frameset cols="50%,50%">
11    <frame src="https://example.com" name="frame1">
12    <frame src="https://www.wikipedia.org" name="frame2">
13  </frameset>
14
15  <hr>
16
17  <!-- Horizontal Layout -->
18  <frameset rows="50%,50%">
19    <frame src="https://www.google.com" name="frame3">
20    <frame src="https://www.github.com" name="frame4">
21  </frameset>
22
23  <hr>
24
25  <!-- Mixed Layout (Nested Frames) -->
26  <frameset rows="30%,70%">
27    <frame src="https://www.stackoverflow.com" name="frame5">
28    <frameset cols="50%,50%">
29      <frame src="https://www.youtube.com" name="frame6">
30      <frame src="https://www.reddit.com" name="frame7">
31    </frameset>
32  </frameset>
33
34  <noframes>
35    Your browser does not support frames. Please update to a modern browser.
36  </noframes>
37 </body>
38 </html>
39
```

Output : Modern browsers do not support `<frameset>` or `<frame>`



ACTIVITY : Design a bio data form using form and controls in HTML.

Code:



```
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>Bio Data Form</title>
7 </head>
8 <body>
9
10  <h1>Bio Data Form</h1>
11  <form action="/submit" method="post">
12
13    <!-- Personal Information -->
14    <fieldset>
15      <legend>Personal Information</legend>
16
17      <label for="name">Full Name:</label><br>
18      <input type="text" id="name" name="name" required><br><br>
19
20      <label for="dob">Date of Birth:</label><br>
21      <input type="date" id="dob" name="dob" required><br><br>
22
23      <label for="gender">Gender:</label><br>
24      <input type="radio" id="male" name="gender" value="Male">
25      <label for="male">Male</label><br>
26      <input type="radio" id="female" name="gender" value="Female">
27      <label for="female">Female</label><br><br>
28
29      <label for="nationality">Nationality:</label><br>
30      <select id="nationality" name="nationality">
31        <option value="Indian">Indian</option>
32        <option value="American">American</option>
33        <option value="British">British</option>
34        <option value="Australian">Australian</option>
35      </select><br><br>
36
37      <label for="address">Address:</label><br>
38      <textarea id="address" name="address" rows="4" cols="50" required></textarea><br><br>
39    </fieldset>
40
41    <!-- Contact Information -->
42    <fieldset>
43      <legend>Contact Information</legend>
44
45      <label for="email">Email Address:</label><br>
46      <input type="email" id="email" name="email" required><br><br>
47
48      <label for="phone">Phone Number:</label><br>
49      <input type="tel" id="phone" name="phone" required><br><br>
50    </fieldset>
51
52    <!-- Submit -->
53    <input type="submit" value="Submit">
54
55  </form>
56
57 </body>
58 </html>
```



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Output:

Bio Data Form

Personal Information

Full Name:

Date of Birth:

Gender:
 Male
 Female

Nationality:

Address:

Contact Information

Email Address:

Phone Number:

ACTIVITY : Implementa on of CSS selectors.

Implementa on of Inter CSS

Implementa on of External CSS

Code:



```

2 <html>
3 <head>
4   <title>CSS Selectors.</title>
5 </head>
6 <link rel="stylesheet" href="style2.css" />
7 <body>
8   <h4>Element Selectors</h4>
9   <div>I am a div.</div>
10  <p>This is a paragraph.</p>
11  <h4>Class Selectors</h4>
12  <div class="red">This is another div.</div>
13  <p class="orange">This is another paragraph.</p>
14  <h4>Id Selectors</h4>
15  <div id="green">This is third div.</div>
16  <p id="aqua">This is third paragraph.</p>
17  <h4>Child Selectors</h4>
18  <div>
19    <p>This is a paragraph inside div.</p>
20    <article>Lorem ipsum dolor sit amet.</article>
21  </div>
22  <h4>Descendent Selector</h4>
23  <div>
24    <article>
25      <p>This is a paragraph inside article under div.</p>
26    </article>
27  </div>
28  <h4>Pseudo Selectors</h4>
29  <a target="_blank" href="http://www.google.com">Go to Google.</a>
30  <a href="http://www.wikipedia.org">Go to wikipedia.</a>
31  <br /><br />
32  <p><b>This is all for CSS Selectors.</b></p>
33 </body></html>

```

Output:



EXTERNAL CSS STYLE2.CSS:



```
1  div {
2  |   background-color: pink;
3  | }
4  p {
5  |   background-color: teal;
6  | }
7  b {
8  |   font-size: xx-large;
9  | }
10 h4{
11 |   background-color: indianred;
12 | }
13 /* Element Selectors */
14 .red {
15 |   background-color: red;
16 | }
17 .orange {
18 |   background-color: orange;
19 | }
20 /* Class Selector */
21 #aqua {
22 |   background-color: aqua;
23 | }
24 #green {
25 |   background-color: green;
26 | }
27 /* ID Selector */
28 div#p {
29 |   background-color: aqua;
30 | }
31 /* Child Selector */
32 div p {
33 |   background-color: antiquewhite;
34 | }
35 /* Decended Selector */
36 * {
37 |   padding: 0;
38 |   margin: 0;
39 | }
```

```
35 /* Decended Selector */
36 * {
37 |   padding: 0;
38 |   margin: 0;
39 | }
40 /* Universal Selector */
41 a:visited {
42 |   color: black;
43 | }
44 a:link {
45 |   color: greenyellow;
46 | }
47 a:hover {
48 |   background-color: blueviolet;
49 | }
50 a:active {
51 |   background-color: red;
52 | }
53 /* Pseudo Selectors */
54 p:first-child{
55 |   color: brown;
56 | }
57 /* First Child Selector */
```



ACTIVITY : Program in JavaScript to check given no is even or odd.

Code:

```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <title>Even or Odd Checker</title>
5 </head>
6 <body>
7   <h1>Check if a Number is Even or Odd</h1>
8   <div id="result"></div>
9
10  <script>
11    var number = 156;
12    var resultText = "";
13    if (number % 2 === 0) {
14      resultText = "The number " + number + " is Even.";
15    } else {
16      resultText = "The number " + number + " is Odd.";
17    }
18    document.getElementById("result").innerHTML = resultText;
19  </script>
20 </body>
21 </html>
22
```

Output:

Check if a Number is Even or Odd

The number 156 is Even.

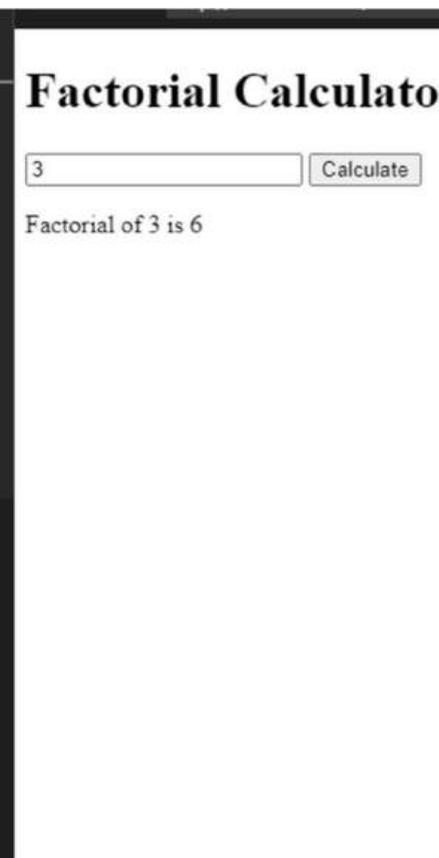


ACTIVITY : Program to calculate
factorial of a no

Program to generate series from 1
to 10.

Code a:

```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <title>Factorial Calculator</title>
5 </head>
6 <body>
7   <h1>Factorial Calculator</h1>
8
9   <input type="number" id="number" placeholder="Enter a
10  number">
11   <button onclick="calculateFactorial()">Calculate</button>
12
13   <p id="result"></p>
14
15   <script>
16     function calculateFactorial() {
17       let num = document.getElementById('number').value;
18       let factorial = 1;
19
20       for (let i = 1; i <= num; i++) {
21         factorial *= i;
22       }
23
24       document.getElementById('result').innerHTML =
25         `Factorial of ${num} is ${factorial}`;
26     }
27   </script>
28 </body>
29 </html>
```



Code b



```

1 <!DOCTYPE html>
2 <html lang="en">
3 > <head>...
7 </head>
8 <body>
9   <h1>Series from 1 to 10</h1>
10  <button onclick="generateSeries()">Generate
    Series</button>
11
12  <p id="result"></p>
13
14  <script>
15    function generateSeries() {
16      let series = "";
17      for (let i = 1; i <= 10; i++) {
18        series += i + " ";
19      }
20      document.getElementById('result').
        innerHTML = series;
21    }
22  </script>
23 </body>
24 </html>

```



ACTIVITY : Implementa on of inbuilt String func ons
in JavaScript Implementa on of inbuilt
Mathema cal func ons in JavaScript Code:

```

<!DOCTYPE html>
<html lang="en">
<head>
<title>String Functions in JavaScript</title>
</head>
<body>
<h1>Implementation of String Functions in JavaScript</h1>
<p>Open the browser console to see the output.</p>
<script>
console.log("String Inbuilt Functions Demonstration");

let str = " Hello, JavaScript! ";
console.log("Original String:", str);

// 1. trim() - Remove whitespace from both ends of a string
let trimmedStr = str.trim();
console.log("trim():", trimmedStr);

// 2. length - Get the length of the string
console.log("length:", trimmedStr.length);

// 3. toUpperCase() - Convert the string to uppercase
console.log("toUpperCase():", trimmedStr.toUpperCase());

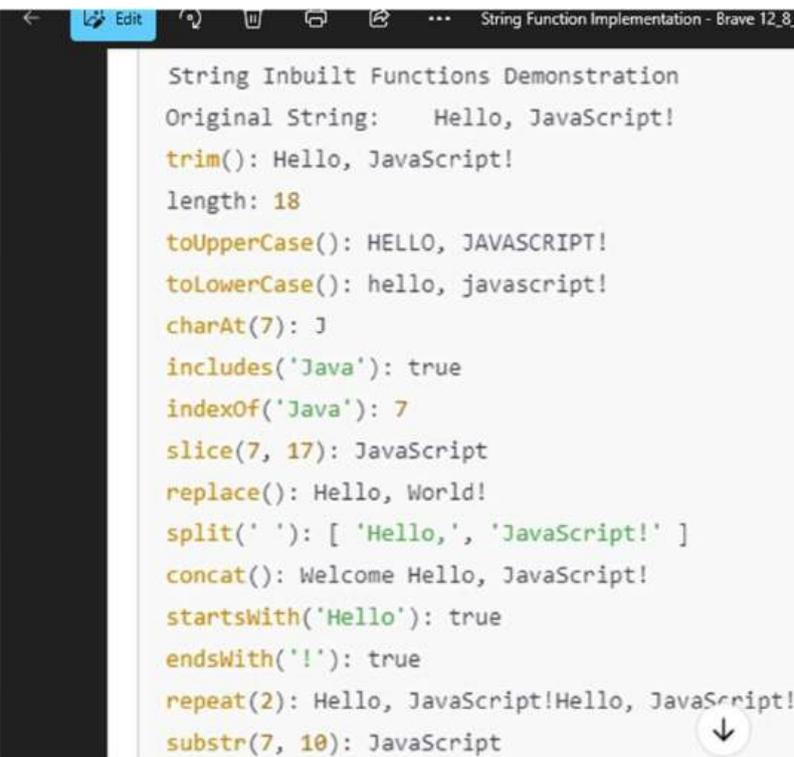
// 4. toLowerCase() - Convert the string to lowercase
console.log("toLowerCase():", trimmedStr.toLowerCase());

// 5. charAt() - Get a character at a specific index
console.log("charAt(7):", trimmedStr.charAt(7));

// 6. includes() - Check if the string contains a substring
console.log("includes('Java'):", trimmedStr.includes("Java"));

// 7. indexOf() - Find the first occurrence of a substring
console.log("indexOf('Java'):", trimmedStr.indexOf("Java"));

```





Code b:

<pre> JS act11b.js 1 console.log("Math.abs(-5):", Math.abs(-5)); 2 3 // Rounds a number up to the nearest integer 4 console.log("Math.ceil(4.2):", Math.ceil(4.2)); 5 6 // Rounds a number down to the nearest integer 7 console.log("Math.floor(4.8):", Math.floor(4.8)); 8 9 // Rounds a number to the nearest integer 10 console.log("Math.round(4.5):", Math.round(4.5)); 11 console.log("Math.round(4.4):", Math.round(4.4)); 12 13 // Returns the largest of zero or more numbers 14 console.log("Math.max(3, 7, 1, 9):", Math.max(3, 7, 1, 9)); 15 16 // Returns the smallest of zero or more numbers 17 console.log("Math.min(3, 7, 1, 9):", Math.min(3, 7, 1, 9)); 18 19 // Returns the square root of a number 20 console.log("Math.sqrt(16):", Math.sqrt(16)); 21 22 // Returns the base raised to the power of the exponent 23 console.log("Math.pow(2, 3):", Math.pow(2, 3)); 24 25 // Generates a random number between 0 (inclusive) and 1 (excl 26 console.log("Math.random():", Math.random()); 27 28 // Returns the natural logarithm (base e) of a number 29 console.log("Math.log(1):", Math.log(1)); 30 // Returns e raised to the power of a number 31 console.log("Math.exp(1):", Math.exp(1)); </pre>	<ol style="list-style-type: none"> 1. Math.abs(-5): 5 (Returns the absolute value.) 2. Math.ceil(4.2): 5 (Rounds up to the nearest integer.) 3. Math.floor(4.8): 4 (Rounds down to the nearest integer.) 4. Math.round(4.5): 5 Math.round(4.4): 4 (Rounds to the nearest integer.) 5. Math.max(3, 7, 1, 9): 9 (Returns the largest number.) 6. Math.min(3, 7, 1, 9): 1 (Returns the smallest number.) 7. Math.sqrt(16): 4 (Returns the square root.) 8. Math.pow(2, 3): 8 (2 raised to the power of 3.)
---	---

ACTIVITY : Implementa on of Arrays in JavaScript

Implementa on of

Strings Code a:



```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head><title>Array Operations</title>
4 </head>
5 <body style="font-size:50px;">
6 <h1>Array Operations</h1>
7 <button onclick="demo('push')">Push</button>
8 <button onclick="demo('pop')">Pop</button>
9 <button onclick="demo('unshift')">Unshift</button>
10 <button onclick="demo('shift')">Shift</button>
11 <button onclick="demo('length')">Length</button>
12 <button onclick="demo('indexOf')">IndexOf</button>
13 <button onclick="demo('splice')">Splice</button>
14
15 <div id="output">Output will appear here.</div>
16
17 <script>
18   let fruits = ["Apple", "Banana", "Orange"];
19
20   function demo(action) {
21     let output = "";
22     switch (action) {
23       case "push":
24         fruits.push("Mango");
25         output = `After Push: ${fruits}`;
26         break;
27       case "pop":
28         output = `Popped: ${fruits.pop()}, Remaining: ${fruits}`;
29         break;
30       case "unshift":
31         fruits.unshift("Peach");
32         output = `After Unshift: ${fruits}`;
33
34       case "unshift":
35         fruits.unshift("Peach");
36         output = `After Unshift: ${fruits}`;
37         break;
38       case "shift":
39         output = `Shifted: ${fruits.shift()}, Remaining: ${fruits}`;
40         break;
41       case "length":
42         output = `Array Length: ${fruits.length}`;
43         break;
44       case "indexOf":
45         output = `Index of 'Banana': ${fruits.indexOf("Banana")}`;
46         break;
47       case "splice":
48         fruits.splice(1, 1, "Grapes");
49         output = `After Splice: ${fruits}`;
50         break;
51     }
52     document.getElementById("output").innerText = output;
53   }
54 </script>
55 </body>
56 </html>
57
```

Output:





Array Operations

Push Pop Unshift Shift Length IndexOf Splice

Output will appear here.

Code b:

```

1
2 let msg1 = 'Single quote string';
3 let msg2 = "Double quote string";
4 let msg3 = `Template literal string`;
5
6 let userName = 'Yuvraj';
7 let greeting = 'Hello, ' + userName;
8
9 console.log("Original Strings:");
10 console.log(msg1);
11 console.log(msg2);
12 console.log(msg3);
13
14 let multiline = `This is a
15 multi-line string.`;
16 console.log("Multi-line String:");
17 console.log(multiLine);
18
19 let combinedMsg = msg1 + " " + msg2 + " " + msg3;
20 console.log("Concatenated String:");
21
22 let welcomeMsg = `Welcome, ${userName}`;
23 console.log("Interpolated String:");

```

Original Strings:

Single quote string

Double quote string

Template literal string

Multi-line String:

This is a

multi-line string.

Concatenated String:

Single quote string Double quote string Tem

Interpolated String:

Welcome, Yuvraj



ACTIVITY : Implementa on of alert and input func ons.

Code and output:

```

act13.html > html > body > script > showAlert
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4 <title>Alert and Prompt Example</title>
5 </head>
6 <body>
7 <h1>Alert and Prompt Func0 ons in JavaScript</h1>
8 <button onclick="showAlert()">Show Alert</button>
9 <button onclick="getUserInput()">Get User Input</button>
10 <script>
11 function showAlert() {
12 alert("This is an alert box!");
13 }
14 function getUserInput() {
15 let userName = prompt("Please enter your name:");
16 if (userName !== null && userName !== "") {
17 alert("Hello, " + userName + "!");
18 } else {
19 alert("You did not enter a name.");
20 }
21 }
22 </script>
23 </body>
24 </html>

```

Browser window showing an alert dialog: 127.0.0.1:5500 says "This is an alert box!". Buttons: Show Alert, Get User Input, OK.

ACTIVITY : Implementa on of
events in JavaScript Code and
output:



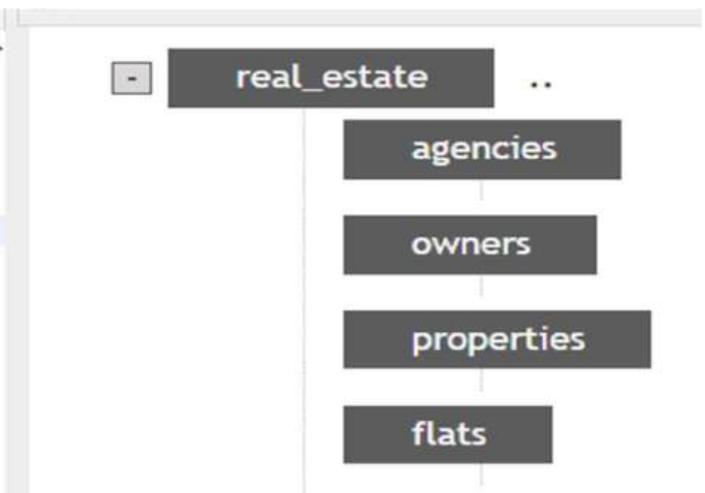
```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Event Handling</title>
</head>
<body>
  <button onclick="document.getElementById
('output').textContent = 'Button clicked!'">Click
Me</button>
  <input type="text" oninput="document.
getElementById('output').textContent = 'You
typed: ' + this.value">
  <div onmouseover="document.getElementById
('output').textContent = 'Hovering over box!'"
  onmouseout="document.getElementById
('output').textContent = 'Mouse out of box!'"
  style="width: 200px; height: 100px;
  background-color: lightblue;">
  Hover over me!
</div>
  <p id="output"></p>
</body>
</html>
```



ACTIVITY : Create an XML document with the following sample real estate data Root element real-estate will contain a sequence of sub-elements agencies, owners, proper es and flats, all with an empty content.

Code:

```
<?xml version="1.0" encoding="UTF-8"?>
<real_estate>
  <agencies />
  <owners />
  <properties />
  <flats />
</real_estate>
```





ACTIVITY : Create a PHP page using functions for comparing three integers and print the largest number.

Code and Output:

```
1 <?php
2 // Function to find the largest of three integers
3 function findLargest($num1, $num2, $num3): mixed {
4     if ($num1 >= $num2 && $num1 >= $num3) {
5         return $num1;
6     } elseif ($num2 >= $num1 && $num2 >= $num3) {
7         return $num2;
8     } else {
9         return $num3;
10    }
11 }
12
13 // Example usage
14 $num1 = 10;
15 $num2 = 20;
16 $num3 = 15;
17
18 // Call the function and print the result
19 $largest = findLargest(num1: $num1, num2: $num2, num3: $num3);
20 echo "The largest number among $num1, $num2, and $num3 is: $largest";
21 ?>
22
```

Output:

```
The largest number among 10, 20, and 15 is: 20
```

ACTIVITY : Write a PHP script that removes the whitespaces from a string. Sample string: 'The quick' 'brown fox'.

Code and Output :



```
1 <?php
2 // Define the sample string
3 $sampleString = 'The quick " "
4
5 brown fox';
6
7 // Remove all whitespace characters using preg_replace
8 $cleanedString = preg_replace(pattern: '/\s+/', replacement: '', subject: $sampleString);
9
10 // Output the cleaned string
11 echo "Original String: " . $sampleString . "\n";
12 echo "String without whitespaces: " . $cleanedString;
13 ?>
14
```

Output:

Output:

Original String: The quick " "

brown fox

String without whitespaces: Thequick""brownfox