

Frontend Web Development Practical Assignment

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B.SC CS(HONS)

230309

1 . Create an HTML document with following formatting Bold, Italics, Underline, Colors, Headings, Title, Font and Font Width, Background, Paragraph, Line Brakes, Horizontal Line, Blinking text as well as marquee text.

```
<body>
  <p><u>This text is underlined.</u></p>

  <p><em>This text is in italics.</em></p>

  <p><strong>This text is bold.</strong></p>

  <p class="blink">
    This text blinks!
  </p>

  <marquee>This text is in a marquee. Scroll to see more!</marquee>

  <hr>

  <p>This is a regular paragraph with <strong>bold</strong>, <em>italic</em>, and <u>underline</u> text. Also, <span
    style="color: red;">colored text</span>.</p>

  <p style="font-family: 'Courier New', monospace; font-size: 24px;">This text has a custom font and font size.</p>

  <p style="font-weight: 900;">This text has increased font weight.</p>

  <p style="background-color: black;color: white;">This paragraph has a custom background color.</p>

  <br>

  <p>This is another paragraph with line breaks.<br>Line breaks help in separating content.</p>
```

⇒ Code :-

Output :-

This text is underlined.

This text is in italics.

This text is bold.

This text blinks!

This text is in a marquee. Scroll to see more!

This is a regular paragraph with **bold**, *italic*, and underline text. Also, colored text.

This text has a custom font and font size.

This text has increased font weight.

This paragraph has a custom background color.

This is another paragraph with line breaks.
Line breaks help in separating content.

2 . Create an HTML document with Ordered and Unordered lists, Inserting Images, and External linking.

```
<body>
  <h2>Ordered List</h2>
  <ol>
    <li>Item 1</li>
    <li>Item 2</li>
    <li>Item 3</li>
  </ol>

  <h2>Unordered List</h2>
  <ul>
    <li>First Item</li>
    <li>Second Item</li>
    <li>Third Item</li>
  </ul>

  <h2>Image Insertion</h2>
  <p>Here's an example of an image:</p>
  

  <h2>External Linking</h2>
  <p>Visit the official website for more information:</p>
  <a href="https://www.pexels.com" target="_blank">Visit Example Website</a>
```

⇒ Code :-

⇒ Output :-

Ordered List

- 1. Item 1
- 2. Item 2
- 3. Item 3

Unordered List

- First Item
- Second Item
- Third Item

Image Insertion

Here's an example of an image:



External Linking

Visit the official website for more information:

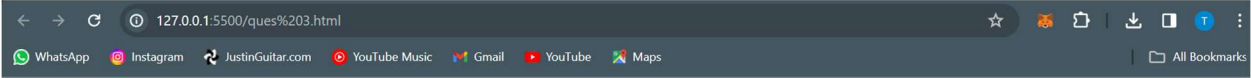
[Visit Example Website](https://www.pexels.com)

3 . Create an HTML document for displaying the current semester's timetable.

⇒ Code :-

```
1     <style>
2         .table {
3             display: flex;
4
5         }
6     </style>
7 </head>
8
9 <body>
10     <div>
11         <h1>Current Semester Timetable</h1>
12
13         <h2>Weekdays Schedule</h2>
14         <div class="table">
15             <div>
16                 <h3>Monday</h3>
17                 <ul>
18                     <li>9:00 AM - 10:30 AM: CSA</li>
19                     <li>11:00 AM - 12:30 PM: Maths</li>
20                     <li>2:00 PM - 3:30 PM: Frontend Web Development</li>
21                 </ul>
22             </div>
23
24             <div>
25                 <h3>Tuesday</h3>
26                 <ol>
27                     <li>10:00 AM - 11:30 AM: CSA</li>
28                     <li>1:00 PM - 2:30 PM: Python</li>
29                     <li>3:00 PM - 4:30 PM: Maths</li>
30                 </ol>
31             </div>
32             <div>
33                 <h3>Wednesday</h3>
34                 <ul>
35                     <li>9:30 AM - 11:00 AM: CSA</li>
36                     <li>12:00 PM - 1:30 PM: GE</li>
37                     <li>2:00 PM - 3:30 PM: SEC</li>
38                 </ul>
39             </div>
40             <div>
41                 <h3>Thursday</h3>
42                 <ol>
43                     <li>1:30 PM - 3:00 PM: Maths</li>
44                     <li>3:30 PM - 5:00 PM: AEC</li>
45                 </ol>
46             </div>
47             <div>
48                 <h3>Friday</h3>
49                 <ol>
50                     <li>10:30 AM - 12:00 PM: Python</li>
51                     <li>3:30 PM - 5:00 PM: VAC</li>
52                 </ol>
53             </div>
54         </div>
55     </div>
56
57 </body>
```

⇒ Output :-



Current Semester Timetable

Weekdays Schedule

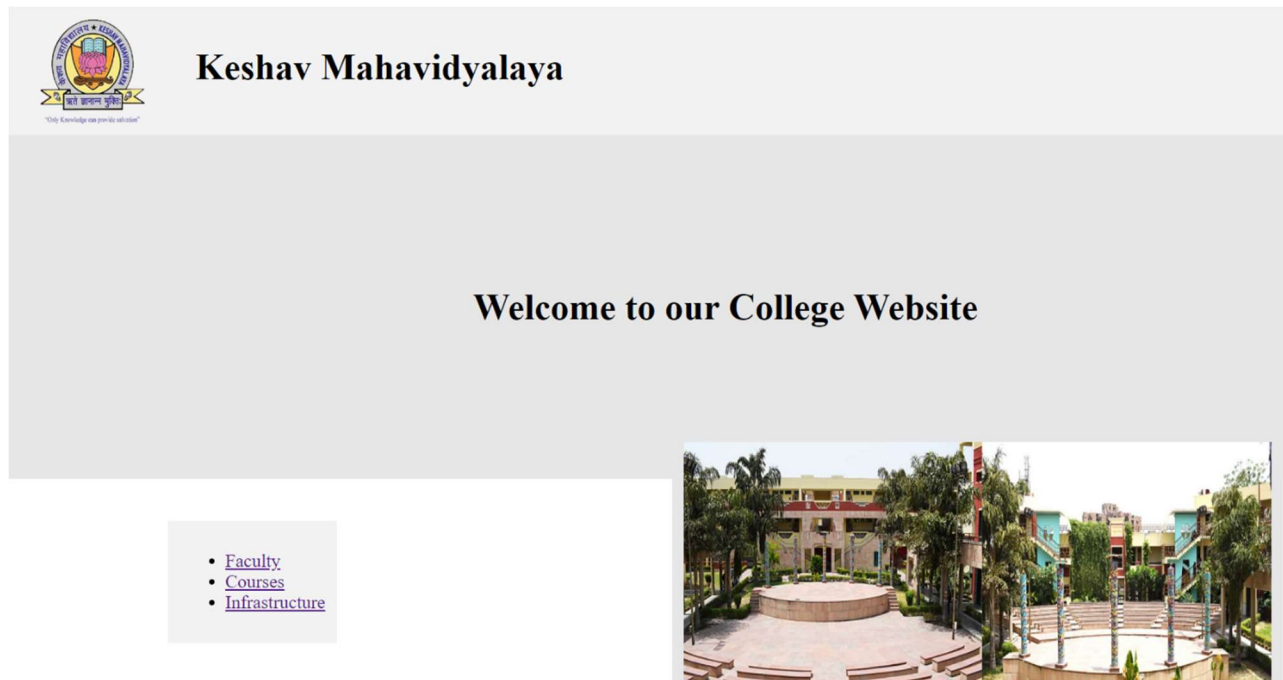
Monday	Tuesday	Wednesday	Thursday	Friday
<ul style="list-style-type: none">9:00 AM - 10:30 AM:CSA11:00 AM - 12:30 PM: Maths2:00 PM - 3:30 PM: Frontend Web Development	<ul style="list-style-type: none">1. 10:00 AM - 11:30 AM: CSA2. 1:00 PM - 2:30 PM: Python3. 3:00 PM - 4:30 PM: Maths	<ul style="list-style-type: none">9:30 AM - 11:00 AM: CSA12:00 PM - 1:30 PM: GE2:00 PM - 3:30 PM: SEC	<ul style="list-style-type: none">1. 1:30 PM - 3:00 PM:Maths2. 3:30 PM - 5:00 PM: AEC	<ul style="list-style-type: none">1. 10:30 AM - 12:00 PM: Python2. 3:30 PM - 5:00 PM: VAC

4 . Create a website with horizontal and vertical frames. Top horizontal frame needs to show your college's name and logo. Bottom horizontal frame is to be split into two vertical frames. The left frame has hyperlinks to pages related to faculty, courses, student etc. The right frame shows the corresponding webpage based on the link clicked on the left frame.

⇒ Code :-

```
1 <head>
2   <meta charset="UTF-8">
3   <meta name="viewport" content="width=device-width, initial-scale=1.0">
4   <title>Document</title>
5   <style>
6     body {
7       display: flex;
8       flex-direction: column;
9       height: 100vh;
10      margin: 0;
11    }
12
13    .navbar {
14      display: flex;
15      align-items: center;
16      gap: 40px;
17      padding: 10px 30px;
18      background-color: #f2f2f2;
19    }
20
21    .navbar h1 {
22      text-align: center;
23    }
24
25    .navbar img {
26      height: 100px;
27      width: 100px;
28    }
29
30    .heading {
31      display: flex;
32      align-items: center;
33      justify-content: center;
34      flex-grow: 1;
35      background-color: #e6e6e6;
36    }
37
38    .links-container {
39      display: flex;
40      height: 30vh;
41      align-items: center;
42      justify-content: space-around;
43    }
44
45    .links {
46      background-color: #f2f2f2;
47      padding: 10px;
48    }
49
50    .page {
51      background-color: #e6e6e6;
52      padding: 10px;
53    }
54
55    .page img {
56      height: 40vh;
57      width: 40vw;
58    }
59  </style>
60 </head>
61
62 <body>
63   <div class="navbar">
64     
65     <h1>Keshav Mahavidyalaya</h1>
66   </div>
67   <div class="heading">
68     <h1>Welcome to our College Website</h1>
69   </div>
70   <div class="links-container">
71     <div class="links">
72       <ul>
73         <li><a href="#" onClick="loadContent()"> Faculty</a></li>
74         <li><a href="#"> Courses</a></li>
75         <li><a href="#"> Infrastructure</a></li>
76       </ul>
77     </div>
78     <div class="page">
79       
80     </div>
81   </div>
82   <script>
83     function loadContent(page) {
84       fetch(`${page}.html`)
85         .then(response => response.text())
86         .then(html => {
87           document.getElementById('content-section').innerHTML = html;
88         })
89         .catch(error => console.error('Error loading content:', error));
90     }
91   </script>
92 </body>
93
```

⇒ Output :-



5 . Create a student registration form using HTML which has the following controls and make an content presentation using CSS.:

I. Text Box buttons.

II. Dropdown box III. Option/radio

IV. Check boxes V. Reset and Submit button

⇒ Code :-


```
1  <style>
2      body {
3          font-family: Arial, sans-serif;
4          background-color: #f2f2f2;
5          margin: 0;
6          padding: 0;
7          display: flex;
8          justify-content: center;
9          align-items: center;
10     }
11
12     form {
13         background-color: #ffffff;
14         padding: 20px;
15         border-radius: 10px;
16         box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);
17         width: 400px;
18     }
19
20     label {
21         display: block;
22         margin-bottom: 8px;
23     }
24
25     input,
26     select {
27         width: 100%;
28         padding: 10px;
29         margin-bottom: 15px;
30         border: 1px solid #ccc;
31         border-radius: 4px;
32         box-sizing: border-box;
33     }
34
35     input[type="radio"],
36     input[type="checkbox"] {
37         margin-right: 5px;
38     }
39
40     button {
41         background-color: #4caf50;
42         color: #fff;
43         padding: 10px 15px;
44         border: none;
45         border-radius: 4px;
46         cursor: pointer;
47     }
48
49     button[type="reset"] {
50         background-color: #f44336;
51     }
52 </style>
53 </head>
54
55 <body>
56
57     <form action="#" method="post">
58         <label for="firstName">First Name:</label>
59         <input type="text" id="firstName" name="firstName" required>
60
61         <label for="lastName">Last Name:</label>
62         <input type="text" id="lastName" name="lastName" required>
63
64         <label for="gender">Gender:</label>
65         <label><input type="radio" name="gender" value="male"> Male</label>
66         <label><input type="radio" name="gender" value="female"> Female</label>
67
68         <label for="course">Select Course:</label>
69         <select id="course" name="course">
70             <option value="engineering">Engineering</option>
71             <option value="science">Science</option>
72             <option value="business">Business</option>
73         </select>
74
75         <label for="subjects">Select Subjects:</label>
76         <label><input type="checkbox" name="subjects" value="math"> Math</label>
77         <label><input type="checkbox" name="subjects" value="physics"> Physics</label>
78         <label><input type="checkbox" name="subjects" value="chemistry"> Chemistry</label>
79
80         <button type="submit">Submit</button>
81         <button type="reset">Reset</button>
82     </form>
83
84 </body>
```


⇒ Output :-

First Name:

Aman

Last Name:

Singh

Gender:

☒ Male

☐ Female

Select Course:

Science

Select Subjects:

Math☒

Physics☒

Chemistry☒

Submit

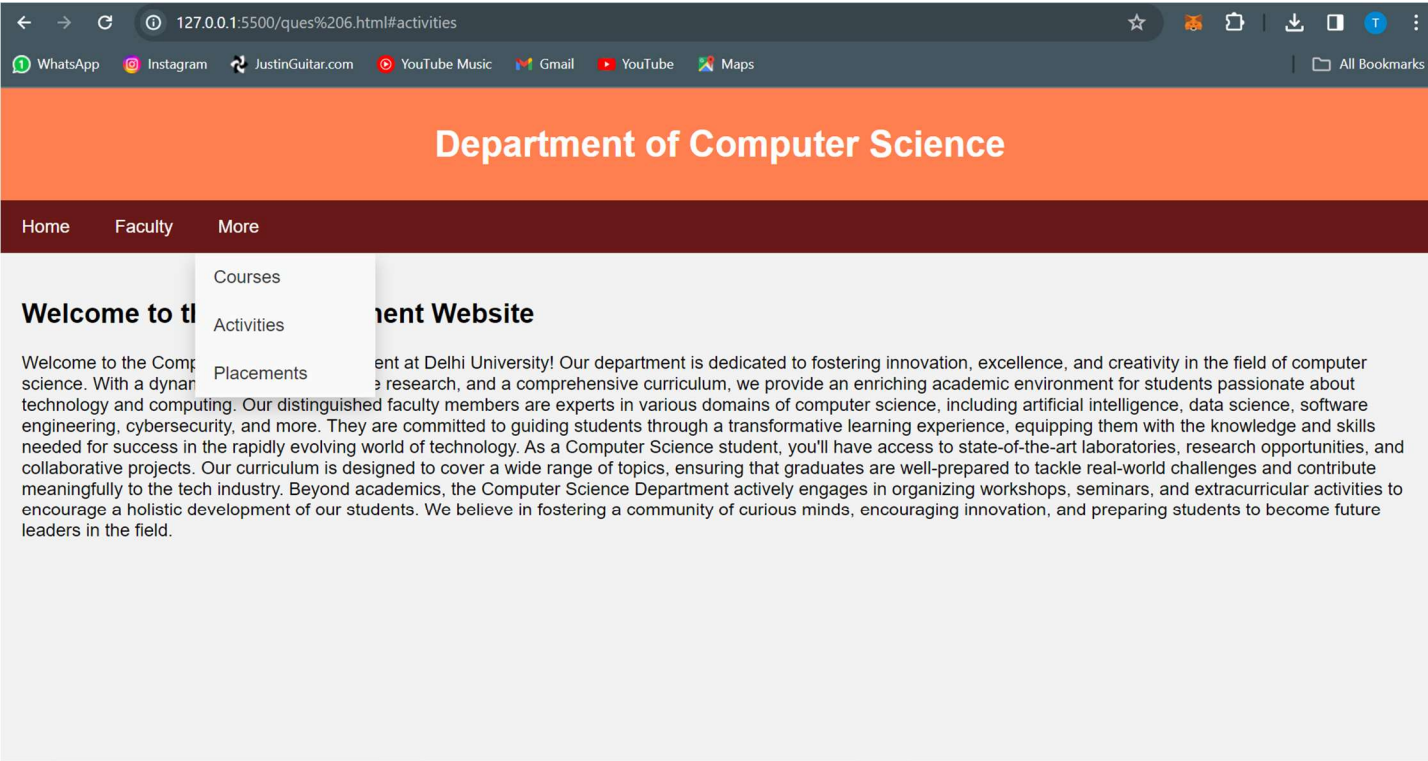
Reset

6 . Create a webpage for your department with a drop-down navigation menu for faculty, courses, activities, etc.. Implement the webpage using styles, rules, selectors etc. learned in CSS.

⇒ Code :-

```
1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5   <meta charset="UTF-8">
6   <meta name="viewport" content="width=device-width, initial-scale=1.0">
7   <title>CS Department Website</title>
8   <style>
9     body {
10       font-family: Arial, sans-serif;
11       margin: 0;
12       padding: 0;
13       background-color: #f2f2f2;
14     }
15
16     header {
17       background-color: coral;
18       color: #fff;
19       padding: 10px;
20       text-align: center;
21     }
22
23     nav {
24       background-color: #691919;
25       overflow: hidden;
26     }
27
28     nav a {
29       float: left;
30       display: block;
31       color: #fff;
32       text-align: center;
33       padding: 14px 20px;
34       text-decoration: none;
35     }
36
37     nav a:hover {
38       background-color: #555;
39     }
40
41     .dropdown {
42       float: left;
43       overflow: hidden;
44     }
45
46     .dropdown .dropbtn {
47       font-size: 16px;
48       border: none;
49       outline: none;
50       color: #fff;
51       padding: 14px 20px;
52       background-color: inherit;
53       font-family: inherit;
54       margin: 0;
55     }
56
57     .dropdown-content {
58       display: none;
59       position: absolute;
60       background-color: #f9f9f9;
61       min-width: 160px;
62       box-shadow: 0 8px 16px 0 rgba(0, 0, 0, 0.2);
63       z-index: 1;
64     }
65
66     .dropdown-content a {
67       float: none;
68       color: #333;
69       padding: 12px 16px;
70       text-decoration: none;
71       display: block;
72       text-align: left;
73     }
74
75     .dropdown-content a:hover {
76       background-color: #ddd;
77     }
78
79     .dropdown:hover .dropdown-content {
80       display: block;
81     }
82
83     section {
84       padding: 20px;
85     }
86   </style>
87 </head>
88
89 <body>
90
91   <header>
92     <h1>Department of Computer Science</h1>
93   </header>
94
95   <nav>
96     <a href="#home">Home</a>
97     <a href="#faculty">Faculty</a>
98     <div class="dropdown">
99       <button class="dropbtn">More
100       <i class="fa fa-caret-down"></i>
101     </button>
102     <div class="dropdown-content">
103       <a href="#courses">Courses</a>
104       <a href="#activities">Activities</a>
105       <a href="#placements">Placements</a>
106     </div>
107   </div>
108 </nav>
109
110   <section>
111     <h2>Welcome to the CS Department Website</h2>
112     <p>Welcome to the Computer Science Department at Delhi University! Our department is dedicated to
113     fostering innovation, excellence, and creativity in the field of computer science. With a dynamic faculty,
114     cutting-edge research, and a comprehensive curriculum, we provide an enriching academic environment for
115     students passionate about technology and computing.
116
117     Our distinguished faculty members are experts in various domains of computer science, including artificial
118     intelligence, data science, software engineering, cybersecurity, and more. They are committed to guiding
119     students through a transformative learning experience, equipping them with the knowledge and skills needed
120     for success in the rapidly evolving world of technology.
121
122     As a Computer Science student, you'll have access to state-of-the-art laboratories, research opportunities,
123     and collaborative projects. Our curriculum is designed to cover a wide range of topics, ensuring that
124     graduates are well-prepared to tackle real-world challenges and contribute meaningfully to the tech
125     industry.
126
127     Beyond academics, the Computer Science Department actively engages in organizing workshops, seminars, and
128     extracurricular activities to encourage a holistic development of our students. We believe in fostering a
129     community of curious minds, encouraging innovation, and preparing students to become future leaders in the
130     field.
131
132   </p>
133 </section>
134
135 </body>
136
137 </html>
```

⇒ Output :-



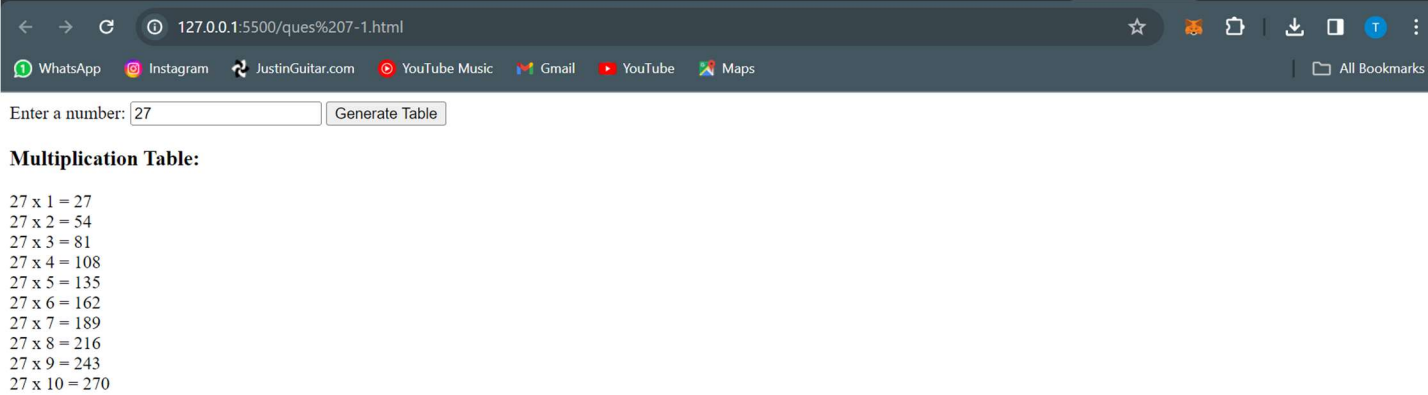
7 . Write event-driven programs in JavaScript for the following:

1. Enter a number and on click of a button print its multiplication table.

⇒ Code :-

```
1  <body>
2    <label for="number">Enter a number:</label>
3    <input type="number" id="number">
4    <button onClick="generateTable()">Generate Table</button>
5
6    <h3>Multiplication Table:</h3>
7    <div id="result"></div>
8
9    <script>function generateTable() {
10      const numberInput = document.getElementById("number");
11      const resultDiv = document.getElementById("result");
12
13      // Clear previous results
14      resultDiv.innerHTML = "";
15
16      const number = parseInt(numberInput.value);
17
18      if (isNaN(number)) {
19        resultDiv.innerHTML = "Please enter a valid number.";
20        return;
21      }
22
23      for (let i = 1; i <= 10; i++) {
24        resultDiv.innerHTML += `${number} x ${i} = ${number * i}<br>`;
25      }
26    }
27  </script>
28 </body>
```

⇒ Output :-

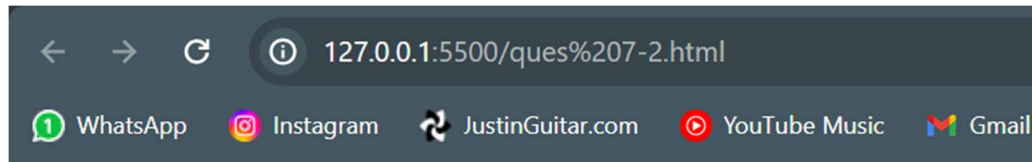


7.2 Print the largest of three numbers entered by the user.

=> Code :-

```
1 <body>
2   <label for="num1">Enter first number:</label>
3   <input type="number" id="num1">
4   <br>
5
6   <label for="num2">Enter second number:</label>
7   <input type="number" id="num2">
8   <br>
9
10  <label for="num3">Enter third number:</label>
11  <input type="number" id="num3">
12  <br>
13
14  <button onClick="findLargest()">Find Largest</button>
15
16  <h3>Largest Number:</h3>
17  <div id="result"></div>
18  <script>function findLargest() {
19      const num1 = parseInt(document.getElementById("num1").value);
20      const num2 = parseInt(document.getElementById("num2").value);
21      const num3 = parseInt(document.getElementById("num3").value);
22      const resultDiv = document.getElementById("result");
23
24      const largest = Math.max(num1, num2, num3);
25      resultDiv.innerHTML = `The largest number is: ${largest}`;
26  }
27  </script>
28 </body>
```

⇒ Output :-



Enter first number:

Enter second number:

Enter third number:

Largest Number:

The largest number is: 3

7.3 Find the factorial of a number entered by the user.

⇒ Code:-

```
1 <body>
2   <label for="factorialNumber">Enter a number:</label>
3   <input type="number" id="factorialNumber">
4   <button onClick="calculateFactorial()">Calculate Factorial</button>
5
6   <h3>Factorial:</h3>
7   <div id="result"></div>
8   <script>function calculateFactorial() {
9       const numberInput = document.getElementById("factorialNumber");
10      const resultDiv = document.getElementById("result");
11
12      resultDiv.innerHTML = "";
13
14      const number = parseInt(numberInput.value);
15
16      if (isNaN(number)) {
17          resultDiv.innerHTML = "Please enter a valid number.";
18          return;
19      }
20
21      let factorial = 1;
22      for (let i = 1; i <= number; i++) {
23          factorial *= i;
24      }
25
26      resultDiv.innerHTML = `The factorial of ${number} is: ${factorial}`;
27  }
28  </script>
29 </body>
```


⇒ Output :-



The screenshot shows a web browser window with the address bar displaying '127.0.0.1:5500/ques%207-3.html'. Below the address bar, there are several social media and utility icons: WhatsApp, Instagram, JustinGuitar.com, YouTube Music, and a Google icon. The main content area of the browser shows a form with the text 'Enter a number:' followed by a text input field containing the number '10'. To the right of the input field is a button labeled 'Calculate Factorial'.

Factorial:

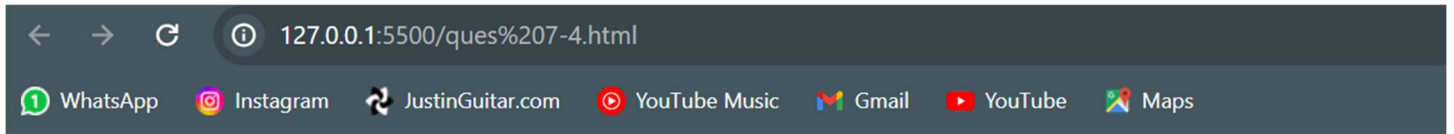
The factorial of 10 is: 3628800

7.4 Enter a list of positive numbers using the prompt terminated by a zero.
Find the sum and average of these numbers.

⇒ Code :-

```
1 <body>
2   <label for="numberList">Enter positive numbers with a comma in between (terminate with 0):</label>
3   <input type="text" id="numberList">
4   <button onClick="calculateSumAndAverage()">Calculate</button>
5
6   <h3>Sum and Average:</h3>
7   <div id="result"></div>
8   <script>function calculateSumAndAverage() {
9       const input = document.getElementById("numberList").value;
10      const numbers = input.split(',').map(Number);
11      const positiveNumbers = numbers.filter(num => num > 0);
12
13      const sum = positiveNumbers.reduce((acc, num) => acc + num, 0);
14      const average = sum / (positiveNumbers.length || 1);
15
16      const resultDiv = document.getElementById("result");
17      resultDiv.innerHTML = `Sum: ${sum}, Average: ${average.toFixed(2)}`;
18  }
19  </script>
20 </body>
```

⇒ Output :-



Enter positive numbers with a comma in between (terminate with 0):

Sum and Average:

Sum: 1634, Average: 544.67

8 . Create a student registration form using text, radio button, check box, drop down box, text field and all other required HTML elements. Customize the CSS and javascript to input and validate all data. Create functions to perform validation of each element, example:

- a. Roll number is a 7-digit numeric value
- b. Name should be an alphabetical value (String)
- c. Non-empty and valid fields like DOB

⇒ Code :-


```
1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5   <meta charset="UTF-8">
6   <meta name="viewport" content="width=device-width, initial-scale=1.0">
7   <title>Student Registration Form</title>
8   <style>
9     body {
10       font-family: Arial, sans-serif;
11       background-color: #f2f2f2;
12       margin: 0;
13       padding: 0;
14       display: flex;
15       justify-content: center;
16       align-items: center;
17     }
18
19     main {
20       display: flex;
21       flex-direction: column;
22     }
23
24     form {
25       background-color: #ffffff;
26       padding: 20px;
27       border-radius: 10px;
28       box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);
29       width: 400px;
30     }
31
32     label {
33       display: block;
34       margin-bottom: 8px;
35     }
36
37     input,
38     select {
39       width: 100%;
40       padding: 10px;
41       margin-bottom: 15px;
42       border: 1px solid #ccc;
43       border-radius: 4px;
44       box-sizing: border-box;
45     }
46
47     button {
48       background-color: #4caf50;
49       color: #fff;
50       padding: 10px 15px;
51       border: none;
52       border-radius: 4px;
53       cursor: pointer;
54     }
55
56     .error {
57       color: red;
58       font-size: 12px;
59       margin-left: 5px;
60     }
61   </style>
62 </head>
63
64 <body>
65   <div class="main">
66     <h1>Student Registration Form</h1>
67
68     <form id="registrationForm" onsubmit="return validateForm()">
69       <label for="name">Name:</label>
70       <input type="text" id="name" name="name" placeholder="Enter Your Name">
71       <span id="nameError" class="error"></span>
72       <label for="rollNumber">Roll Number:</label>
73       <input type="text" id="rollNumber" name="rollNumber" placeholder="Enter 7-digit Roll Number">
74       <span id="rollNumberError" class="error"></span>
75
76       <label for="gender">Gender:</label>
77       <input type="radio" id="male" name="gender" value="male">
78       <label for="male">Male</label>
79       <input type="radio" id="female" name="gender" value="female">
80       <label for="female">Female</label>
81       <span id="genderError" class="error"></span>
82
83       <label for="dob">Date of Birth:</label>
84       <input type="text" id="dob" name="dob" placeholder="YYYY-MM-DD">
85       <span id="dobError" class="error"></span>
86
87       <label for="courses">Select Course:</label>
88       <select id="courses" name="courses">
89         <option value="computerScience">Computer Science</option>
90         <option value="engineering">Engineering</option>
91         <option value="business">Business</option>
92       </select>
93
94       <label for="agree">I agree to the terms and conditions:</label>
95       <input type="checkbox" id="agree" name="agree" value="agree">
96       <span id="agreeError" class="error"></span>
97
98       <button type="submit">Submit</button>
99     </form>
100   </div>
101
102   <script>function validateForm() {
103     const rollNumber = document.getElementById("rollNumber").value;
104     const name = document.getElementById("name").value;
105     const gender = document.querySelector('input[name="gender"]:checked');
106     const dob = document.getElementById("dob").value;
107     const courses = document.getElementById("courses").value;
108     const agree = document.getElementById("agree").checked;
109
110     clearErrors();
111
112     if (!isNumeric(rollNumber) || rollNumber.length !== 7) {
113       showError("rollNumberError", "Roll number must be a 7-digit numeric value");
114       return false;
115     }
116
117     if (!isAlphabetic(name)) {
118       showError("nameError", "Name should be an alphabetical value");
119       return false;
120     }
121
122     if (!gender) {
123       showError("genderError", "Please select a gender");
124       return false;
125     }
126
127     if (!isValidDateOfBirth(dob)) {
128       showError("dobError", "Invalid date of birth format. Use YYYY-MM-DD");
129       return false;
130     }
131
132     if (courses === "") {
133       showError("coursesError", "Please select a course");
134       return false;
135     }
136
137     if (!agree) {
138       showError("agreeError", "You must agree to the terms and conditions");
139       return false;
140     }
141
142     return true;
143   }
144
145   function isNumeric(value) {
146     return !isNaN(value) && parseInt(value) == value;
147   }
148
149   function isAlphabetic(value) {
150     for (let i = 0; i < value.length; i++) {
151       const charCode = value.charCodeAt(i);
152       if (!((charCode >= 65 && charCode <= 90) || (charCode >= 97 && charCode <= 122))) {
153         return false;
154       }
155     }
156     return true;
157   }
158
159   function isValidDateOfBirth(value) {
160     const parts = value.split('-');
161     if (parts.length !== 3) return false;
162
163     const year = parseInt(parts[0]);
164     const month = parseInt(parts[1]);
165     const day = parseInt(parts[2]);
166
167     if (isNaN(year) || isNaN(month) || isNaN(day)) return false;
168     if (month < 1 || month > 12 || day < 1 || day > 31) return false;
169
170     return true;
171   }
172
173   function showError(id, message) {
174     const errorSpan = document.getElementById(id);
175     errorSpan.textContent = message;
176   }
177
178   function clearErrors() {
179     const errorSpans = document.querySelectorAll('.error');
180     errorSpans.forEach(span => span.textContent = "");
181   }
182 </script>
183 </body>
184 </html>
```

⇒ Output :-

Student Registration Form

Name:

Aman

Roll Number:

111111

Roll number must be a 7-digit numeric value

Gender:

☒

Male

☐

Female

Date of Birth:

2006-02-19

Select Course:

Computer Science

I agree to the terms and conditions:

☒

Submit

Thank You!!