A Practical file

on

Web Technology Lab

Submitted in partial fulfillment of the requirements for the award of the degree of

B.Tech.

In

Computer Science & Engineering

Submitted By:

School of Computing Science & Engineering

Galgotias University Greater Noida, Uttar Pradesh 203201

June 2024

Objective:

The objective of this lab is to develop an ability to design and implementstatic and dynamic website.

OUTCOMES:

At the end of the course, students should be able to:

- Design and implement dynamic websites with good aesthetic sense ofdesigning and latest technical know-how's.
- Have a Good grounding of Web Application Terminologies,Internet Tools,E – Commerce and other web services.

EXPERIMENT 1

Write a simple HTML code to display data / content on a web page.

AIM-To create a html PROGRAM to display content on a web page

PROGRAM

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Simple HTML Page</title>
   <style>
      body {
         font-family: Arial, sans-serif;
         margin: 20px;
      }
      h1 {
         color: #333;
      }
      table {
         width: 50%;
         border-collapse: collapse;
         margin: 20px 0;
      }
      table, th, td {
         border: 1px solid #ccc;
      }
      th, td {
         padding: 10px;
         text-align: left;
      }
   </style>
</head>
<body>
   <h1>Welcome to My Simple Web Page</h1>
   <p>This is a paragraph of text that provides some information about the
content of this page. Below is a table displaying some data.</p>

   <table>
      <thead>
```

```
        <tr>
          <th>Name</th>
          <th>Age</th>
          <th>City</th>
        </tr>
      </thead>
      <tbody>
        <tr>
          <td>John Doe</td>
          <td>28</td>
          <td>New York</td>
        </tr>
        <tr>
          <td>Jane Smith</td>
          <td>34</td>
          <td>Los Angeles</td>
        </tr>
        <tr>
          <td>Emily Johnson</td>
          <td>22</td>
          <td>Chicago</td>
        </tr>
      </tbody>
    </table>
</body>
</html>
```

OUTPUT

Welcome to My Simple Web Page

This is a paragraph of text that provides some information about the content of this page. Below is a table displaying some data.

Name	Age	City
John Doe	28	New York
Jane Smith	34	Los Angeles
Emily Johnson	22	Chicago

EXPERIMENT 2

Write an HTML code to display your CV on a web page

AIM-TO display CV on a web page using HTML

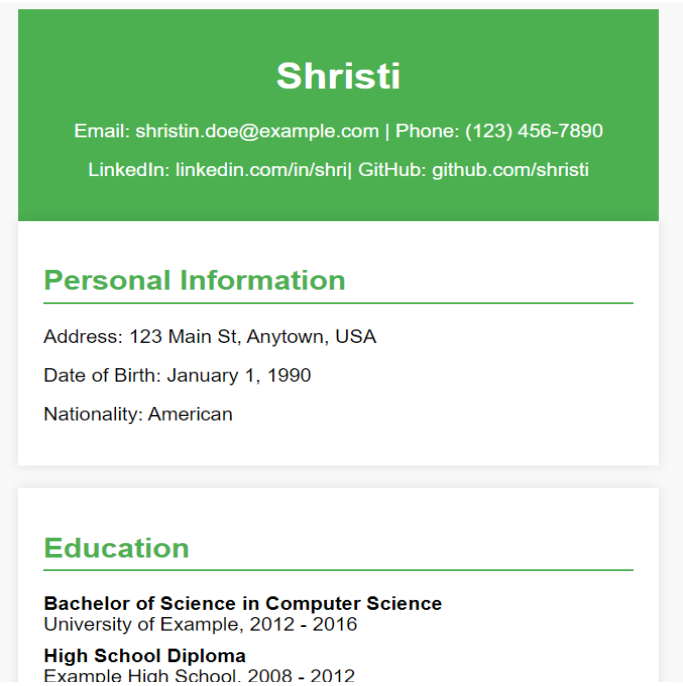
PROGRAM-

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>My CV</title>
    <style>
        body {
            font-family: Arial, sans-serif;
            margin: 40px;
            background-color: #f9f9f9;
        }
        header {
            text-align: center;
            padding: 20px;
            background-color: #4CAF50;
            color: white;
        }
        section {
            margin-bottom: 20px;
        }
        h2 {
            color: #4CAF50;
            border-bottom: 2px solid #4CAF50;
            padding-bottom: 5px;
        }
        .personal-info, .education, .work-experience, .skills {
            padding: 20px;
            background-color: #fff;
            box-shadow: 0 0 10px rgba(0,0,0,0.1);
        }
        ul {
            list-style-type: none;
            padding: 0;
        }
        ul li {
```

```
            margin: 10px 0;
        }
    </style>
</head>
<body>
    <header>
        <h1>John Doe</h1>
        <p>Email: john.doe@example.com | Phone: (123) 456-7890</p>
        <p>LinkedIn: linkedin.com/in/johndoe | GitHub: github.com/johndoe</p>
    </header>
    <section class="personal-info">
        <h2>Personal Information</h2>
        <p>Address: 123 Main St, Anytown, USA</p>
        <p>Date of Birth: January 1, 1990</p>
        <p>Nationality: American</p>
    </section>
    <section class="education">
        <h2>Education</h2>
        <ul>
            <li>
                <strong>Bachelor of Science in Computer Science</strong><br>
                University of Example, 2012 - 2016
            </li>
            <li>
                <strong>High School Diploma</strong><br>
                Example High School, 2008 - 2012
            </li>
        </ul>
    </section>
    <section class="work-experience">
        <h2>Work Experience</h2>
        <ul>
            <li>
                <strong>Software Engineer</strong><br>
                Tech Company, Anytown, USA | June 2016 - Present
                <ul>
                    <li>Developed and maintained web applications using HTML,
CSS, JavaScript, and React.</li>
                    <li>Collaborated with cross-functional teams to deliver high-
quality software products.</li>
                    <li>Implemented responsive design and ensured cross-browser
compatibility.</li>
                </ul>
```

```
        </li>
        <li>
          <strong>Intern</strong><br>
          Startup Inc, Anytown, USA | Summer 2015
          <ul>
            <li>Assisted in the development of a mobile app using Java and Android Studio.</li>
            <li>Conducted testing and debugging to ensure app stability and performance.</li>
          </ul>
        </li>
      </ul>
    </section>
    <section class="skills">
      <h2>Skills</h2>
      <ul>
        <li>PROGRAMming Languages: Java, Python, JavaScript</li>
        <li>Web Technologies: HTML, CSS, React, Node.js</li>
        <li>Tools: Git, Docker, Jenkins</li>
        <li>Soft Skills: Problem-solving, Communication, Teamwork</li>
      </ul>
    </section>
</body>
</html>
```

OUTPUT-



Work Experience

Software Engineer
Tech Company, Anytown, USA | June 2016 - Present

Developed and maintained web applications using HTML, CSS, JavaScript, and React.

Collaborated with cross-functional teams to deliver high-quality software products.

Implemented responsive design and ensured cross-browser compatibility.

Intern
Startup Inc, Anytown, USA | Summer 2015

Assisted in the development of a mobile app using Java and Android Studio.

Conducted testing and debugging to ensure app stability and performance.

Skills

Programming Languages: Java, Python, JavaScript

Web Technologies: HTML, CSS, React, Node.js

Tools: Git, Docker, Jenkins

Soft Skills: Problem-solving, Communication, Teamwork

EXPERIMENT 3

Write an HTML code to implement the concept of frames with 2 frames: 1 for hyperlinks and another for opening the content to that link

AIM-To implement the concept of frames

PROGRAM

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Frames Example</title>
</head>
<frameset cols="30%,70%">
   <frame name="menu" srcdoc="
      <!DOCTYPE html>
      <html lang='en'>
      <head>
         <meta charset='UTF-8'>
         <title>Menu</title>
         <style>
            body { font-family: Arial, sans-serif; padding: 10px; }
            a { display: block; margin-bottom: 10px; }
         </style>
      </head>
      <body>
         <h3>Menu</h3>
         <a href='content1.html' target='content'>Content 1</a>
         <a href='content2.html' target='content'>Content 2</a>
         <a href='content3.html' target='content'>Content 3</a>
      </body>
      </html>
   ">
   <frame name="content" srcdoc="
      <!DOCTYPE html>
      <html lang='en'>
      <head>
         <meta charset='UTF-8'>
         <title>Content</title>
         <style>
            body { font-family: Arial, sans-serif; padding: 20px; }
```

```
        </style>
      </head>
      <body>
        <h1>Welcome</h1>
        <p>Select a link from the left to view the content.</p>
      </body>
      </html>
  ">
</frameset>
</html>
```

OUTPUT-

Successfully implemented

EXPERIMENT-4

Design a responsive web page displaying your profile using bootstrap

AIM-To create a responsive web page using bootstrap

PROGRAM

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Profile Page</title>
    <!-- Bootstrap CSS -->
    <link
href="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css"
rel="stylesheet">
</head>
<body>
    <nav class="navbar navbar-expand-lg navbar-light bg-light">
        <a class="navbar-brand" href="#">My Profile</a>
        <button class="navbar-toggler" type="button" data-toggle="collapse" data-
target="#navbarNav" aria-controls="navbarNav" aria-expanded="false" aria-
label="Toggle navigation">
            <span class="navbar-toggler-icon"></span>
        </button>
        <div class="collapse navbar-collapse" id="navbarNav">
            <ul class="navbar-nav ml-auto">
                <li class="nav-item">
                    <a class="nav-link" href="#about">About</a>
                </li>
                <li class="nav-item">
                    <a class="nav-link" href="#skills">Skills</a>
                </li>
                <li class="nav-item">
                    <a class="nav-link" href="#contact">Contact</a>
                </li>
            </ul>
        </div>
    </nav>

    <div class="container mt-5">
```

```
        <div class="row">
            <div class="col-md-4 text-center">
                <img src="https://via.placeholder.com/150" class="rounded-circle
img-fluid" alt="Profile Picture">
            </div>
            <div class="col-md-8">
                <h1>shristi</h1>
                <p>Software Engineer</p>
                <p>Email: shri.doe@example.com</p>
                <p>Phone: (123) 456-7890</p>
                <p>LinkedIn: <a href="https://www.linkedin.com/in/shri"
target="_blank">linkedin.com/in/johndoe</a></p>
            </div>
        </div>

        <hr>

        <div id="about" class="mt-5">
            <h2>About Me</h2>
            <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vestibulum
ac nisi sit amet libero hendrerit faucibus. Integer vehicula libero non velit
pretium, ac dapibus libero tincidunt.</p>
        </div>

        <hr>

        <div id="skills" class="mt-5">
            <h2>Skills</h2>
            <ul>
                <li>JavaScript</li>
                <li>Python</li>
                <li>React</li>
                <li>Node.js</li>
            </ul>
        </div>

        <hr>

        <div id="contact" class="mt-5">
            <h2>Contact</h2>
            <form>
                <div class="form-group">
                    <label for="name">Name</label>
```

```
                <input type="text" class="form-control" id="name"
placeholder="Your Name">
            </div>
            <div class="form-group">
                <label for="email">Email address</label>
                <input type="email" class="form-control" id="email"
placeholder="name@example.com">
            </div>
            <div class="form-group">
                <label for="message">Message</label>
                <textarea class="form-control" id="message"
rows="3"></textarea>
            </div>
            <button type="submit" class="btn btn-primary">Submit</button>
        </form>
    </div>
</div>

<!-- Bootstrap JS and dependencies -->
<script src="https://code.jquery.com/jquery-3.5.1.slim.min.js"></script>
<script
src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.5.3/dist/umd/popper.min.j
s"></script>
<script
src="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/js/bootstrap.min.js"></s
cript>
</body>
</html>
```

OUTPUT-

My Profile

shristi

Software Engineer

Email: shri.doe@example.com

Phone: (123) 456-7890

LinkedIn: linkedin.com/in/johndoe

About Me

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vestibulum ac nisi sit amet libero hendrerit faucibus. Integer vehicula libero non velit pretium, ac dapibus libero tincidunt.

Skills

- JavaScript
- Python
- React
- Node.js

Contact

Name

Your Name

Email address

Message

Submit

EXPERIMENT-5

Write a code to create a navigation bar using Bootstrap and create a responsive website for your Institute.

AIM-To create a navigation bar and a responsive website using bootstrap

PROGRAM-

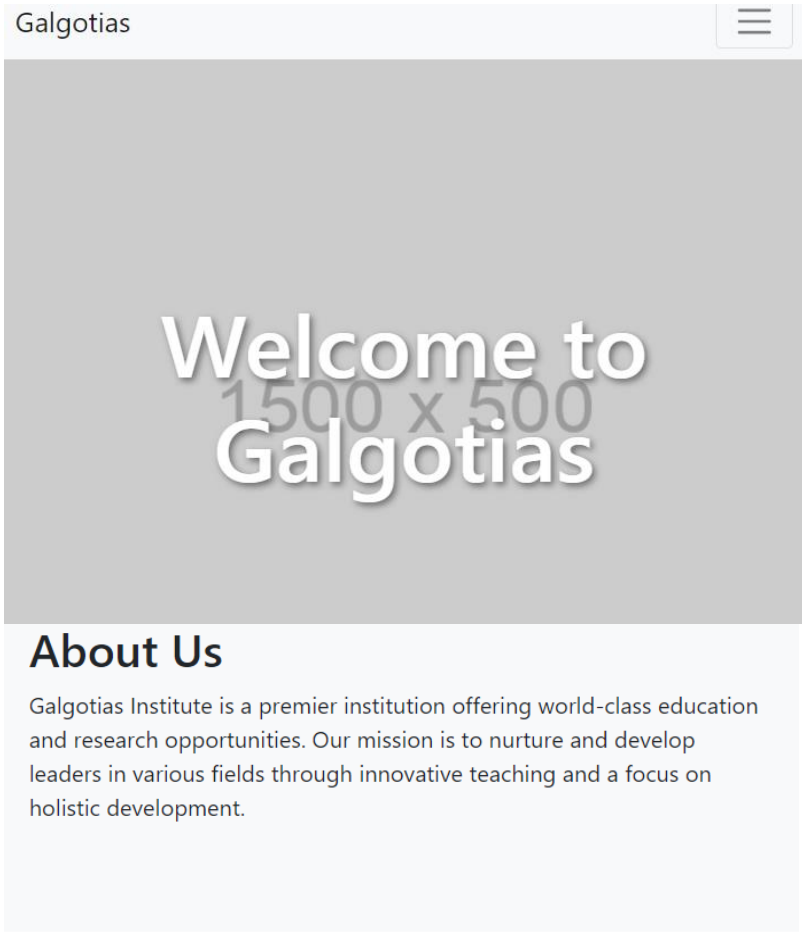
```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Galgotias Institute</title>
    <!-- Bootstrap CSS -->
    <link
href="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css"
rel="stylesheet">
    <style>
        .hero {
            background: url('https://via.placeholder.com/1500x500') no-repeat
center center;
            background-size: cover;
            height: 500px;
            color: white;
            text-align: center;
            display: flex;
            align-items: center;
            justify-content: center;
        }
        .hero h1 {
            font-size: 4em;
            text-shadow: 2px 2px 5px rgba(0, 0, 0, 0.5);
        }
        .section {
            padding: 60px 0;
        }
    </style>
</head>
<body>
    <!-- Navigation Bar -->
    <nav class="navbar navbar-expand-lg navbar-light bg-light">
        <a class="navbar-brand" href="#">Galgotias</a>
        <button class="navbar-toggler" type="button" data-toggle="collapse" data-
```

```
target="#navbarNav" aria-controls="navbarNav" aria-expanded="false" aria-label="Toggle navigation">
            <span class="navbar-toggler-icon"></span>
        </button>
        <div class="collapse navbar-collapse" id="navbarNav">
            <ul class="navbar-nav ml-auto">
                <li class="nav-item">
                    <a class="nav-link" href="#home">Home</a>
                </li>
                <li class="nav-item">
                    <a class="nav-link" href="#about">About</a>
                </li>
                <li class="nav-item">
                    <a class="nav-link" href="#courses">Courses</a>
                </li>
                <li class="nav-item">
                    <a class="nav-link" href="#contact">Contact</a>
                </li>
            </ul>
        </div>
    </nav>

    <!-- Hero Section -->
    <div id="home" class="hero">
        <h1>Welcome to Galgotias</h1>
    </div>

    <!-- About Section -->
    <div id="about" class="section bg-light">
        <div class="container">
            <h2>About Us</h2>
            <p>Galgotias Institute is a premier institution offering world-class education and research opportunities. Our mission is to nurture and develop leaders in various fields through innovative teaching and a focus on holistic development.</p>
        </div>
    </div>

    <!-- Courses Section -->
    <div id="courses" class="section">
        <div class="container">
            <h2>Our Courses</h2>
            <div class="row">
```

```
            <div class="col-md-4">
                <div class="card">
                    <img src="https://via.placeholder.com/350x200" class="card-
img-top" alt="Course 1">
                    <div class="card-body">
                        <h5 class="card-title">Computer Science</h5>
                        <p class="card-text">Learn about algorithms, data structures,
software engineering, and more.</p>
                    </div>
                </div>
            </div>
            <div class="col-md-4">
                <div class="card">
                    <img src="https://via.placeholder.com/350x200" class="card-
img-top" alt="Course 2">
                    <div class="card-body">
                        <h5 class="card-title">Electronics</h5>
                        <p class="card-text">Dive into the world of circuits, signal
processing, and microelectronics.</p>
                    </div>
                </div>
            </div>
            <div class="col-md-4">
                <div class="card">
                    <img src="https://via.placeholder.com/350x200" class="card-
img-top" alt="Course 3">
                    <div class="card-body">
                        <h5 class="card-title">Mechanical Engineering</h5>
                        <p class="card-text">Explore mechanics, thermodynamics,
materials science, and more.</p>
                    </div>
                </div>
            </div>
        </div>
    </div>

    <!-- Contact Section -->
    <div id="contact" class="section bg-light">
        <div class="container">
            <h2>Contact Us</h2>
            <form>
                <div class="form-row">
```

```
                <div class="form-group col-md-6">
                    <label for="name">Name</label>
                    <input type="text" class="form-control" id="name"
placeholder="Your Name">
                </div>
                <div class="form-group col-md-6">
                    <label for="email">Email</label>
                    <input type="email" class="form-control" id="email"
placeholder="Your Email">
                </div>
            </div>
            <div class="form-group">
                <label for="message">Message</label>
                <textarea class="form-control" id="message" rows="4"
placeholder="Your Message"></textarea>
            </div>
            <button type="submit" class="btn btn-primary">Send
Message</button>
        </form>
    </div>
</div>

<!-- Bootstrap JS and dependencies -->
<script src="https://code.jquery.com/jquery-3.5.1.slim.min.js"></script>
<script
src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.5.3/dist/umd/popper.min.j
s"></script>
<script
src="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/js/bootstrap.min.js"></s
cript>
</body>
</html>
```

OUTPUT-


Galgotias
Welcome to
1500 x 500
Galgotias
About Us
Galgotias Institute is a premier institution offering world-class education and research opportunities. Our mission is to nurture and develop leaders in various fields through innovative teaching and a focus on holistic development.
Our Courses

EXPERIMENT-6

Write a JavaScript to design a simple calculator to perform the following operations: sum, product, difference and quotient

AIM-To design a simple calculator using javascript

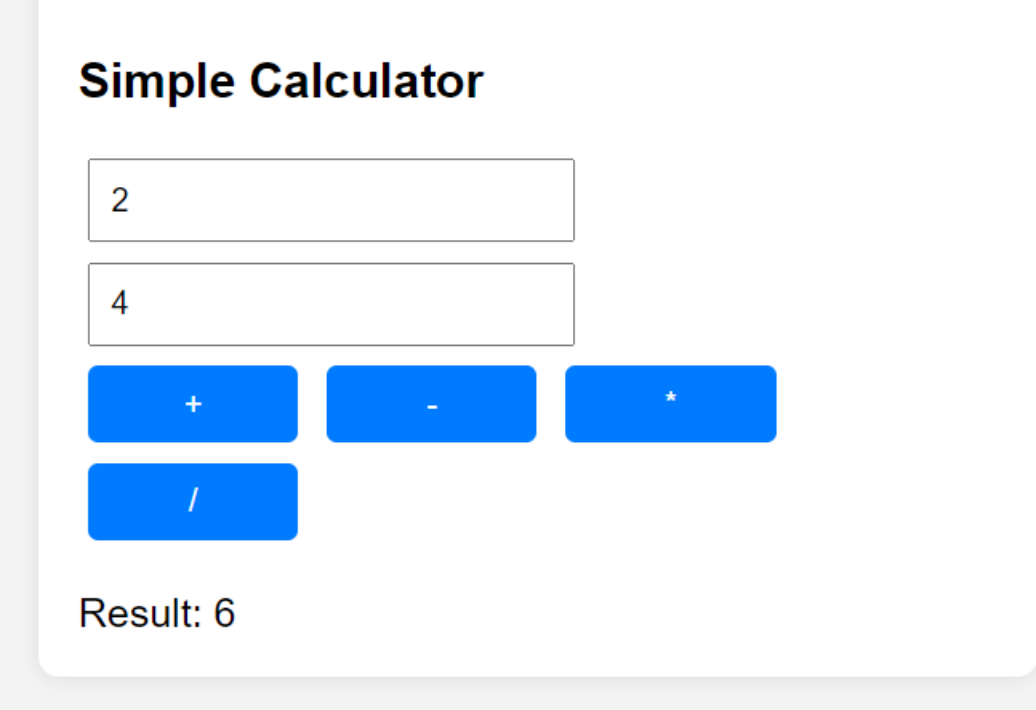
PROGRAM

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Simple Calculator</title>
    <style>
        body {
            font-family: Arial, sans-serif;
            display: flex;
            justify-content: center;
            align-items: center;
            height: 100vh;
            background-color: #f4f4f4;
            margin: 0;
        }
        .calculator {
            background: white;
            padding: 20px;
            border-radius: 10px;
            box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);
        }
        .calculator input {
            width: calc(50% - 10px);
            padding: 10px;
            margin: 5px;
            font-size: 16px;
        }
        .calculator button {
            width: calc(25% - 10px);
            padding: 10px;
            margin: 5px;
            font-size: 16px;
            background: #007bff;
            color: white;
            border: none;
```

```
            border-radius: 5px;
            cursor: pointer;
        }
        .calculator button:hover {
            background: #0056b3;
        }
        .result {
            margin-top: 20px;
            font-size: 20px;
        }
    </style>
</head>
<body>
    <div class="calculator">
        <h2>Simple Calculator</h2>
        <input type="number" id="num1" placeholder="First Number">
        <input type="number" id="num2" placeholder="Second Number">
        <br>
        <button onclick="calculate('sum')">+</button>
        <button onclick="calculate('difference')">-</button>
        <button onclick="calculate('product')">*</button>
        <button onclick="calculate('quotient')">/</button>
        <div class="result" id="result"></div>
    </div>

    <script>
        function calculate(operation) {
            var num1 = parseFloat(document.getElementById('num1').value);
            var num2 = parseFloat(document.getElementById('num2').value);
            var result = document.getElementById('result');

            if (isNaN(num1) || isNaN(num2)) {
                result.textContent = "Please enter valid numbers.";
                return;
            }

            var res;
            switch(operation) {
                case 'sum':
                    res = num1 + num2;
                    break;
                case 'difference':
                    res = num1 - num2;
```

```
                break;
            case 'product':
                res = num1 * num2;
                break;
            case 'quotient':
                if (num2 === 0) {
                    result.textContent = "Cannot divide by zero.";
                    return;
                }
                res = num1 / num2;
                break;
            default:
                res = "Invalid operation.";
        }

        result.textContent = "Result: " + res;
    }
  </script>
</body>
</html>
```

OUTPUT-



EXPERIMENT-7

Design HTML form for keeping student record and validate it using Java script.

AIM-To create a HTML form and validate it using javascript

PROGRAM

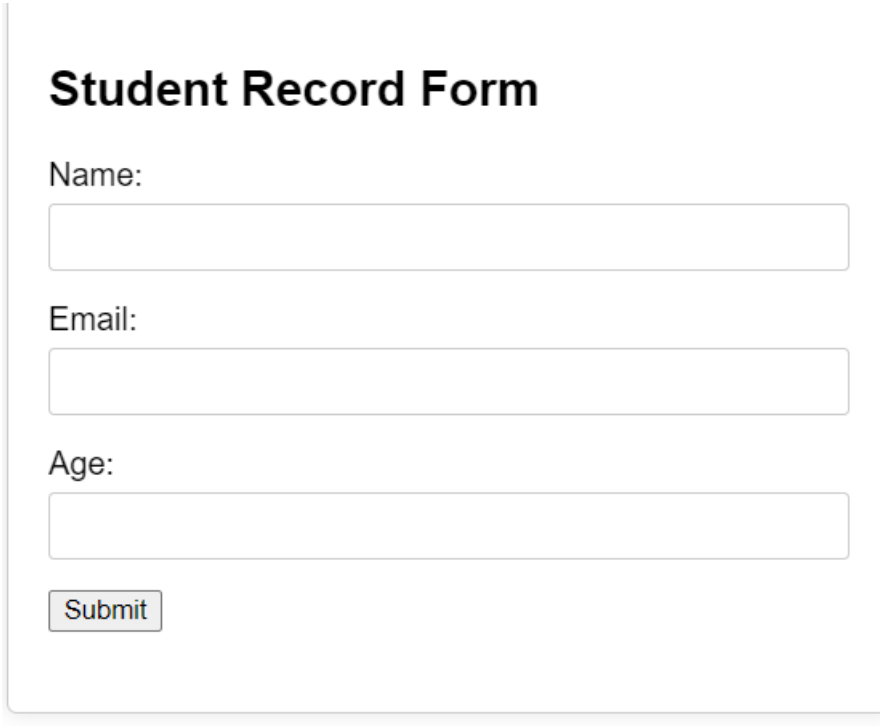
```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Student Record Form</title>
    <style>
        body {
            font-family: Arial, sans-serif;
            margin: 20px;
        }
        .form-container {
            max-width: 400px;
            margin: auto;
            padding: 20px;
            border: 1px solid #ccc;
            border-radius: 5px;
            box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);
        }
        .form-group {
            margin-bottom: 15px;
        }
        label {
            display: block;
            margin-bottom: 5px;
        }
        input[type="text"], input[type="email"], input[type="number"] {
            width: 100%;
            padding: 8px;
            box-sizing: border-box;
            border: 1px solid #ccc;
            border-radius: 3px;
        }
        .error {
            color: red;
            font-size: 0.9em;
```

```
        }
        .success {
            color: green;
            font-size: 1em;
            margin-top: 20px;
        }
    </style>
</head>
<body>
    <div class="form-container">
        <h2>Student Record Form</h2>
        <form id="studentForm" onsubmit="return validateForm()">
            <div class="form-group">
                <label for="name">Name:</label>
                <input type="text" id="name" name="name">
                <div id="nameError" class="error"></div>
            </div>
            <div class="form-group">
                <label for="email">Email:</label>
                <input type="email" id="email" name="email">
                <div id="emailError" class="error"></div>
            </div>
            <div class="form-group">
                <label for="age">Age:</label>
                <input type="number" id="age" name="age">
                <div id="ageError" class="error"></div>
            </div>
            <button type="submit">Submit</button>
            <div id="formSuccess" class="success"></div>
        </form>
    </div>

    <script>
        function validateForm() {
            // Clear previous error messages
            document.getElementById("nameError").innerHTML = "";
            document.getElementById("emailError").innerHTML = "";
            document.getElementById("ageError").innerHTML = "";
            document.getElementById("formSuccess").innerHTML = "";

            // Get form values
            var name = document.getElementById("name").value;
            var email = document.getElementById("email").value;
```

```
        var age = document.getElementById("age").value;

        var valid = true;

        // Validate name
        if (name.trim() === "") {
            document.getElementById("nameError").innerHTML = "Name is
required.";
            valid = false;
        }

        // Validate email
        if (email.trim() === "") {
            document.getElementById("emailError").innerHTML = "Email is
required.";
            valid = false;
        } else if (!validateEmail(email)) {
            document.getElementById("emailError").innerHTML = "Invalid
email format.";
            valid = false;
        }

        // Validate age
        if (age.trim() === "") {
            document.getElementById("ageError").innerHTML = "Age is
required.";
            valid = false;
        } else if (isNaN(age) || age <= 0) {
            document.getElementById("ageError").innerHTML = "Invalid age.";
            valid = false;
        }

        // If form is valid, show success message
        if (valid) {
            document.getElementById("formSuccess").innerHTML = "Form
submitted successfully!";
        }

        return valid;
    }

    function validateEmail(email) {
        var re = /^[^\s@]+@[^\s@]+\.[^\s@]+$/;
```

```
            return re.test(String(email).toLowerCase());
        }
    </script>
</body>
</html>
```

OUTPUT-



EXPERIMENT 8

Implementation of JSP to generate server side response Write a JSP code to generate dynamic webpage using server response Write a code to create a navigation bar using Bootstrap and create a responsive website for your Institute.

AIM-To generate serverside response webpage for out institute

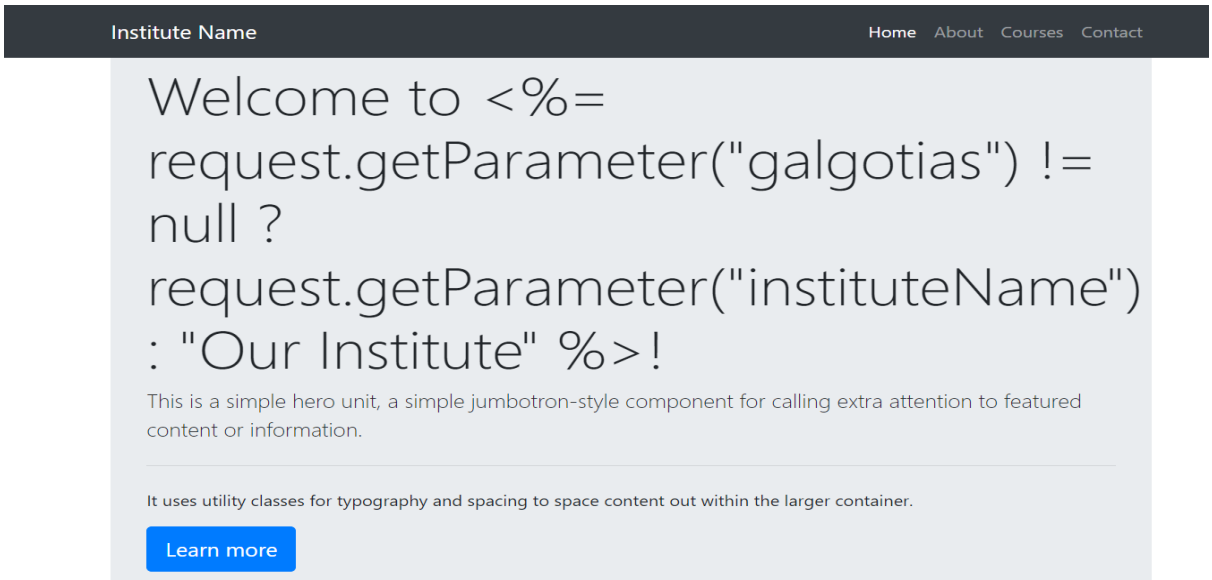
PROGRAM

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <title>Institute Home Page</title>
   <meta name="viewport" content="width=device-width, initial-scale=1,
shrink-to-fit=no">
   <link rel="stylesheet"
href="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css"
>
   <style>
      body {
         padding-top: 56px;
      }
      .jumbotron {
         margin-top: 20px;
      }
   </style>
</head>
<body>

<%-- Navigation Bar --%>
<nav class="navbar navbar-expand-lg navbar-dark bg-dark fixed-top">
   <div class="container">
      <a class="navbar-brand" href="#">Institute Name</a>
      <button class="navbar-toggler" type="button" data-toggle="collapse" data-
target="#navbarResponsive" aria-controls="navbarResponsive" aria-
expanded="false" aria-label="Toggle navigation">
         <span class="navbar-toggler-icon"></span>
      </button>
      <div class="collapse navbar-collapse" id="navbarResponsive">
```

```
            <ul class="navbar-nav ml-auto">
                <li class="nav-item active">
                    <a class="nav-link" href="#">Home
                        <span class="sr-only">(current)</span>
                    </a>
                </li>
                <li class="nav-item">
                    <a class="nav-link" href="#">About</a>
                </li>
                <li class="nav-item">
                    <a class="nav-link" href="#">Courses</a>
                </li>
                <li class="nav-item">
                    <a class="nav-link" href="#">Contact</a>
                </li>
            </ul>
        </div>
    </div>
</nav>

<%-- Dynamic Content --%>
<div class="container">
    <div class="jumbotron">
        <h1 class="display-4">Welcome to <%=
request.getParameter("instituteName") != null ?
request.getParameter("instituteName") : "Our Institute" %>!</h1>
        <p class="lead">This is a simple hero unit, a simple jumbotron-style
component for calling extra attention to featured content or information.</p>
        <hr class="my-4">
        <p>It uses utility classes for typography and spacing to space content out
within the larger container.</p>
        <a class="btn btn-primary btn-lg" href="#" role="button">Learn more</a>
    </div>

    <div class="row">
        <div class="col-lg-4">
            <h2>About Us</h2>
            <p>Our institute provides the best education in the region with
experienced faculty and state-of-the-art facilities.</p>
            <a class="btn btn-secondary" href="#" role="button">View details
»</a>
        </div>
        <div class="col-lg-4">
```

```
            <h2>Our Courses</h2>
            <p>We offer a wide range of courses that cater to different fields of study. Explore our courses and find the right one for you.</p>
            <a class="btn btn-secondary" href="#" role="button">View details »</a>
        </div>
        <div class="col-lg-4">
            <h2>Contact Us</h2>
            <p>Have any questions? Feel free to reach out to us. We're here to help you with any queries you might have.</p>
            <a class="btn btn-secondary" href="#" role="button">View details »</a>
        </div>
    </div>
</div>

<script src="https://code.jquery.com/jquery-3.5.1.slim.min.js"></script>
<script src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.9.2/dist/umd/popper.min.js"></script>
<script src="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/js/bootstrap.min.js"></script>
</body>
</html>
```

OUTPUT



EXPERIMENT 9

Write a **PROGRAM** using SERVLET and HTML to create a form and display the details entered by the user. Install and configure SERVLET: web server

AIM-To create a form using SERVLET and HTML

PROGRAM

```
import java.io.IOException;
import java.io.PrintWriter;

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

@WebServlet("/userDetails")
public class UserDetailsServlet extends HttpServlet {
   private static final long serialVersionUID = 1L;

   protected void doPost(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
      // Set response content type
      response.setContentType("text/html");

      // Get parameters from request
      String firstName = request.getParameter("firstName");
      String lastName = request.getParameter("lastName");
      String email = request.getParameter("email");
      String phone = request.getParameter("phone");

      // Create HTML response
      PrintWriter out = response.getWriter();
      out.println("<html><head><title>User Details</title></head><body>");
      out.println("<h2>User Details:</h2>");
      out.println("<p>First Name: " + firstName + "</p>");
      out.println("<p>Last Name: " + lastName + "</p>");
      out.println("<p>Email: " + email + "</p>");
      out.println("<p>Phone: " + phone + "</p>");
      out.println("</body></html>");
   }
}
```

HTML

```
<!DOCTYPE html>
<html>
<head>
   <title>User Details Form</title>
</head>
<body>
   <h2>User Details Form</h2>
   <form action="userDetails" method="post">
      <label for="firstName">First Name:</label>
      <input type="text" id="firstName" name="firstName" required><br><br>

      <label for="lastName">Last Name:</label>
      <input type="text" id="lastName" name="lastName" required><br><br>

      <label for="email">Email:</label>
      <input type="email" id="email" name="email" required><br><br>

      <label for="phone">Phone:</label>
      <input type="text" id="phone" name="phone" required><br><br>

      <input type="submit" value="Submit">
   </form>
</body>
</html>
```

OUTPUT

User Details:

```
"); out.println("

First Name: " + firstName + "

"); out.println("

Last Name: " + lastName + "

"); out.println("

Email: " + email + "

"); out.println("

Phone: " + phone + "

"); out.println(""); } }
```

EXPERIMENT 10

Create a Servlet/ JSP page for login system using session

AIM-To create a servlet for login session

PROGRAM

```
import java.io.IOException;
import java.io.PrintWriter;

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

@WebServlet("/login")
public class LoginServlet extends HttpServlet {
   private static final long serialVersionUID = 1L;

   protected void doPost(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
      // Get parameters from request
      String username = request.getParameter("username");
      String password = request.getParameter("password");

      // Validate credentials (This is a simple demo, actual validation should be
more robust)
      if (username.equals("admin") && password.equals("password")) {
         // Create a session if the credentials are valid
         HttpSession session = request.getSession(true);
         session.setAttribute("username", username);

         // Redirect to welcome page
         response.sendRedirect("welcome");
      } else {
         // If credentials are invalid, show error message
         response.setContentType("text/html");
         PrintWriter out = response.getWriter();
         out.println("<html><head><title>Login
Error</title></head><body>");
         out.println("<h2>Invalid username or password.</h2>");
         out.println("<a href=\"login.html\">Try again</a>");
```

```
            out.println("</body></html>");
        }
    }
}
```

HTML Login Form (`login.html`)

```html
<!DOCTYPE html>
<html>
<head>
    <title>Login</title>
</head>
<body>
    <h2>Login</h2>
    <form action="login" method="post">
        <label for="username">Username:</label>
        <input type="text" id="username" name="username" required><br><br>

        <label for="password">Password:</label>
        <input type="password" id="password" name="password" required><br><br>
```

Welcome Page (`welcome.jsp`)

```jsp
<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
    <title>Welcome</title>
</head>
<body>
    <h2>Welcome, <%= session.getAttribute("username") %>!</h2>
    <p>You are now logged in.</p>
    <p><a href="logout">Logout</a></p>
</body>
</html>
```

Logout Servlet (`LogoutServlet.java`)

```
import java.io.IOException;

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
```

```
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

@WebServlet("/logout")
public class LogoutServlet extends HttpServlet {
   private static final long serialVersionUID = 1L;

   protected void doGet(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
      // Invalidate session
      HttpSession session = request.getSession(false);
      if (session != null) {
         session.invalidate();
      }

      // Redirect to login page
      response.sendRedirect("login.html");
   }
}
```

OUTPUT

```
import java.io.IOException; import javax.servlet.ServletException; import
javax.servlet.annotation.WebServlet; import javax.servlet.http.HttpServlet; import
javax.servlet.http.HttpServletRequest; import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession; @WebServlet("/logout") public class
LogoutServlet extends HttpServlet { private static final long serialVersionUID = 1L;
protected void doGet(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException { // Invalidate session HttpSession session =
request.getSession(false); if (session != null) { session.invalidate(); } // Redirect to
login page response.sendRedirect("login.html"); } }
```

EXPERIMENT 11

Write simple Servlet/ JSP **PROGRAM** to set cookies and read it

AIM-To create a **PROGRAM** to set cookies

PROGRAM

SERVLET

```
import java.io.IOException;

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.Cookie;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

@WebServlet("/setCookie")
public class CookieSetterServlet extends HttpServlet {
   private static final long serialVersionUID = 1L;

   protected void doGet(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
      // Create a cookie
      Cookie cookie = new Cookie("username", "JohnDoe");

      // Set cookie expiration time to 24 hours
      cookie.setMaxAge(24 * 60 * 60);

      // Add cookie to the response
      response.addCookie(cookie);

      response.setContentType("text/html");
      response.getWriter().println("<html><body>");
      response.getWriter().println("<h2>Cookie set successfully!</h2>");
      response.getWriter().println("<a href='readCookie.jsp'>Read
Cookie</a>");
      response.getWriter().println("</body></html>");
   }
}
```

JSP Page (`readCookie.jsp`)

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
   <title>Read Cookie</title>
</head>
<body>
   <h2>Read Cookie</h2>
   <%
      Cookie[] cookies = request.getCookies();
      String username = null;
      if (cookies != null) {
         for (Cookie cookie : cookies) {
            if (cookie.getName().equals("username")) {
               username = cookie.getValue();
               break;
            }
         }
      }
      if (username != null) {
         out.println("<p>Welcome, " + username + "!</p>");
      } else {
         out.println("<p>No cookie found.</p>");
      }
   %>
</body>
</html>
```

OUTPUT

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
pageEncoding="UTF-8"%>

<h1>Read Cookie</h1>

<% Cookie[] cookies = request.getCookies(); String username = null; if (cookies !=
null) { for (Cookie cookie : cookies) { if (cookie.getName().equals("username")) {
username = cookie.getValue(); break; } } } if (username != null) { out.println("

Welcome, " + username + "!

"); } else { out.println("

No cookie found.

"); } %>
```

EXPERIMENT 12

Write a Servlet/ JSP **PROGRAM** for sending e-mail

AIM-TO create a **PROGRAM** for sending email

PROGRAM

SERVLET

```
import java.io.IOException;
import java.io.PrintWriter;
import java.util.Properties;

import javax.mail.*;
import javax.mail.internet.*;

@WebServlet("/sendEmail")
public class EmailSenderServlet extends HttpServlet {
   private static final long serialVersionUID = 1L;

   protected void doPost(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
      // Set response content type
      response.setContentType("text/html");

      // Sender's email address and password
      String senderEmail = "your.email@example.com";
      String senderPassword = "yourPassword";

      // Recipient's email address
      String recipientEmail = request.getParameter("recipientEmail");

      // SMTP server configuration
      Properties props = new Properties();
      props.put("mail.smtp.auth", "true");
      props.put("mail.smtp.starttls.enable", "true");
      props.put("mail.smtp.host", "smtp.example.com");
      props.put("mail.smtp.port", "587");

      // Get Session object
      Session session = Session.getInstance(props, new Authenticator() {
         protected PasswordAuthentication getPasswordAuthentication() {
```

```
            return new PasswordAuthentication(senderEmail, senderPassword);
        }
    });

    try {
        // Create a default MimeMessage object
        MimeMessage message = new MimeMessage(session);

        // Set From: header field of the header
        message.setFrom(new InternetAddress(senderEmail));

        // Set To: header field of the header
        message.addRecipient(Message.RecipientType.TO, new
InternetAddress(recipientEmail));

        // Set Subject: header field
        message.setSubject("Test Email from Servlet");

        // Now set the actual message
        message.setText("This is a test email sent from a Servlet.");

        // Send message
        Transport.send(message);

        PrintWriter out = response.getWriter();
        out.println("<html><head><title>Email Sent</title></head><body>");
        out.println("<h2>Email sent successfully to " + recipientEmail +
"!</h2>");
        out.println("</body></html>");
    } catch (MessagingException mex) {
        mex.printStackTrace();
        PrintWriter out = response.getWriter();
        out.println("<html><head><title>Email Error</title></head><body>");
        out.println("<h2>Error occurred while sending email.</h2>");
        out.println("<p>" + mex.getMessage() + "</p>");
        out.println("</body></html>");
    }
  }
}
```

OUTPUT

Email sent successfully to " + recipientEmail + "!

"); out.println(""); } catch (MessagingException mex) { mex.printStackTrace();
PrintWriter out = response.getWriter(); out.println(""); out.println("

Error occurred while sending email.

"); out.println("

" + mex.getMessage() + "

"); out.println(""); } } }

DATE	NAME	PAGE	SIGNATURE