

MCA-421(B) Lab on Web Technologies-I

Assignment 1. Design a webpage with HTML Form.

```
</html><!DOCTYPE html>

<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Contact Us</title>
    <style>
        body {
            font-family: Arial, sans-serif;
            background-color: #f4f4f4;
            padding: 20px;
        }
        .container {
            max-width: 600px;
            margin: auto;
            background-color: #fff;
            padding: 30px;
            box-shadow: 0 4px 8px rgba(0, 0, 0, 0.1);
        }
        h2 {
```

```
    text-align: center;  
}  
.form-group {  
    margin-bottom: 15px;  
}  
label {  
    display: block;  
    margin-bottom: 5px;  
}  
input, textarea {  
    width: 100%;  
    padding: 10px;  
    border: 1px solid #ccc;  
    border-radius: 4px;  
}  
button {  
    background-color: #4CAF50;  
    color: white;  
    padding: 10px 20px;  
    border: none;  
    border-radius: 4px;  
    cursor: pointer;  
}  
button:hover {  
    background-color: #45a049;
```

```
}

</style>

</head>

<body>

<div class="container">

    <h2>Contact Us</h2>

    <form action="/submit_form" method="POST">

        <div class="form-group">

            <label for="name">Full Name</label>

            <input type="text" id="name" name="name" placeholder="Your full name" required>

        </div>

        <div class="form-group">

            <label for="email">Email Address</label>

            <input type="email" id="email" name="email" placeholder="Your email address" required>

        </div>

        <div class="form-group">

            <label for="message">Message</label>

            <textarea id="message" name="message" rows="4" placeholder="Your message" required></textarea>

        </div>

        <button type="submit">Send Message</button>

    </form>

</div>

</body>
```

Assignment 2. Design a webpage using CSS.

Html Code :-

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Simple Webpage Design</title>
    <link rel="stylesheet" href="styles.css">
</head>
<body>
    <header>
        <div class="container">
            <h1>Welcome to My Webpage</h1>
            <nav>
                <ul>
```

```
<li><a href="#">Home</a></li>
<li><a href="#">About</a></li>
<li><a href="#">Services</a></li>
<li><a href="#">Contact</a></li>
</ul>
</nav>
</div>
</header>

<main>
<section class="hero">
<h2>Your Journey Begins Here</h2>
<p>Discover more about our services and how we can help you.</p>
<button>Learn More</button>
</section>

<section class="content">
<h2>Our Services</h2>
<div class="cards">
<div class="card">
<h3>Web Design</h3>
<p>Responsive and modern designs tailored to your needs.</p>
</div>
<div class="card">
```

```
<h3>SEO Optimization</h3>
<p>Improve your online visibility and search rankings.</p>
</div>
<div class="card">
<h3>Digital Marketing</h3>
<p>Effective strategies to grow your business online.</p>
</div>
</div>
</section>
</main>

<footer>
<div class="container">
<p> © 2024 My Webpage. All rights reserved.</p>
</div>
</footer>
</body>
</html>
```

Css Code :-

```
* {
margin: 0;
padding: 0;
box-sizing: border-box;
```

```
}

/* Body and layout */
body {
    font-family: Arial, sans-serif;
    line-height: 1.6;
    background-color: #f4f4f4;
}

/* Header */
header {
    background-color: #333;
    color: #fff;
    padding: 1rem 0;
}

header .container {
    width: 80%;
    margin: 0 auto;
    display: flex;
    justify-content: space-between;
    align-items: center;
}

header h1 {
```

```
    font-size: 2rem;  
}  
  
header nav ul {  
    list-style: none;  
    display: flex;  
}  
  
header nav ul li {  
    margin-left: 20px;  
}  
  
header nav ul li a {  
    color: #fff;  
    text-decoration: none;  
    font-size: 1rem;  
}  
  
/* Main content */  
main {  
    padding: 2rem 0;  
}  
  
.hero {  
    background-color: #2196F3;
```

```
    color: white;  
    text-align: center;  
    padding: 2rem 0;  
}
```

```
.hero h2 {  
    font-size: 2.5rem;  
}
```

```
.hero p {  
    font-size: 1.2rem;  
    margin-bottom: 1.5rem;  
}
```

```
.hero button {  
    padding: 0.8rem 2rem;  
    background-color: #fff;  
    color: #2196F3;  
    border: none;  
    font-size: 1rem;  
    cursor: pointer;  
    border-radius: 5px;  
}
```

```
.hero button:hover {
```

```
background-color: #ccc;  
}  
  
/* Services section */
```

```
.content {  
background-color: #fff;  
padding: 2rem 0;  
text-align: center;  
}
```

```
.content h2 {  
font-size: 2rem;  
margin-bottom: 2rem;  
}
```

```
.cards {  
display: flex;  
justify-content: space-around;  
gap: 20px;  
}
```

```
.card {  
background-color: #f4f4f4;  
padding: 2rem;  
width: 30%;
```

```
border-radius: 10px;  
box-shadow: 0 4px 8px rgba(0, 0, 0, 0.1);  
}  
  
}
```

```
.card h3 {  
    font-size: 1.5rem;  
    margin-bottom: 1rem;  
}  
  
}
```

```
.card p {  
    font-size: 1rem;  
}  
  
}
```

```
/* Footer */  
footer {  
    background-color: #333;  
    color: #fff;  
    padding: 1rem 0;  
    text-align: center;  
}  
  
}
```

```
footer p {  
    font-size: 1rem;  
}  
  
}
```

Assignment 3. Demonstrate different operators in JavaScript.

```
// Arithmetic Operators  
let a = 10, b = 3;  
console.log("Arithmetic Operators:");  
console.log("Addition: " + (a + b));  
console.log("Subtraction: " + (a - b));  
console.log("Multiplication: " + (a * b));  
console.log("Division: " + (a / b));  
console.log("Modulus: " + (a % b));  
console.log("Exponentiation: " + (a ** b));  
console.log("Increment: " + (++a));  
console.log("Decrement: " + (--b));
```

```
// Assignment Operators  
let x = 5;  
console.log("\nAssignment Operators:");  
x += 2;  
console.log("x after +=: " + x);  
x -= 1;  
console.log("x after -=: " + x);  
x *= 3;  
console.log("x after *=: " + x);  
x /= 2;
```

```
console.log("x after /=: " + x);
x %= 3;
console.log("x after %=: " + x);
```

// Comparison Operators

```
let p = 8, q = 5;
console.log("\nComparison Operators:");
console.log("Equal: " + (p == q));
console.log("Not Equal: " + (p != q));
console.log("Greater Than: " + (p > q));
console.log("Less Than: " + (p < q));
console.log("Greater Than or Equal: " + (p >= q));
console.log("Strict Equal: " + (p === 8));
console.log("Strict Not Equal: " + (p !== "8"));
```

// Logical Operators

```
let m = true, n = false;
console.log("\nLogical Operators:");
console.log("AND: " + (m && n));
console.log("OR: " + (m || n));
console.log("NOT m: " + (!m));
```

// Bitwise Operators

```
let r = 5, s = 3;
console.log("\nBitwise Operators:");
```

```
console.log("Bitwise AND: " + (r & s));
console.log("Bitwise OR: " + (r | s));
console.log("Bitwise XOR: " + (r ^ s));
console.log("Left Shift: " + (r << 1));
console.log("Right Shift: " + (r >> 1));
```

```
// Ternary Operator
let age = 18;
console.log("\nTernary Operator:");
let canVote = (age >= 18) ? "Yes" : "No";
console.log("Can vote: " + canVote);
```

```
// Type Operators
let variable = "Hello";
console.log("\nType Operators:");
console.log("Type of variable: " + typeof variable);
console.log("instanceof String: " + (variable instanceof String));
```

```
// String Operators
let firstName = "John", lastName = "Doe";
console.log("\nString Operators:");
console.log("Full Name: " + (firstName + " " + lastName));
```

```
// Unary Operators
let num = 10;
```

```
console.log("\nUnary Operators:");
console.log("Unary negation: " + (-num));
console.log("Typeof num: " + typeof num);

// Spread and Rest Operators
console.log("\nSpread and Rest Operators:");
let arr = [1, 2, 3];
console.log("Spread: " + [...arr, 4, 5]);
function sum(...numbers) {
    return numbers.reduce((acc, curr) => acc + curr, 0);
}
console.log("Rest: " + sum(1, 2, 3, 4));
```

Assignment 4. Demonstrate a HTML document using JavaScript to demonstrate Conditional & Looping Statements.

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Conditional & Looping Statements</title>
<style>
body {
    font-family: Arial, sans-serif;
    margin: 20px;
```

```
}
```

```
pre {
```

```
    background-color: #f4f4f4;
```

```
    padding: 10px;
```

```
    border-radius: 5px;
```

```
}
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<h1>JavaScript Conditional & Looping Statements</h1>
```

```
<h2>Results:</h2>
```

```
<pre id="output"></pre>
```



```
<script>
```

```
// Initialize an output string
```

```
let output = "";
```



```
// Conditional Statements
```

```
let number = 7;
```

```
if (number > 0) {
```

```
    output += `The number ${number} is positive.\n`;
```

```
} else if (number < 0) {
```

```
    output += `The number ${number} is negative.\n`;
```

```
} else {
```

```
    output += "The number is zero.\n";
```

```
}
```

```
// Using Switch Case
const day = new Date().getDay();
switch (day) {
    case 0:
        output += "Today is Sunday.\n";
        break;
    case 1:
        output += "Today is Monday.\n";
        break;
    case 2:
        output += "Today is Tuesday.\n";
        break;
    default:
        output += "Today is another day of the week.\n";
}
```

```
// Looping Statements
// Using a for loop
output += "\nCounting from 1 to 5 using a for loop:\n";
for (let i = 1; i <= 5; i++) {
    output += i + " ";
}
```

```
// Using a while loop
output += "\n\nCounting down from 5 to 1 using a while loop:\n";
let countdown = 5;
while (countdown > 0) {
    output += countdown + " ";
    countdown--;
}

// Using a do-while loop
output += "\n\nPrinting 'Hello' 3 times using a do-while loop:\n";
let count = 0;
do {
    output += "Hello ";
    count++;
} while (count < 3);

// Display the output
document.getElementById("output").textContent = output;
</script>
</body>
</html>
```

Assignment 5. Design a dynamic web form with validations using JavaScript.

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Dynamic Web Form</title>
<style>
body {
    font-family: Arial, sans-serif;
    margin: 20px;
}
.error {
    color: red;
    font-size: 0.9em;
}
.form-group {
    margin-bottom: 15px;
}
label {
    display: block;
    margin-bottom: 5px;
}
```

```
input {  
    width: 100%;  
    padding: 8px;  
    box-sizing: border-box;  
}  
  
button {  
    padding: 10px 15px;  
    background-color: #28a745;  
    color: #fff;  
    border: none;  
    cursor: pointer;  
}  
  
button:disabled {  
    background-color: #ccc;  
}  
  
</style>  
</head>  
<body>  
<h2>Dynamic Web Form</h2>  
<form id="dynamicForm">  
    <div class="form-group">  
        <label for="name">Name</label>  
        <input type="text" id="name" name="name" required>  
        <div id="nameError" class="error"></div>  
    </div>
```

```
<div class="form-group">
    <label for="email">Email</label>
    <input type="email" id="email" name="email" required>
    <div id="emailError" class="error"></div>
</div>

<div class="form-group">
    <label for="password">Password</label>
    <input type="password" id="password" name="password" required>
    <div id="passwordError" class="error"></div>
</div>

<div class="form-group">
    <label for="age">Age</label>
    <input type="number" id="age" name="age" required>
    <div id="ageError" class="error"></div>
</div>

<button type="submit" id="submitBtn" disabled>Submit</button>
</form>
```

```
<script>
document.addEventListener("DOMContentLoaded", function () {
    const form = document.getElementById('dynamicForm');
    const name = document.getElementById('name');
    const email = document.getElementById('email');
    const password = document.getElementById('password');
    const age = document.getElementById('age');
```

```
const submitBtn = document.getElementById('submitBtn');

const errors = { name: "", email: "", password: "", age: " " };

const validate = () => {
    errors.name = name.value.trim() === "" ? "Name is required" : "";
    errors.email = email.value.trim() === "" ||
    !/^\S+@\S+\.\S+$/test(email.value) ? "Valid email is required" : "";
    errors.password = password.value.length < 6 ? "Password must be at least 6 characters long" : "";
    const ageValue = Number(age.value);
    errors.age = !ageValue || ageValue < 18 || ageValue > 100 ? "Age must be between 18 and 100" : "";

    document.getElementById('nameError').innerText = errors.name;
    document.getElementById('emailError').innerText = errors.email;
    document.getElementById('passwordError').innerText = errors.password;
    document.getElementById('ageError').innerText = errors.age;

    submitBtn.disabled = Object.values(errors).some(error => error !== "");
};

form.addEventListener('input', validate);

form.addEventListener('submit', function (event) {
```

```
event.preventDefault();
alert('Form submitted successfully!');
form.reset();
validate();
});
});
</script>
</body>
</html>
```

Assignment 6. Design a webpage with Bootstrap.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Bootstrap Webpage</title>
    <!-- Bootstrap CSS -->
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/css/bootstrap.min.css" rel="stylesheet">
</head>
```

```
<body>

    <!-- Navbar -->

    <nav class="navbar navbar-expand-lg navbar-dark bg-dark">
        <div class="container">
            <a class="navbar-brand" href="#">MyWebsite</a>
            <button class="navbar-toggler" type="button" data-bs-
                toggle="collapse" data-bs-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 ms-auto">
                    <li class="nav-item">
                        <a class="nav-link active" href="#">Home</a>
                    </li>
                    <li class="nav-item">
                        <a class="nav-link" href="#">About</a>
                    </li>
                    <li class="nav-item">
                        <a class="nav-link" href="#">Services</a>
                    </li>
                    <li class="nav-item">
                        <a class="nav-link" href="#">Contact</a>
                    </li>
                </ul>
            </div>
        </div>
```

```
</div>

</nav>

<!-- Hero Section -->

<header class="bg-primary text-white text-center py-5">

    <div class="container">

        <h1>Welcome to MyWebsite</h1>

        <p class="lead">A simple and modern webpage designed with Bootstrap</p>

        <a href="#" class="btn btn-light btn-lg">Learn More</a>

    </div>

</header>

<!-- Features Section -->

<section class="py-5">

    <div class="container">

        <div class="row text-center">

            <div class="col-md-4">

                <div class="card shadow-sm">

                    <div class="card-body">

                        <h5 class="card-title">Feature One</h5>

                        <p class="card-text">Lorem ipsum dolor sit amet, consectetur adipiscing elit.</p>

                        <a href="#" class="btn btn-primary">Read More</a>

                    </div>

                </div>

            </div>

        </div>

    </div>

</section>
```

```
</div>

<div class="col-md-4">
  <div class="card shadow-sm">
    <div class="card-body">
      <h5 class="card-title">Feature Two</h5>
      <p class="card-text">Vestibulum ante ipsum primis in
faucibus orci luctus et.</p>
      <a href="#" class="btn btn-primary">Read More</a>
    </div>
  </div>
</div>

<div class="col-md-4">
  <div class="card shadow-sm">
    <div class="card-body">
      <h5 class="card-title">Feature Three</h5>
      <p class="card-text">Quisque id justo sit amet sapien
dignissim vestibulum.</p>
      <a href="#" class="btn btn-primary">Read More</a>
    </div>
  </div>
</div>

</div>
</div>
</section>

<!-- Footer -->
```

```
<footer class="bg-dark text-white text-center py-3">
  <div class="container">
    <p class="mb-0">© 2024 MyWebsite. All rights reserved.</p>
  </div>
</footer>

<!-- Bootstrap JS -->
<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/js/bootstrap.bundle.min.js"></script>
</body>
</html>
```

Assignment 7. Demonstrate the use of jQuery in a webpage.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>jQuery Example</title>
    <!-- jQuery CDN -->
    <script src="https://code.jquery.com/jquery-3.6.4.min.js"></script>
<style>
    #content {
        font-size: 18px;
        color: darkblue;
    }
    button {
        margin-top: 10px;
        padding: 10px 20px;
        background-color: blue;
        color: white;
        border: none;
        cursor: pointer;
    }
</style>
</head>
```

```
<body>
  <h1>Welcome to jQuery Example</h1>
  <div id="content">
    This is the original content.
  </div>
  <button id="changeContent">Change Content</button>

  <script>
    // jQuery script
    $(document).ready(function() {
      // When the button is clicked
      $('#changeContent').click(function() {
        // Change the text inside the #content div
        $('#content').text('This content has been changed using jQuery!');
        // Change the color
        $('#content').css('color', 'green');
      });
    });
  </script>
</body>
</html>
```

Assignment 8. Design a dynamic webpage using demonstrating the web technologies (HTML, JavaScript,Bootstrap, Angular JS, JQuery).

```
<!DOCTYPE html>
<html lang="en" ng-app="dynamicApp">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Dynamic Webpage</title>

  <!-- Bootstrap CSS -->
  <link
    href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/css/bootstrap.min.css" rel="stylesheet" />

  <!-- jQuery -->
  <script src="https://code.jquery.com/jquery-3.6.4.min.js"></script>

  <!-- AngularJS -->
  <script
    src="https://ajax.googleapis.com/ajax/libs/angularjs/1.8.2/angular.min.js"></script>

  <style>
```

```
.content-box {  
    border: 1px solid #ddd;  
    padding: 20px;  
    margin-bottom: 20px;  
    border-radius: 5px;  
    background-color: #fff;  
}  
</style>  
</head>  
<body ng-controller="MainController" class="bg-light">  
  
<!-- Navigation Bar -->  
<nav class="navbar navbar-expand-lg navbar-dark bg-dark">  
    <div class="container-fluid">  
        <a class="navbar-brand" href="#">Dynamic Webpage</a>  
        <button class="navbar-toggler" type="button" data-bs-  
            toggle="collapse" data-bs-target="#navbarNav">  
            <span class="navbar-toggler-icon"></span>  
        </button>  
        <div class="collapse navbar-collapse" id="navbarNav">  
            <ul class="navbar-nav">  
                <li class="nav-item">  
                    <a class="nav-link active" href="#">Home</a>  
                </li>  
                <li class="nav-item">  
                    <a class="nav-link" href="#features">Features</a>  
                </li>  
            </ul>  
        </div>  
    </div>  
</nav>
```

```
</li>

<li class="nav-item">
    <a class="nav-link" href="#contact">Contact</a>
</li>
</ul>
</div>
</div>
</nav>
```

```
<!-- Header Section -->

<header class="text-center py-5 bg-primary text-white">
    <h1>Welcome to Our Dynamic Webpage</h1>
    <p>Explore the best of modern web technologies.</p>
</header>
```

```
<!-- Features Section -->

<div class="container my-5" id="features">
    <h2 class="mb-4">Features</h2>
    <div class="row">
        <div class="col-md-4" ng-repeat="feature in features">
            <div class="content-box">
                <h4>{{ feature.title }}</h4>
                <p>{{ feature.description }}</p>
            </div>
        </div>
    </div>
```

```
</div>
</div>

<!-- Contact Section -->
<div class="container my-5" id="contact">
  <h2 class="mb-4">Contact Us</h2>
  <form id="contactForm">
    <div class="mb-3">
      <label for="name" class="form-label">Name</label>
      <input type="text" class="form-control" id="name" required>
    </div>
    <div class="mb-3">
      <label for="email" class="form-label">Email</label>
      <input type="email" class="form-control" id="email" required>
    </div>
    <div class="mb-3">
      <label for="message" class="form-label">Message</label>
      <textarea class="form-control" id="message" rows="4" required></textarea>
    </div>
    <button type="submit" class="btn btn-primary">Send Message</button>
  </form>
</div>

<!-- Footer -->
```

```
<footer class="text-center py-3 bg-dark text-white">
  <p>&copy; 2024 Dynamic Webpage. All rights reserved.</p>
</footer>

<!-- Bootstrap Bundle with Popper -->
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/js/bootstrap.bundle.min.js"></script>

<!-- AngularJS Controller -->
<script>
  var app = angular.module('dynamicApp', []);
  app.controller('MainController', function($scope) {
    $scope.features = [
      { title: 'Fast Performance', description: 'Experience lightning-fast load times.' },
      { title: 'Responsive Design', description: 'Works seamlessly across all devices.' },
      { title: 'User-Friendly UI', description: 'A sleek and intuitive user interface.' }
    ];
  });
</script>

<!-- jQuery Script -->
<script>
  $(document).ready(function () {
```

```
// Submit form with jQuery
$('#contactForm').submit(function (e) {
  e.preventDefault();
  const name = $('#name').val();
  const email = $('#email').val();
  const message = $('#message').val();

  // Display alert with form data (fixed template literal)
  alert(`Message Sent!\nName: ${name}\nEmail: ${email}\nMessage: ${message}`);

  // Optionally clear form fields
  $('#contactForm')[0].reset();
});

</script>

</body>
</html>
```