

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> &copy; 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>
  </nav>
</body>
```


</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>**

Learn More

</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>**

Read More

</div>

</div>

</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>

Read More

</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>

Read More

</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>
```