MCA Assignment Solutions - Full Code

1. Basic HTML Tags Demonstration

Problem: *Create an HTML webpage that demonstrates the use of basic HTML tags...*

```
<!DOCTYPE html>
<html>
<head><title>Basic Tags</title></head>
<body>
    <h1>Heading 1</h1>
    <p>This is a paragraph.</p>
    <ul><li>Item A</li><li>Item B</li></ul>
    <ol><li>First</li><li>Second</li></ol>
    <a href="https://example.com">Link</a>
    <br>
    <img src="image.jpg" alt="Sample" width="100">
    <table border="1">
        <tr><th>Name</th><th>Age</th></tr>
        <tr><td>John</td><td>20</td></tr>
    </table>
</body>
</html>
```

2. Personal Portfolio Website

Problem: *Design a personal portfolio website...*

```
<!DOCTYPE html>
<html>
<body>
    <header>
        <h1>My Portfolio</h1>
    </header>
    <section id="intro">
        <h2>Introduction</h2>
        <p>Hi, I am a web developer.</p>
    </section>
    <section id="skills">
        <h2>Skills</h2>
        <ul><li>HTML</li><li>CSS</li></ul>
    </section>
    <section id="contact">
        <h2>Contact</h2>
        <p>Email: me@example.com</p>
    </section>
</body>
```

```
</html>
```

3. Survey Form using HTML

> ***Problem:*** *Develop an HTML survey form...*

```
<!DOCTYPE html>
<html>
<body>
    <form>
        <label>Name: <input type="text" placeholder="Your Name"></label><br>
        <label>Gender:
            <input type="radio" name="gender" value="m"> Male
            <input type="radio" name="gender" value="f"> Female
        </label><br>
        <label>Interests:
            <input type="checkbox"> Coding
            <input type="checkbox"> Design
        </label><br>
        <label>Country:
            <select>
                <option>USA</option>
                <option>India</option>
            </select>
        </label><br>
        <button type="submit">Submit</button>
    </form>
</body>
</html>
```

4. Student Registration Form

> ***Problem:*** *Create a student registration form...*

```
<!DOCTYPE html>
<html>
<body>
    <h2>Registration</h2>
    <form>
        Name: <input type="text" required><br>
        Email: <input type="email" required><br>
        Password: <input type="password" maxlength="10"><br>
        DOB: <input type="date"><br>
        Photo: <input type="file"><br>
        <input type="submit" value="Register">
    </form>
</body>
</html>
```

5. Select Element Demonstration

Problem: *Design an HTML page demonstrating the use of the select element...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>5. Select Element Demonstration</title>
</head>
<body>
    <select name="courses">
    <optgroup label="Science">
        <option value="phy">Physics</option>
        <option value="math">Math</option>
    </optgroup>
    <optgroup label="Arts">
        <option value="his">History</option>
        <option value="eng">English</option>
    </optgroup>
</select>

</body>
</html>
```

6. CSS Selectors Demonstration

Problem: *Create a webpage that demonstrates different CSS selectors...*

```
<html>
<head>
<style>
    h1 { color: blue; } /* Element */
    .highlight { background: yellow; } /* Class */
    #main { border: 1px solid black; } /* ID */
    h1, p { font-family: Arial; } /* Group */
    * { margin: 0; } /* Universal */
</style>
</head>
<body>
    <div id="main">
        <h1>Title</h1>
        <p class="highlight">Highlighted text.</p>
    </div>
</body>
</html>
```

7. Menu-Driven Web Page using CSS

Problem: *Develop a menu-driven webpage using HTML and CSS...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>7. Menu-Driven Web Page using CSS</title>
    <style>
ul { list-style-type: none; margin: 0; padding: 0; overflow: hidden; background-color: #333; }
li { float: left; }
li a { display: block; color: white; text-align: center; padding: 14px 16px; text-decoration:
none; }
li a:hover { background-color: #111; }
</style>
<ul>
  <li><a href="#home">Home</a></li>
  <li><a href="#news">News</a></li>
  <li><a href="#contact">Contact</a></li>
</ul>

</head>
<body>
    <h1>7. Menu-Driven Web Page using CSS</h1>
    <p>Demo content for styling.</p>
</body>
</html>
```

8. Student Database Page using Integrated CSS

Problem: *Design a student database webpage...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>8. Student Database Page using Integrated CSS</title>
    <style>
table { width: 100%; border-collapse: collapse; }
th, td { border: 1px solid black; padding: 8px; text-align: left; }
th { background-color: #f2f2f2; }
</style>
<table>
  <tr><th>ID</th><th>Name</th></tr>
  <tr><td>1</td><td>Alice</td></tr>
</table>

</head>
<body>
    <h1>8. Student Database Page using Integrated CSS</h1>
    <p>Demo content for styling.</p>
</body>
```

```
</html>
```

9. CSS Positioning Demonstration

Problem: *Create a webpage that demonstrates different CSS positioning...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>9. CSS Positioning Demonstration</title>
</head>
<body>
    <div style="position: static; border: 1px solid red;">Static</div>
<div style="position: relative; left: 30px; border: 1px solid blue;">Relative</div>
<div style="position: absolute; top: 50px; right: 0; border: 1px solid green;">Absolute</div>
<div style="position: fixed; bottom: 0; border: 1px solid yellow;">Fixed</div>

</body>
</html>
```

10. CSS Overflow Demonstration

Problem: *Develop an HTML page to demonstrate CSS overflow properties...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>10. CSS Overflow Demonstration</title>
</head>
<body>
    <div style="width: 100px; height: 50px; overflow: scroll; border: 1px solid black;">
  This text is too long to fit in the box and will scroll.
</div>

</body>
</html>
```

11. Student Information Page using CSS Box Model

Problem: *Create a student information card... CSS box model...*

```
<!DOCTYPE html>
<html lang="en">
```

```
<head>
    <meta charset="UTF-8">
    <title>11. Student Information Page using CSS Box Model</title>
</head>
<body>
    <div style="width: 200px; padding: 20px; border: 5px solid gray; margin: 10px;">
  Content Area
</div>

</body>
</html>
```

12. CSS Pseudo Class Example

Problem: *Design a webpage demonstrating CSS pseudo-classes...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>12. CSS Pseudo Class Example</title>
    <style>
a:link { color: red; }
a:visited { color: green; }
a:hover { color: hotpink; }
a:active { color: blue; }
</style>
<a href="#">Hover Me</a>

</head>
<body>
    <h1>12. CSS Pseudo Class Example</h1>
    <p>Demo content for styling.</p>
</body>
</html>
```

13. Bootstrap Button Demonstration

Problem: *Create a webpage using Bootstrap...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>13. Bootstrap Button Demonstration</title>
</head>
<body>
    <!-- Include Bootstrap CSS -->
<link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/css/bootstrap.min.css">
```

```
<button class="btn btn-primary">Primary</button>
<button class="btn btn-secondary">Secondary</button>
<button class="btn btn-success">Success</button>
<button class="btn btn-danger">Danger</button>

</body>
</html>
```

14. Animated Button using CSS

Problem: *Develop an animated button...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>14. Animated Button using CSS</title>
    <style>
button { transition: background-color 0.5s, transform 0.5s; }
button:hover { background-color: coral; transform: scale(1.1); }
</style>
<button>Hover Me</button>

</head>
<body>
    <h1>14. Animated Button using CSS</h1>
    <p>Demo content for styling.</p>
</body>
</html>
```

15. Combined Attribute Selector Demonstration

Problem: *Create a webpage that demonstrates combined attribute selectors...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>15. Combined Attribute Selector Demonstration</title>
    <style>
input[type="text"][name="username"] { border: 2px solid blue; }
</style>
<input type="text" name="username" placeholder="Username">
<input type="password" name="password" placeholder="Password">

</head>
<body>
    <h1>15. Combined Attribute Selector Demonstration</h1>
    <p>Demo content for styling.</p>
</body>
```

```
</html>
```

16. 2D Transformations using CSS

Problem: *Design a webpage demonstrating 2D CSS transformations...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>16. 2D Transformations using CSS</title>
    <style>
div { width: 100px; height: 100px; background: red; transition: 1s; margin: 50px; }
div:hover { transform: rotate(45deg) scale(1.2) translate(10px, 10px); }
</style>
<div>Box</div>

</head>
<body>
    <h1>16. 2D Transformations using CSS</h1>
    <p>Demo content for styling.</p>
</body>
</html>
```

17. JavaScript Events Demonstration

Problem: *Develop a webpage that demonstrates various JavaScript events...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>17. JavaScript Events Demonstration</title>
</head>
<body>
    <button onclick="alert('Clicked!')">Click Me</button>
<input onkeydown="console.log('Key Pressed')" placeholder="Type here">
<div onmouseover="this.style.background='yellow'"
onmouseout="this.style.background='white'">Hover Me</div>

</body>
</html>
```

18. Palindrome Check using JavaScript

Problem: *Write a JavaScript program... checks whether it is a palindrome...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>18. Palindrome Check using JavaScript</title>
</head>
<body>
    <h1>18. Palindrome Check using JavaScript</h1>
    <input id="str" placeholder="Enter string">
<button onclick="checkPal()">Check</button>
<p id="res"></p>
<script>
function checkPal() {
    var s = document.getElementById("str").value;
    var rev = s.split('').reverse().join('');
    document.getElementById("res").innerText = (s === rev) ? "Palindrome" : "Not Palindrome";
}
</script>

</body>
</html>
```

19. Count Words & Print Length

> ***Problem:*** *Create a JavaScript program... counts the number of words... and total character length...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>19. Count Words & Print Length</title>
</head>
<body>
    <h1>19. Count Words & Print Length</h1>
    <input id="sent" placeholder="Enter sentence">
<button onclick="count()">Count</button>
<p id="out"></p>
<script>
function count() {
    var txt = document.getElementById("sent").value.trim();
    var words = txt === "" ? 0 : txt.split(/\s+/).length;
    var chars = txt.replace(/\s+/g, '').length;
    document.getElementById("out").innerText = "Words: " + words + ", Chars: " + chars;
}
</script>

</body>
</html>
```

20. JavaScript String Methods Demonstration

Problem: *Develop a program demonstrating commonly used JavaScript string methods...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>20. JavaScript String Methods Demonstration</title>
</head>
<body>
    <h1>20. JavaScript String Methods Demonstration</h1>
    <script>
var s = "Hello World";
document.write("Length: " + s.length + "<br>");
document.write("Upper: " + s.toUpperCase() + "<br>");
document.write("Lower: " + s.toLowerCase() + "<br>");
document.write("Substring: " + s.substring(0, 5) + "<br>");
document.write("Replace: " + s.replace("World", "JS"));
</script>

</body>
</html>
```

21. Conditional Statements Program

Problem: *Write a JavaScript program... Accept marks... display grade...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>21. Conditional Statements Program</title>
</head>
<body>
    <h1>21. Conditional Statements Program</h1>
    <input id="marks" type="number">
<button onclick="grade()">Get Grade</button>
<script>
function grade() {
    var m = parseInt(document.getElementById("marks").value);
    if (m >= 90) alert("A");
    else if (m >= 50) alert("B");
    else alert("F");
}
</script>

</body>
</html>
```

22. Array Demonstration Program

Problem: *Develop a JavaScript program that demonstrates array creation...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>22. Array Demonstration Program</title>
</head>
<body>
    <h1>22. Array Demonstration Program</h1>
    <script>
var arr = [10, 20];
arr.push(30); // Insert
arr.shift(); // Delete
document.write("Array: " + arr.join(", "));
</script>

</body>
</html>
```

23. Student Marks Management System using Arrays

Problem: *Create a JavaScript application that stores student marks...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>23. Student Marks Management System using Arrays</title>
</head>
<body>
    <h1>23. Student Marks Management System using Arrays</h1>
    <script>
var marks = [85, 92, 78];
var total = marks.reduce((a, b) => a + b, 0);
var avg = total / marks.length;
document.write("Total: " + total + "<br>Average: " + avg + "<br>Result: " + (avg >= 50 ?
"Pass" : "Fail"));
</script>

</body>
</html>
```

24. JavaScript Objects Demonstration

Problem: *Develop a JavaScript program that creates objects representing students...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
```

```
    <title>24. JavaScript Objects Demonstration</title>
</head>
<body>
    <h1>24. JavaScript Objects Demonstration</h1>
    <script>
var student = {
    name: "John",
    roll: 101,
    marks: 90,
    display: function() {
        return this.name + " (" + this.roll + "): " + this.marks;
    }
};
document.write(student.display());
</script>

</body>
</html>
```

25. DOM Manipulation & Event Handling Program

Problem: *Create a webpage that uses JavaScript DOM manipulation...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>25. DOM Manipulation & Event Handling Program</title>
</head>
<body>
    <p id="txt">Original Text</p>
<button onclick="document.getElementById('txt').innerText='Changed!'">Change Text</button>
<button onclick="document.getElementById('txt').style.color='red'">Change Color</button>

</body>
</html>
```

26. React Hello World Component

Problem: *Create a simple React application that displays a Hello World...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>26. React Hello World Component</title>
    <script crossorigin src="https://unpkg.com/react@18/umd/react.development.js"></script>
    <script crossorigin src="https://unpkg.com/react-dom@18/umd/react-
dom.development.js"></script>
    <script src="https://unpkg.com/@babel/standalone/babel.min.js"></script>
```

```
</head>
<body>
    <div id="root"></div>
    <script type="text/babel">


function HelloWorld() {
    return <h1>Hello World</h1>;
}




        const root = ReactDOM.createRoot(document.getElementById('root'));
        root.render(<HelloWorld />);
    </script>
</body>
</html>
```

27. Student Details Component using Props

Problem: *Develop a React component that accepts student details as props...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>27. Student Details Component using Props</title>
    <script crossorigin src="https://unpkg.com/react@18/umd/react.development.js"></script>
    <script crossorigin src="https://unpkg.com/react-dom@18/umd/react-
dom.development.js"></script>
    <script src="https://unpkg.com/@babel/standalone/babel.min.js"></script>
</head>
<body>
    <div id="root"></div>
    <script type="text/babel">
function StudentDetails({ name, course }) {
    return (
        <div>
            <h2>Student Info</h2>
            <p>Name: {name}</p>
            <p>Course: {course}</p>
        </div>
    );
}


        const root = ReactDOM.createRoot(document.getElementById('root'));
        root.render(<StudentDetails />);
    </script>
</body>
</html>
```

28. Counter Application using useState

Problem: *Create a React counter application using the useState hook...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>28. Counter Application using useState</title>
    <script crossorigin src="https://unpkg.com/react@18/umd/react.development.js"></script>
    <script crossorigin src="https://unpkg.com/react-dom@18/umd/react-
dom.development.js"></script>
    <script src="https://unpkg.com/@babel/standalone/babel.min.js"></script>
</head>
<body>
    <div id="root"></div>
    <script type="text/babel">


function Counter() {
    const [count, setCount] = useState(0);
    return (
        <div>
            <p>Count: {count}</p>
            <button onClick={() => setCount(count + 1)}>Increment</button>
            <button onClick={() => setCount(count - 1)}>Decrement</button>
        </div>
    );
}


        const root = ReactDOM.createRoot(document.getElementById('root'));
        root.render(<Counter />);
    </script>
</body>
</html>
```

29. Toggle Message using Conditional Rendering

Problem: *Develop a React application that shows or hides a message...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>29. Toggle Message using Conditional Rendering</title>
    <script crossorigin src="https://unpkg.com/react@18/umd/react.development.js"></script>
    <script crossorigin src="https://unpkg.com/react-dom@18/umd/react-
dom.development.js"></script>
    <script src="https://unpkg.com/@babel/standalone/babel.min.js"></script>
</head>
<body>
    <div id="root"></div>
```

```
    <script type="text/babel">


function ToggleMessage() {
    const [show, setShow] = useState(true);
    return (
        <div>
            <button onClick={() => setShow(!show)}>Toggle</button>
            {show && <p>This is a message.</p>}
        </div>
    );
}


        const root = ReactDOM.createRoot(document.getElementById('root'));
        root.render(<ToggleMessage />);
    </script>
</body>
</html>
```

30. List Rendering using map()

Problem: *Create a React application that renders a list of items...*

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>30. List Rendering using map()</title>
    <script crossorigin src="https://unpkg.com/react@18/umd/react.development.js"></script>
    <script crossorigin src="https://unpkg.com/react-dom@18/umd/react-
dom.development.js"></script>
    <script src="https://unpkg.com/@babel/standalone/babel.min.js"></script>
</head>
<body>
    <div id="root"></div>
    <script type="text/babel">
function ItemList() {
    const items = ['Apple', 'Banana', 'Orange'];
    return (
        <ul>
            {items.map((item, index) => (
                <li key={index}>{item}</li>
            ))}
        </ul>
    );
}


        const root = ReactDOM.createRoot(document.getElementById('root'));
        root.render(<ItemList />);
    </script>
</body>
</html>
```