**Task 1: Color Textbox, Mobile Validation, and Car Object with Methods**

<!DOCTYPE html>

<html>

<head>

<title>Color & Mobile Validation + Car Object</title>

<style>

input { margin-bottom: 10px; display: block; }

</style>

</head>

<body>

<h3>1. Change Background Color</h3>

<input type="text" id="colorInput" placeholder="Enter a basic color name" onblur="changeBgColor()">

<h3>2. Mobile Number Validation</h3>

<input type="text" id="mobileInput" placeholder="Enter 10-digit mobile number" oninput="validateMobile()" maxlength="10">

<h3>3. Car Object Output in Console</h3>

<button onclick="testCar()">Create & Test Car</button>

<script>

function changeBgColor() {

const color = document.getElementById('colorInput').value;

document.body.style.backgroundColor = color;

}

function validateMobile() {

const input = document.getElementById('mobileInput');

if (input.value.length < 10) {

input.style.backgroundColor = 'red';

} else {

input.style.backgroundColor = 'white';

alert('Mobile number is complete!');

}

}

// Car object

function Car(carModelName, carColor, carPrice, carSpeed) {

this.carModelName = carModelName;

this.carColor = carColor;

this.carPrice = carPrice;

this.carSpeed = carSpeed;

this.displaySpeed = function() {

console.log(`Current speed: ${this.carSpeed} km/h`);

};

this.increaseSpeed = function(s) {

this.carSpeed += s;

this.displaySpeed();

};

this.decreaseSpeed = function(s) {

this.carSpeed -= s;

this.displaySpeed();

};

}

function testCar() {

let car = new Car("Toyota", "Blue", 1000000, 100);

car.displaySpeed();

car.increaseSpeed(20);

car.decreaseSpeed(10);

}

</script>

</body>

</html>

**✅ Task 2: Background Color Change of <div> Every 30 Seconds**

<!DOCTYPE html>

<html>

<head>

<title>Div Color Changer</title>

<style>

#colorBox {

width: 300px;

height: 150px;

line-height: 150px;

text-align: center;

color: white;

font-size: 20px;

margin: 20px auto;

background-color: teal;

}

</style>

</head>

<body>

<div id="colorBox">Color Changes Every 30s</div>

<script>

const colors = ["red", "blue", "green", "purple", "orange", "brown"];

let index = 0;

setInterval(() => {

const box = document.getElementById("colorBox");

box.style.backgroundColor = colors[index];

index = (index + 1) % colors.length;

}, 30000); // 30 seconds

</script>

</body>

</html>

**✅ Task 3: AJAX + XML for Student Details (Expandable Table)**

**🔹 students.xml (store on server):**

**xml**

<students>

<student>

<enrollment>1001</enrollment>

<name>John Doe</name>

<city>New York</city>

<address>123 Main Street</address>

<pincode>10001</pincode>

</student>

<student>

<enrollment>1002</enrollment>

<name>Jane Smith</name>

<city>Los Angeles</city>

<address>456 Elm Street</address>

<pincode>90001</pincode>

</student>

</students>

**🔹 HTML + JavaScript:**

**html**

<!DOCTYPE html>

<html>

<head>

<title>AJAX XML Student Details</title>

<style>

table, th, td { border: 1px solid black; border-collapse: collapse; padding: 8px; }

th { background-color: #ddd; }

</style>

</head>

<body>

<h3>Student Table from XML</h3>

<div id="studentTable"></div>

<div id="details" style="margin-top: 20px;"></div>

<script>

function loadStudents() {

const xhr = new XMLHttpRequest();

xhr.open("GET", "students.xml", true);

xhr.onload = function() {

const xml = xhr.responseXML;

const students = xml.getElementsByTagName("student");

let table = "<table><tr><th>Enrollment</th><th>Name</th></tr>";

for (let i = 0; i < students.length; i++) {

const enroll = students[i].getElementsByTagName("enrollment")[0].textContent;

const name = students[i].getElementsByTagName("name")[0].textContent;

table += `<tr><td onclick="showDetails(${i})" style="cursor:pointer;color:blue;">${enroll}</td><td>${name}</td></tr>`;

}

table += "</table>";

document.getElementById("studentTable").innerHTML = table;

window.studentData = students; // Store for use later

};

xhr.send();

}

function showDetails(index) {

const s = window.studentData[index];

const city = s.getElementsByTagName("city")[0].textContent;

const addr = s.getElementsByTagName("address")[0].textContent;

const pin = s.getElementsByTagName("pincode")[0].textContent;

document.getElementById("details").innerHTML =

`<strong>Details:</strong><br>City: ${city}<br>Address: ${addr}<br>Pincode: ${pin}`;

}

loadStudents();

</script>

</body>

</html>