**2(a)**

<!DOCTYPE html>

<html>

<head>

  <title>JavaScript Demo</title>

  <style>

    body {

      font-family: Arial;

      border: 2px solid black; /\* border for the whole page \*/

      padding: 10px;

    }

    h2 {

      color: blue;

    }

</style>

</head>

<body>

  <h2>JavaScript Example: Variables, Functions, and Objects</h2>

  <p id="output"></p>

  <script>

    // Variable

    let name = "Alice";

    const a=10;

    // Function

    function sayHello(person) {

      return "Hello, " + person + "!";

    }

    // Object

    let car = {

      brand: "Toyota",

      model: "Corolla",

      start: function() {

        return "The car has started.";

      }

    };

    // Display output on the page

    let result = "";

    result += "Name: " + name + "<br>";

      result += "Number: " +a + "<br>";

    result += sayHello(name) + "<br>";

    result += "Car Brand: " + car.brand + "<br>";

    result += car.start();

    document.getElementById("output").innerHTML = result;

  </script>

</body>

</html>

2(B)

<!DOCTYPE html>

<html>

  <head>

    <title>Simple AJAX Form</title>

  </head>

  <body>

    <h2>AJAX Form Example</h2>

    <form id="myForm">

      Name: <input type="text" name="name" required /><br />

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

      <button type="submit">Submit</button>

    </form>

    <h3>Contacts:</h3>

    <ul id="list"></ul>

    <script>

      const form = document.getElementById("myForm");

      const list = document.getElementById("list");

      const API = "https://jsonplaceholder.typicode.com/users"; // mock server

      // Load initial contacts

      fetch(API)

        .then((res) => res.json())

        .then((users) => {

          users.forEach((u) => {

            list.innerHTML += `<li>${u.name} - ${u.email}</li>`;

          });

        });

      // Submit form

      form.addEventListener("submit", (e) => {

        e.preventDefault();

        const data = Object.fromEntries(new FormData(form));

        fetch(API, {

          method: "POST",

          headers: { "Content-Type": "application/json" },

          body: JSON.stringify(data),

        })

          .then((res) => res.json())

          .then((created) => {

            list.innerHTML += `<li>${created.name} - ${created.email}</li>`;

            form.reset();

          });

      });

    </script>

  </body>

</html>

OR

2(b)

<!DOCTYPE html>

<html>

<head>

  <title>Simple AJAX Form</title>

</head>

<body>

  <h2>AJAX Form Example</h2>

  <form id="myForm">

    Name: <input type="text" name="name" required><br>

    Email: <input type="email" name="email" required><br>

    <button type="submit">Submit</button>

  </form>

  <h3>Contacts:</h3>

  <ul id="list"></ul>

  <script>

    const form = document.getElementById("myForm");

    const list = document.getElementById("list");

    let contacts = []; // local storage for data

    // Submit form

    form.addEventListener("submit", e => {

      e.preventDefault();

      const data = Object.fromEntries(new FormData(form));

      // Store in local array

      contacts.push(data);

      // Display all contacts

      list.innerHTML = "";

      contacts.forEach(c => {

        list.innerHTML += `<li>${c.name} - ${c.email}</li>`;

      });

      form.reset();

    });

  </script>

</body>

</html>

2(C)

<!DOCTYPE html>

<html>

<head>

  <title>Simple Form Validation</title>

  <style>

    .error { color: red; font-size: 14px; }

  </style>

</head>

<body>

  <h2>Registration Form</h2>

  <form id="regForm">

    Name: <input id="name"><span class="error" id="nameErr"></span><br><br>

    Email: <input id="email"><span class="error" id="emailErr"></span><br><br>

    Phone: <input id="phone"><span class="error" id="phoneErr"></span><br><br>

    Password: <input type="password" id="password"><span class="error" id="passwordErr"></span><br><br>

    <button type="submit">Register</button>

  </form>

  <ul id="list"></ul>

  <script>

    const form = document.getElementById("regForm");

    const list = document.getElementById("list");

    form.addEventListener("submit", function(e){

      e.preventDefault();

      // Clear previous errors

      document.getElementById("nameErr").textContent = "";

      document.getElementById("emailErr").textContent = "";

      document.getElementById("phoneErr").textContent = "";

      document.getElementById("passwordErr").textContent = "";

      const name = document.getElementById("name").value.trim();

      const email = document.getElementById("email").value.trim();

      const phone = document.getElementById("phone").value.trim();

      const password = document.getElementById("password").value.trim();

      let valid = true;

      if(name === "") { document.getElementById("nameErr").textContent = " Name required"; valid = false; }

      if(email === "") { document.getElementById("emailErr").textContent = " Email required"; valid = false; }

      if(phone === "") { document.getElementById("phoneErr").textContent = " Phone required"; valid = false; }

      if(password === "") { document.getElementById("passwordErr").textContent = " Password required"; valid = false; }

      if(valid){

        const li = document.createElement("li");

        li.textContent = `Name: ${name}, Email: ${email}, Phone: ${phone}`;

        list.appendChild(li);

        form.reset();

        alert("Form submitted successfully!");

      }

    });

  </script>

</body>

</html>

2(D)

<!DOCTYPE html>

<html>

<head>

  <title>Simple jQuery UI</title>

  <link rel="stylesheet" href="https://code.jquery.com/ui/1.13.2/themes/base/jquery-ui.css">

  <script src="https://code.jquery.com/jquery-3.6.0.min.js"></script>

  <script src="https://code.jquery.com/ui/1.13.2/jquery-ui.min.js"></script>

</head>

<body>

<h2>Demo</h2>

<div id="tabs">

  <ul>

    <li><a href="#tab1">Tab 1</a></li>

    <li><a href="#tab2">Tab 2</a></li>

  </ul>

  <div id="tab1">

    <div id="slider"></div>

    <button id="btn">Open Modal</button>

  </div>

  <div id="tab2">

    <p>Tab 2 content</p>

  </div>

</div>

<div id="modal" title="Modal" style="display:none;">

  <p>This is a modal!</p>

</div>

<script>

$(function(){

  $("#tabs").tabs();

  $("#slider").slider();

  $("#btn").click(function(){ $("#modal").dialog(); });

});

</script>

</body>

</html>

2(e)

<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

    <title>JSON Rendering</title>

  </head>

  <body>

    <h1>Articles</h1>

    <ul id="articles"></ul>

    <script src="script.js"></script>

  </body>

</html>

script.json

fetch("data.json")

  .then((res) => res.json())

  .then((data) => {

    const list = document.getElementById("articles");

    list.innerHTML = data.articles

      .map((a) => `<li><b>${a.title}</b>: ${a.summary}</li>`)

      .join("");

  })

  .catch((err) => console.error("Error loading JSON:", err));

Data.json

{

  "articles": [

    {

      "id": 1,

      "title": "Intro to JavaScript",

      "summary": "Learn variables and functions"

    },

    {

      "id": 2,

      "title": "AJAX Basics",

      "summary": "How to fetch data from a server"

    },

    {

      "id": 3,

      "title": "jQuery UI",

      "summary": "Build interactive UI elements"

    }

  ]

}

Vote check

<!DOCTYPE html>

<html>

  <head>

    <title>Voter Eligibility</title>

  </head>

  <body>

    <h2>Voter Eligibility Check</h2>

    <p id="result"></p>

    <script>

      var age = prompt("Enter your age:");

      var result = document.getElementById("result");

      if (age >= 18) {

        result.innerHTML = "You are eligible to vote!";

      } else {

        result.innerHTML = "Sorry, you are not eligible to vote.";

      }

    </script>

  </body>

</html>

calculator operations

<!DOCTYPE html>

<html>

<head>

  <title>Simple Calculator</title>

</head>

<body>

<h2>Simple Calculator</h2>

Number 1: <input type="number" id="num1"><br>

Number 2: <input type="number" id="num2"><br><br>

<button onclick="calculate('+')">Add</button>

<button onclick="calculate('-')">Subtract</button>

<button onclick="calculate('\*')">Multiply</button>

<button onclick="calculate('/')">Divide</button>

<h3 id="result"></h3>

<script>

function calculate(op){

  var n1 = Number(document.getElementById("num1").value);

  var n2 = Number(document.getElementById("num2").value);

  var res;

  if(op == '+') res = n1 + n2;

  else if(op == '-') res = n1 - n2;

  else if(op == '\*') res = n1 \* n2;

  else if(op == '/') res = n1 / n2;

  document.getElementById("result").innerHTML = "Result: " + res;

}

</script>

</body>

</html>

library management system

<!DOCTYPE html>

<html>

<head>

  <title>Library Management</title>

</head>

<body>

<h2>Library Management System</h2>

Book Name: <input type="text" id="book"><br><br>

Author: <input type="text" id="author"><br><br>

<button onclick="addBook()">Add Book</button>

<h3>Book List:</h3>

<ul id="bookList"></ul>

<script>

var books = [];

function addBook() {

  var name = document.getElementById("book").value;

  var author = document.getElementById("author").value;

  if(name === "" || author === "") {

    alert("Enter both book name and author!");

    return;

  }

  books.push(name + " by " + author);

  var list = document.getElementById("bookList");

  list.innerHTML = "";

  for(var i = 0; i < books.length; i++){

    list.innerHTML += "<li>" + books[i] + "</li>";

  }

  // Clear input

  document.getElementById("book").value = "";

  document.getElementById("author").value = "";

}

</script>

</body>

</html>

Fibanacci series

<!DOCTYPE html>

<html>

<head>

  <title>Fibonacci Series</title>

</head>

<body>

<script>

var n = prompt("Enter number of terms:");

var a = 0, b = 1;

document.write(a + " " + b + " ");

for(var i = 2; i < n; i++){

  var c = a + b;

  document.write(c + " ");

  a = b;

  b = c;

}

</script>

</body>

</html>