**Exercise 1: Print Numbers from 1 to 10**

**Task:** Write a JavaScript loop that prints numbers from 1 to 10.

**Answer:**

for (let i = 1; i <= 10; i++) {

console.log(i);

}

**Exercise 2: Sum of Numbers from 1 to 100**

**Task:** Write a JavaScript loop to calculate the sum of numbers from 1 to 100.

**Answer:**

let sum = 0;

for (let i = 1; i <= 100; i++) {

sum += i;

}

console.log("Sum:", sum);

**Exercise 3: Print Even Numbers between 1 and 20**

**Task:** Write a JavaScript loop that prints all even numbers between 1 and 20.

**Answer:**

for (let i = 2; i <= 20; i += 2) {

console.log(i);

}

**Exercise 4: Reverse an Array**

**Task:** Write a JavaScript loop to reverse an array [1, 2, 3, 4, 5] and print the reversed array.

**Answer:**

let arr = [1, 2, 3, 4, 5];

let reversedArr = [];

for (let i = arr.length - 1; i >= 0; i--) {

reversedArr.push(arr[i]);

}

console.log(reversedArr);

**Exercise 5: Factorial of a Number**

**Task:** Write a JavaScript loop to calculate the factorial of a number, e.g., 5! = 5 \* 4 \* 3 \* 2 \* 1.

**Answer:**

let number = 5;

let factorial = 1;

for (let i = 1; i <= number; i++) {

factorial \*= i;

}

console.log("Factorial:", factorial);

**Exercise 6: Multiplication Table**

**Task:** Write a JavaScript loop to print the multiplication table for a given number, e.g., 7.

**Answer:**

let number = 7;

for (let i = 1; i <= 10; i++) {

console.log(`${number} x ${i} = ${number \* i}`);

}

**Exercise 7: Find the Largest Number in an Array**

**Task:** Write a JavaScript loop to find the largest number in an array [4, 9, 1, 7, 2].

**Answer:**

let numbers = [4, 9, 1, 7, 2];

let largest = numbers[0];

for (let i = 1; i < numbers.length; i++) {

if (numbers[i] > largest) {

largest = numbers[i];

}

}

console.log("Largest Number:", largest);

**Exercise 8: Count the Number of Vowels in a String**

**Task:** Write a JavaScript loop to count the number of vowels in a string, e.g., "Hello World".

**Answer:**

let str = "Hello World";

let count = 0;

let vowels = "aeiouAEIOU";

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

if (vowels.includes(str[i])) {

count++;

}

}

console.log("Number of vowels:", count);

**Exercise 9: Display User Input from a Form**

**Task:** Create a form with a text input field and a button. When the button is clicked, display the entered text using a loop.

**HTML:**

<form id="textForm">

<label for="textInput">Enter text:</label>

<input type="text" id="textInput" name="textInput">

<button type="button" onclick="displayText()">Display</button>

</form>

<div id="output"></div>

**JavaScript:**

function displayText() {

const input = document.getElementById('textInput').value;

let output = '';

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

output += input[i] + '<br>';

}

document.getElementById('output').innerHTML = output;

}

**Exercise 10: Sum of Numbers from a Form**

**Task:** Create a form with multiple number input fields and a button. When the button is clicked, calculate and display the sum of the numbers entered.

**HTML:**

<form id="numberForm">

<label for="num1">Number 1:</label>

<input type="number" id="num1" name="num1"><br>

<label for="num2">Number 2:</label>

<input type="number" id="num2" name="num2"><br>

<label for="num3">Number 3:</label>

<input type="number" id="num3" name="num3"><br>

<button type="button" onclick="calculateSum()">Calculate Sum</button>

</form>

<div id="sumOutput"></div>

**JavaScript:**

function calculateSum() {

const num1 = parseFloat(document.getElementById('num1').value);

const num2 = parseFloat(document.getElementById('num2').value);

const num3 = parseFloat(document.getElementById('num3').value);

const numbers = [num1, num2, num3];

let sum = 0;

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

sum += numbers[i];

}

document.getElementById('sumOutput').innerText = 'Sum: ' + sum;

}

**Exercise 11: List All Checked Checkboxes**

**Task:** Create a form with multiple checkboxes and a button. When the button is clicked, list all the checked checkboxes.

**HTML:**

<form id="checkboxForm">

<label><input type="checkbox" name="options" value="Option 1"> Option 1</label><br>

<label><input type="checkbox" name="options" value="Option 2"> Option 2</label><br>

<label><input type="checkbox" name="options" value="Option 3"> Option 3</label><br>

<button type="button" onclick="listChecked()">List Checked</button>

</form>

<div id="checkedOutput"></div>

**JavaScript:**

function listChecked() {

const checkboxes = document.querySelectorAll('input[name="options"]:checked');

let output = '';

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

output += checkboxes[i].value + '<br>';

}

document.getElementById('checkedOutput').innerHTML = output;

}

**Exercise 12: Create a Dynamic List from Form Inputs**

**Task:** Create a form with text input fields and a button. When the button is clicked, add each entered item to a list below the form.

**HTML:**

<form id="listForm">

<label for="itemInput">Enter item:</label>

<input type="text" id="itemInput" name="itemInput">

<button type="button" onclick="addItem()">Add Item</button>

</form>

<ul id="itemList"></ul>

**JavaScript:**

function addItem() {

const itemInput = document.getElementById('itemInput').value;

const itemList = document.getElementById('itemList');

const listItem = document.createElement('li');

listItem.textContent = itemInput;

itemList.appendChild(listItem);

// Clear input field

document.getElementById('itemInput').value = '';

}

**Exercise 13: Validate Form Fields**

**Task:** Create a form with several input fields. When the submit button is clicked, check if all fields are filled and display a message for any empty fields.

**HTML:**

<form id="validateForm">

<label for="field1">Field 1:</label>

<input type="text" id="field1" name="field1"><br>

<label for="field2">Field 2:</label>

<input type="text" id="field2" name="field2"><br>

<label for="field3">Field 3:</label>

<input type="text" id="field3" name="field3"><br>

<button type="button" onclick="validateForm()">Submit</button>

</form>

<div id="validationOutput"></div>

**JavaScript:**

function validateForm() {

const fields = ['field1', 'field2', 'field3'];

let message = '';

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

const field = document.getElementById(fields[i]).value;

if (!field) {

message += 'Field ' + (i + 1) + ' is empty.<br>';

}

}

if (message === '') {

message = 'All fields are filled!';

}

document.getElementById('validationOutput').innerHTML = message;

}

**Exercise 14: Dynamic Form with Multiple Sections**

**Task:** Create a dynamic form with multiple sections (e.g., personal info, address, and payment details).

Each section should have its own inputs. When a button is clicked, collect and display all the inputs.

**HTML:**

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Dynamic Form</title>

<link rel="stylesheet" href="styles.css">

</head>

<body>

<form id="dynamicForm">

<fieldset>

<legend>Personal Information</legend>

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

<input type="text" id="name" name="name"><br>

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

<input type="email" id="email" name="email"><br>

</fieldset>

<fieldset>

<legend>Address</legend>

<label for="address">Address:</label>

<input type="text" id="address" name="address"><br>

<label for="city">City:</label>

<input type="text" id="city" name="city"><br>

</fieldset>

<fieldset>

<legend>Payment Details</legend>

<label for="cardNumber">Card Number:</label>

<input type="text" id="cardNumber" name="cardNumber"><br>

<label for="expiryDate">Expiry Date:</label>

<input type="text" id="expiryDate" name="expiryDate"><br>

</fieldset>

<button type="button" onclick="collectFormData()">Submit</button>

</form>

<div id="formOutput"></div>

<script src="script.js"></script>

</body>

</html>

**CSS (styles.css):**

body {

font-family: Arial, sans-serif;

padding: 20px;

}

form {

max-width: 600px;

margin: auto;

border: 1px solid #ddd;

padding: 20px;

border-radius: 8px;

background-color: #f9f9f9;

}

fieldset {

border: 1px solid #ddd;

border-radius: 8px;

padding: 15px;

margin-bottom: 15px;

}

legend {

font-weight: bold;

}

label {

display: block;

margin: 10px 0 5px;

}

input {

width: calc(100% - 22px);

padding: 8px;

border: 1px solid #ccc;

border-radius: 4px;

}

button {

padding: 10px 20px;

background-color: #4CAF50;

color: white;

border: none;

border-radius: 4px;

cursor: pointer;

}

button:hover {

background-color: #45a049;

}

#formOutput {

margin-top: 20px;

}

**JavaScript (script.js):**

function collectFormData() {

const formData = {

name: document.getElementById('name').value,

email: document.getElementById('email').value,

address: document.getElementById('address').value,

city: document.getElementById('city').value,

cardNumber: document.getElementById('cardNumber').value,

expiryDate: document.getElementById('expiryDate').value,

};

let output = '<h3>Form Data:</h3>';

for (const key in formData) {

output += `<p><strong>${key.replace(/([A-Z])/g, ' $1')}: </strong>${formData[key]}</p>`;

}

document.getElementById('formOutput').innerHTML = output;

}

**Exercise 15: Survey Form with Dynamic Input Fields**

**Task:** Create a survey form that allows users to add multiple questions dynamically. Use loops to handle the added questions and display them.

**HTML:**

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Survey Form</title>

<link rel="stylesheet" href="styles.css">

</head>

<body>

<form id="surveyForm">

<div id="questionsContainer">

<div class="question">

<label for="question1">Question 1:</label>

<input type="text" id="question1" name="questions[]">

</div>

</div>

<button type="button" onclick="addQuestion()">Add Question</button>

<button type="button" onclick="submitSurvey()">Submit Survey</button>

</form>

<div id="surveyOutput"></div>

<script src="script.js"></script>

</body>

</html>

**CSS (styles.css):**

body {

font-family: Arial, sans-serif;

padding: 20px;

}

form {

max-width: 600px;

margin: auto;

border: 1px solid #ddd;

padding: 20px;

border-radius: 8px;

background-color: #f9f9f9;

}

.question {

margin-bottom: 10px;

}

label {

display: block;

margin: 5px 0;

}

input {

width: calc(100% - 22px);

padding: 8px;

border: 1px solid #ccc;

border-radius: 4px;

}

button {

padding: 10px 20px;

background-color: #4CAF50;

color: white;

border: none;

border-radius: 4px;

cursor: pointer;

margin-right: 10px;

}

button:hover {

background-color: #45a049;

}

#surveyOutput {

margin-top: 20px;

}

**JavaScript (script.js):**

let questionCount = 1;

function addQuestion() {

questionCount++;

const container = document.getElementById('questionsContainer');

const newQuestion = document.createElement('div');

newQuestion.className = 'question';

newQuestion.innerHTML = `

<label for="question${questionCount}">Question ${questionCount}:</label>

<input type="text" id="question${questionCount}" name="questions[]">

`;

container.appendChild(newQuestion);

}

function submitSurvey() {

const inputs = document.querySelectorAll('input[name="questions[]"]');

let output = '<h3>Survey Questions:</h3>';

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

output += `<p><strong>Question ${i + 1}: </strong>${inputs[i].value}</p>`;

}

document.getElementById('surveyOutput').innerHTML = output;

}