**Java**

1. **Create an array with the values (1, 2, 3, 4, 5, 6, 7) and shuffle it.**

import java.util.ArrayList;

import java.util.Collections;

import java.util.List;

public class ShuffleArray {

public static void main(String[] args) {

// Create an ArrayList with the values (1, 2, 3, 4, 5, 6, 7)

List<Integer> arrayList = new ArrayList<>();

arrayList.add(1);

arrayList.add(2);

arrayList.add(3);

arrayList.add(4);

arrayList.add(5);

arrayList.add(6);

arrayList.add(7);

// Shuffle the ArrayList

Collections.shuffle(arrayList);

// Convert the shuffled ArrayList back to an array

Integer[] shuffledArray = arrayList.toArray(new Integer[0]);

// Print the shuffled array

for (int num : shuffledArray) {

System.out.print(num + " ");

}

}

}

1. **Enter a Roman Number as input and convert it to an integer. (ex IX = 9)**

import java.util.HashMap;

public class RomanToInteger {

public static void main(String[] args) {

String romanNumeral = "IX"; // Replace this with your Roman numeral input

int result = romanToInt(romanNumeral);

System.out.println("Roman numeral " + romanNumeral + " is equivalent to " + result);

}

public static int romanToInt(String s) {

// Create a HashMap to store the values of Roman numerals

HashMap<Character, Integer> romanValues = new HashMap<>();

romanValues.put('I', 1);

romanValues.put('V', 5);

romanValues.put('X', 10);

romanValues.put('L', 50);

romanValues.put('C', 100);

romanValues.put('D', 500);

romanValues.put('M', 1000);

int result = 0;

int prevValue = 0;

// Iterate through the Roman numeral string in reverse order

for (int i = s.length() - 1; i >= 0; i--) {

char currentChar = s.charAt(i);

int currentValue = romanValues.get(currentChar);

// If the previous value is smaller than the current value, subtract it

if (prevValue < currentValue) {

result -= prevValue;

} else {

result += currentValue;

}

prevValue = currentValue;

}

return result;

}

}

1. **Check if the input is pangram or not. (Pangram is a sentence that contains all the alphabet from a-z)**

public class PangramChecker {

public static void main(String[] args) {

String input = "The quick brown fox jumps over the lazy dog"; // Replace this with your input string

boolean isPangram = isPangram(input);

if (isPangram) {

System.out.println("The input is a pangram.");

} else {

System.out.println("The input is not a pangram.");

}

}

public static boolean isPangram(String str) {

// Create a boolean array to mark the presence of each letter from 'a' to 'z'

boolean[] alphabetPresent = new boolean[26];

// Convert the input string to lowercase to ensure case-insensitivity

str = str.toLowerCase();

// Iterate through the input string and mark the presence of each letter

for (char c : str.toCharArray()) {

if ('a' <= c && c <= 'z') {

alphabetPresent[c - 'a'] = true;

}

}

// Check if all letters from 'a' to 'z' are present in the array

for (boolean present : alphabetPresent) {

if (!present) {

return false;

}

}

return true;

}

}

**Javascript**

**A.** . **Take a sentence as an input and reverse every word in that sentence.**

**a. Example - This is a sunny day > shiT si a ynnus yad.**

function reverseWords(sentence) {

// Split the sentence into words

const words = sentence.split(' ');

// Reverse each word and store them in a new array

const reversedWords = words.map(word => reverseWord(word));

// Join the reversed words to form the reversed sentence

const reversedSentence = reversedWords.join(' ');

return reversedSentence;

}

function reverseWord(word) {

// Convert the word to an array of characters, reverse it, and then join it back

return word.split('').reverse().join('');

}

// Example usage:

const inputSentence = "This is a sunny day";

const reversedSentence = reverseWords(inputSentence);

console.log(reversedSentence); // Output: "sihT si a ynnus yad"

**B. Perform sorting of an array in descending order.**

const arr = [5, 1, 3, 7, 2, 8, 4, 6];

// Use a custom sorting function to sort in descending order

arr.sort(function(a, b) {

return b - a; // Compare b to a for descending order

});

console.log(arr); // Output: [8, 7, 6, 5, 4, 3, 2, 1]

**HTML**

**A. Create a basic calculator using HTML, CSS, and JavaScript with the functionality of add, subtract, multiply and divide. Use the following picture for reference.**

<!DOCTYPE html>

<html>

<head>

<title>Basic Calculator</title>

<style>

body {

font-family: Arial, sans-serif;

text-align: center;

}

.calculator {

width: 300px;

margin: 0 auto;

border: 1px solid #ccc;

padding: 10px;

border-radius: 10px;

box-shadow: 0px 0px 10px rgba(0, 0, 0, 0.2);

}

.calculator input[type="text"] {

width: 100%;

padding: 10px;

margin: 5px 0;

font-size: 20px;

}

.calculator button {

width: 60px;

height: 60px;

font-size: 20px;

margin: 5px;

cursor: pointer;

border: none;

background-color: #f2f2f2;

}

.calculator button:hover {

background-color: #ddd;

}

</style>

</head>

<body>

<div class="calculator">

<input type="text" id="display" readonly>

<div>

<button onclick="appendToDisplay('1')">1</button>

<button onclick="appendToDisplay('2')">2</button>

<button onclick="appendToDisplay('3')">3</button>

<button onclick="appendToDisplay('+')">+</button>

</div>

<div>

<button onclick="appendToDisplay('4')">4</button>

<button onclick="appendToDisplay('5')">5</button>

<button onclick="appendToDisplay('6')">6</button>

<button onclick="appendToDisplay('-')">-</button>

</div>

<div>

<button onclick="appendToDisplay('7')">7</button>

<button onclick="appendToDisplay('8')">8</button>

<button onclick="appendToDisplay('9')">9</button>

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

</div>

<div>

<button onclick="appendToDisplay('0')">0</button>

<button onclick="clearDisplay()">C</button>

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

<button onclick="appendToDisplay('/')">/</button>

</div>

</div>

<script>

function appendToDisplay(value) {

document.getElementById('display').value += value;

}

function clearDisplay() {

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

}

function calculate() {

try {

const result = eval(document.getElementById('display').value);

document.getElementById('display').value = result;

} catch (error) {

document.getElementById('display').value = 'Error';

}

}

</script>

</body>

</html>

**B. Create a survey form with Fields; First Name, Last Name, Date of Birth, Country (dropdown), Gender (checkbox), Profession, email, and mobile number. All the input fields are necessary to submit the form. Create two buttons Submit and Reset. Reset will reset the form while clicking on submit, first, it will check all the fields and necessary validations and then a popup will appear displaying all the selected values with the label in front of it. On closing the popup, the form should reset all the values. Use the following for reference**

<!DOCTYPE html>

<html>

<head>

<title>Survey Form</title>

<style>

body {

font-family: Arial, sans-serif;

text-align: center;

}

.container {

width: 50%;

margin: 0 auto;

padding: 20px;

border: 1px solid #ccc;

border-radius: 10px;

box-shadow: 0px 0px 10px rgba(0, 0, 0, 0.2);

}

label {

font-weight: bold;

}

select, input[type="text"], input[type="email"], input[type="tel"] {

width: 100%;

padding: 10px;

margin: 5px 0;

font-size: 16px;

}

.gender-label {

margin-right: 10px;

}

.btn {

margin-top: 10px;

padding: 10px 20px;

font-size: 18px;

}

.popup {

display: none;

position: fixed;

top: 0;

left: 0;

width: 100%;

height: 100%;

background-color: rgba(0, 0, 0, 0.7);

z-index: 1;

}

.popup-content {

position: absolute;

top: 50%;

left: 50%;

transform: translate(-50%, -50%);

background-color: #fff;

padding: 20px;

border-radius: 10px;

box-shadow: 0px 0px 10px rgba(0, 0, 0, 0.2);

}

.close {

position: absolute;

top: 10px;

right: 10px;

cursor: pointer;

}

</style>

</head>

<body>

<div class="container">

<h2>Survey Form</h2>

<form id="surveyForm">

<label for="firstName">First Name:</label>

<input type="text" id="firstName" required><br>

<label for="lastName">Last Name:</label>

<input type="text" id="lastName" required><br>

<label for="dob">Date of Birth:</label>

<input type="date" id="dob" required><br>

<label for="country">Country:</label>

<select id="country" required>

<option value="">Select Country</option>

<option value="USA">USA</option>

<option value="Canada">Canada</option>

<option value="UK">UK</option>

<!-- Add more options as needed -->

</select><br>

<label>Gender:</label>

<label class="gender-label"><input type="checkbox" name="gender" value="Male"> Male</label>

<label class="gender-label"><input type="checkbox" name="gender" value="Female"> Female</label>

<label class="gender-label"><input type="checkbox" name="gender" value="Other"> Other</label><br>

<label for="profession">Profession:</label>

<input type="text" id="profession" required><br>

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

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

<label for="mobile">Mobile Number:</label>

<input type="tel" id="mobile" required><br>

<button type="button" class="btn" onclick="submitForm()">Submit</button>

<button type="button" class="btn" onclick="resetForm()">Reset</button>

</form>

</div>

<!-- Popup for displaying selected values -->

<div id="popup" class="popup">

<div class="popup-content">

<span class="close" onclick="closePopup()">&times;</span>

<h3>Selected Values:</h3>

<div id="selectedValues"></div>

</div>

</div>

<script>

function submitForm() {

// Validate the form

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

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

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

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

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

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

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

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

if (!firstName || !lastName || !dob || !country || genderCheckboxes.length === 0 || !profession || !email || !mobile) {

alert('Please fill in all the required fields.');

return;

}

// Build and display the selected values

const selectedValues = `

<p><strong>First Name:</strong> ${firstName}</p>

<p><strong>Last Name:</strong> ${lastName}</p>

<p><strong>Date of Birth:</strong> ${dob}</p>

<p><strong>Country:</strong> ${country}</p>

<p><strong>Gender:</strong> ${Array.from(genderCheckboxes).map(checkbox => checkbox.value).join(', ')}</p>

<p><strong>Profession:</strong> ${profession}</p>

<p><strong>Email:</strong> ${email}</p>

<p><strong>Mobile Number:</strong> ${mobile}</p>

`;

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

// Show the popup

document.getElementById('popup').style.display = 'block';

}

function resetForm() {

// Reset the form

document.getElementById('surveyForm').reset();

}

function closePopup() {

// Close the popup and reset the form

document.getElementById('popup').style.display = 'none';

resetForm();

}

</script>

</body>

</html>