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

import java.util.\*;

public class Shuffle {

public static void main(String[] args) {

Integer[] myArr = {1, 2, 3, 4, 5, 6, 7};

List<Integer> myList = Arrays.asList(myArr);

Collections.shuffle(myList);

myList.toArray(myArr);

System.out.println(Arrays.toString(myArr));

}

}

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

import java.util.HashMap;

import java.util.Map;

import java.util.Scanner;

public class Main {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

System.out.print("Enter a Roman numeral: ");

String roman = scanner.nextLine();

int result = romanToInt(roman);

System.out.println("Integer representation: " + result);

}

public static int romanToInt(String s) {

Map<Character, Integer> romanNumerals = new HashMap<>();

romanNumerals.put('I', 1);

romanNumerals.put('V', 5);

romanNumerals.put('X', 10);

romanNumerals.put('L', 50);

romanNumerals.put('C', 100);

romanNumerals.put('D', 500);

romanNumerals.put('M', 1000);

int total = 0;

int prevValue = 0;

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

char numeral = s.charAt(i);

int value = romanNumerals.get(numeral);

if (value < prevValue) {

total -= value;

} else {

total += value;

}

prevValue = value;

}

return total;

}

}

C)Check if the input is pangram or not.

import java.util.HashSet;

import java.util.Scanner;

import java.util.Set;

public class PangramChecker {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

System.out.print("Enter a sentence: ");

String sentence = scanner.nextLine();

boolean isPangram = checkPangram(sentence);

if (isPangram) {

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

} else {

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

}

}

public static boolean checkPangram(String sentence) {

Set<Character> charSet = new HashSet<>();

for (char c : sentence.toLowerCase().toCharArray()) {

if (Character.isLetter(c)) {

charSet.add(c);

}

}

return charSet.size() == 26;

}

}

Javascript

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

function reverseWords(sentence) {

let words = sentence.split(" ");

let reversedWords = words.map(word => {

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

});

let reversedSentence = reversedWords.join(" ");

return reversedSentence;

}

let inputSentence = "Hello World, how are you?";

let result = reverseWords(inputSentence);

console.log(result);

B)Perform sorting of an array in descending order.

let numbers = [5, 2, 8, 1, 3];

numbers.sort(function(a, b) {

return b - a;

});

console.log(numbers);

Web pages

A. Create a basic calculator using HTML, CSS, and JavaScript with the functionality of add, subtract, multiply and divide

**HTML:**

<html lang="en">

<head>

<meta charset="UTF-8">

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

<title>My Calculator</title>

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

</head>

<body>

<section>

<div class="container">

<div id="display"></div>

<div class="buttons">

<div class="button">C</div>

<div class="button">/</div>

<div class="button">\*</div>

<div class="button">&larr;</div>

<div class="button">7</div>

<div class="button">8</div>

<div class="button">9</div>

<div class="button">-</div>

<div class="button">4</div>

<div class="button">5</div>

<div class="button">6</div>

<div class="button">+</div>

<div class="button">1</div>

<div class="button">2</div>

<div class="button">3</div>

<div class="button">.</div>

<div class="button">(</div>

<div class="button">0</div>

<div class="button">)</div>

<div id="equal" class="button">=</div>

</div>

</div>

</section>

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

</body>

</html>

**Javascript:**

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

let buttons = Array.from(document.getElementsByClassName('button'));

buttons.map( button => {

button.addEventListener('click', (e) => {

switch(e.target.innerText){

case 'C':

display.innerText = '';

break;

case '=':

try{

display.innerText = eval(display.innerText);

} catch {

display.innerText = "Error"

}

break;

case '←':

if (display.innerText){

display.innerText = display.innerText.slice(0, -1);

}

break;

default:

display.innerText += e.target.innerText;

}

});

});

**CSS:**

.container {

max-width: 400px;

margin: 10vh auto 0 auto;

box-shadow: 0px 0px 43px 17px rgba(153,153,153,1);

}

#display {

text-align: right;

height: 70px;

line-height: 70px;

padding: 16px 8px;

font-size: 25px;

}

.buttons {

display: grid;

border-bottom: 1px solid #999;

border-left: 1px solid#999;

grid-template-columns: 1fr 1fr 1fr 1fr;

}

.buttons > div {

border-top: 1px solid #999;

border-right: 1px solid#999;

}

.button {

border: 0.5px solid #999;

line-height: 100px;

text-align: center;

font-size: 25px;

cursor: pointer;

}

#equal {

background-color: rgb(85, 85, 255);

color: white;

}

.button:hover {

background-color: #323330;

color: white;

transition: 0.5s ease-in-out;

}

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.

<!DOCTYPE html>

<html>

<head>

<title>Survey Form</title>

<style>

body {

font-family: Arial, sans-serif;

background-color: #f2f2f2;

}

.container {

background-color: #fff;

max-width: 600px;

margin: 0 auto;

padding: 20px;

border-radius: 5px;

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

}

label {

display: block;

margin-bottom: 5px;

font-weight: bold;

}

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

width: 100%;

padding: 10px;

margin-bottom: 15px;

border: 1px solid #ccc;

border-radius: 3px;

}

select {

width: 100%;

padding: 10px;

margin-bottom: 15px;

border: 1px solid #ccc;

border-radius: 3px;

}

input[type="checkbox"] {

margin-right: 5px;

}

.btn-container {

text-align: center;

}

button {

padding: 10px 20px;

background-color: #4CAF50;

color: white;

border: none;

border-radius: 3px;

cursor: pointer;

}

.popup {

display: none;

position: fixed;

top: 0;

left: 0;

width: 100%;

height: 100%;

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

display: flex;

justify-content: center;

align-items: center;

}

.popup-content {

background-color: #fff;

padding: 20px;

border-radius: 5px;

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

}

</style>

</head>

<body>

<div class="container">

<h2>Survey Form</h2>

<form id="survey-form">

<label for="first-name">First Name:</label>

<input type="text" id="first-name" required>

<label for="last-name">Last Name:</label>

<input type="text" id="last-name" required>

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

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

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

<select id="country" required>

<option value="">Select a country</option>

<option value="in">India</option>

<option value="us">United States</option>

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

<option value="uk">United Kingdom</option>

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

</select>

<label>Gender:</label>

<input type="checkbox" id="male" name="gender" value="Male">

<label for="male">Male</label>

<input type="checkbox" id="female" name="gender" value="Female">

<label for="female">Female</label>

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

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

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

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

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

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

<div class="btn-container">

<button type="button" id="submit-btn">Submit</button>

<button type="button" id="reset-btn">Reset</button>

</div>

</form>

</div>

<!-- Popup for displaying survey responses -->

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

<div class="popup-content">

<h2>Your Survey Responses:</h2>

<div id="response-data"></div>

<button type="button" id="close-popup">Close</button>

</div>

</div>

<script>

const form = document.getElementById('survey-form');

const submitBtn = document.getElementById('submit-btn');

const resetBtn = document.getElementById('reset-btn');

const responsePopup = document.getElementById('response-popup');

const closePopupBtn = document.getElementById('close-popup');

const responseData = document.getElementById('response-data');

// Function to display the response data in the popup

function showResponseData() {

const firstName = document.getElementById('first-name').value;

const lastName = document.getElementById('last-name').value;

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

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

const gender = Array.from(document.getElementsByName('gender'))

.filter(input => input.checked)

.map(input => input.value)

.join(', ');

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

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

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

responseData.innerHTML = `

<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> ${gender}</p>

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

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

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

`;

responsePopup.style.display = 'block';

}

// Event listener for the submit button

submitBtn.addEventListener('click', () => {

if (form.checkValidity()) {

showResponseData();

form.reset();

}

});

// Event listener for the reset button

resetBtn.addEventListener('click', () => {

form.reset();

});

// Event listener for closing the response popup

closePopupBtn.addEventListener('click', () => {

responsePopup.style.display = 'none';

});

</script>

</body>

</html>