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**REG NO: 24MCA0234**

1. **Develop a Javascript to capture the marks scored in 5 subjects and display the total, average and grade of a student. Apply suitable conditions for grades like ‘S’, ‘A’, ‘B’, ‘C’ and ‘F’. Use appropriate styles for display.**

**CODE:**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

**<meta charset="UTF-8">**

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

**<title>student marks calc</title>**

**</head>**

**<body>**

**<div calss="container">**

**<form id="marksForm">**

**<label for="subject1">SUBJECT 1:</label>**

**<input type="number" id="subject1" required><br><br>**

**<label for="subject2">SUBJECT2:</label>**

**<input type="number" id="subject2" required ><br><br>**

**<label for="subject2">SUBJECT3:</label>**

**<input type="number" id="subject3" required ><br><br>**

**<label for="subject2">SUBJECT4:</label>**

**<input type="number" id="subject4" required ><br><br>**

**<label for="subject2">SUBJECT5:</label>**

**<input type="number" id="subject5" required ><br><br>**

**<button type="button" onclick="calc\_marks()">CALCULATE</button>**

**</form>**

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

**</div>**

**<script>**

**function calc\_marks(){**

**let s1=parseFloat(document.getElementById('subject1').value);**

**let s2=parseFloat(document.getElementById('subject2').value);**

**let s3=parseFloat(document.getElementById('subject3').value);**

**let s4=parseFloat(document.getElementById('subject4').value);**

**let s5=parseFloat(document.getElementById('subject5').value);**

**if(isNaN(s1) || isNaN(s2) || isNaN(s3) || isNaN(s4) || isNaN(s5))**

**{**

**alert("enter number greater than zero");**

**return**

**}**

**let total= s1+s2+s3+s4+s5**

**let avg= total/5**

**let grade;**

**if(avg>=90){**

**grade='S'**

**} else if(avg>=80){**

**grade='A'**

**}else if(avg>=70){**

**grade='B'**

**}else if(avg>=60){**

**grade='C'**

**}else if(avg>=50){**

**grade='D'**

**}else**

**{**

**grade='F'**

**}**

**document.getElementById('output').innerHTML= `<p>Total marks: ${total}</p>**

**<p> Your average is: ${avg.toFixed(2)}</p>**

**<p>Grade: <span style="color: ${give\_colour(grade)}">${grade}</span></p>**

**`;**

**function give\_colour(grade){**

**switch(grade){**

**case 'S': return 'green';**

**case 'A': return 'blue';**

**case 'B': return 'orange';**

**case 'C': return 'brown';**

**case 'D': return 'black';**

**case 'F': return 'red'**

**}**

**}**

**}**

**</script>**

**</body>**

**</html>**

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Description automatically generated**

1. **Develop an interface in which capture the number of students in a class and use prompt to capture the name of each student and store it in an array. Iterate through the array to identify number of vowels in each student name.**

**CODE:.**

**<!DOCTYPE html>**

**<html>**

**<head>**

**<title>hi</title>**

**</head>**

**<body>**

**<h3>Enter number of students:</h3>**

**<input type="number" id="numStudents">**

**<button onclick="Names()">Submit</button>**

**<div id="result"></div>**

**<script>**

**function Names() {**

**const numStudents = +document.getElementById("numStudents").value;**

**const names = [];**

**for (let i = 0; i < numStudents; i++) {**

**const name = prompt(`Enter name of student ${i + 1}:`);**

**names.push(name);**

**}**

**let resultHTML = '<h4>Vowel Count:</h4>';**

**names.forEach(name => {**

**const vowels = (name.match(/[aeiouAEIOU]/g) || []).length;**

**resultHTML += `<p>${name}: ${vowels} vowels</p>`;**

**});**

**document.getElementById("result").innerHTML = resultHTML;**

**}**

**</script>**

**</body>**

**</html>**

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1. Design a HTML page to capture the number from the user and drop down to with options MAX, MIN, FIND to
   1. Number of elements less than(MIN) or greater than(MAX) the input element
   2. Find the input number and display its position in Alert Pop up.

(Assume the existence of prepopulated array)

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

**<meta charset="UTF-8">**

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

**<title>Array Operations</title>**

**<style>**

**.result {**

**margin-top: 20px;**

**font-size: 18px;**

**font-weight: bold;**

**}**

**#arrayDisplay {**

**margin-top: 10px;**

**font-size: 16px;**

**font-style: italic;**

**}**

**</style>**

**<script>**

**let userArray = [];**

**function Operation() {**

**const inputNumber = parseInt(document.getElementById('inputNumber').value);**

**const operation = document.getElementById('operationSelect').value;**

**if (isNaN(inputNumber)) {**

**document.getElementById('operationResult').innerText = 'Please enter a valid number!';**

**return;**

**}**

**let resultMessage = "Current array: [" + userArray.join(", ") + "]\n";**

**switch (operation) {**

**case 'MIN':**

**let minCount = userArray.filter(num => num < inputNumber).length;**

**document.getElementById('operationResult').innerText = 'Number of elements less than ' + inputNumber + ': ' + minCount;**

**break;**

**case 'MAX':**

**let maxCount = userArray.filter(num => num > inputNumber).length;**

**document.getElementById('operationResult').innerText = 'Number of elements greater than ' + inputNumber + ': ' + maxCount;**

**break;**

**case 'FIND':**

**const index = userArray.indexOf(inputNumber);**

**if (index === -1) {**

**document.getElementById('operationResult').innerText = 'The number ' + inputNumber + ' is not found in the array.';**

**} else {**

**document.getElementById('operationResult').innerText = 'The position of ' + inputNumber + ' in the array is: ' + index;**

**}**

**break;**

**default:**

**document.getElementById('operationResult').innerText = 'Please select an operation.';**

**break;**

**}**

**}**

**function updateArray() {**

**const arrayInput = document.getElementById('arrayInput').value;**

**const arrayValues = arrayInput.split(',').map(num => parseInt(num.trim()));**

**if (arrayValues.some(isNaN)) {**

**alert('Please enter a valid array of numbers!');**

**return;**

**}**

**userArray = arrayValues;**

**document.getElementById('arrayDisplay').innerText = 'Current array: [' + userArray.join(", ") + ']';**

**}**

**</script>**

**</head>**

**<body>**

**<p>Enter array as a comma-separated list:</p>**

**<input type="text" id="arrayInput" placeholder="Eg-: 5, 12, 17, 24, 8" required>**

**<button onclick="updateArray()">Update Array</button>**

**<div id="arrayDisplay"></div><hr>**

**<label for="inputNumber">Enter a number:</label>**

**<input type="number" id="inputNumber" required>**

**<label for="operationSelect">Select Operation:</label>**

**<select id="operationSelect">**

**<option value="MIN">MIN</option>**

**<option value="MAX">MAX</option>**

**<option value="FIND">FIND</option>**

**</select>**

**<button onclick="Operation()">Execute</button>**

**<div id="operationResult" class="result"></div>**

**</body>**

**</html>**

**output**

**minA screenshot of a computer

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**maxA screenshot of a computer

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**A screenshot of a computer

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1. Create a key value array type with 10 different elements and display number of values of the type ‘number’ and ‘string’. Use **typeof** operator.

**Note: In JavaScript there are 5 different data types that can contain values:**

**string**

**number**

**boolean**

**object**

**function**

**code:**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

**<meta charset="UTF-8">**

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

**<title>count</title>**

**<script>**

**function countTypes() {**

**const keyValueObj = {**

**name: "Prakash",**

**age: 22,**

**country: "India",**

**height: 175,**

**profession: "student",**

**salary: 1000,**

**isActive: true,**

**hobbies: ["editing", "aftereffects"],**

**birthday: "05-04-2002",**

**userID: 3421**

**};**

**let numberCount = 0;**

**let stringCount = 0;**

**for (let key in keyValueObj) {**

**const value = keyValueObj[key];**

**if (typeof value === "number") numberCount++;**

**if (typeof value === "string") stringCount++;**

**}**

**document.getElementById("result").innerText = `Number of 'number' values: ${numberCount}\nNumber of 'string' values: ${stringCount}`;**

**}**

**</script>**

**</head>**

**<body>**

**<h1>Count types in Key-value array</h1>**

**<button onclick="countTypes()">Count Types</button>**

**<div id="result" style="margin-top: 20px; font-weight: bold;"></div>**

**</body>**

**</html>**

**Output:**

**A black text on a white background

Description automatically generated**