1. Assignment: Determine Discount Percentage

- Task: Create a JavaScript program that prompts the user for their total purchase amount. Implement a conditional statement to determine the discount percentage based on the following criteria:

- If the purchase amount is less than $50, no discount.

- If the purchase amount is between $50 and $100 (inclusive), apply a 5% discount.

- If the purchase amount is more than $100, apply a 10% discount.

- Expected Output: Display the original amount, the discount percentage applied, and the final discounted amount.

2. Assignment: Grade Calculator

- Task: Write a JavaScript program that takes a student's numerical grade as input and uses a `switch` statement to determine their letter grade according to the standard grading scale:

- 90-100: A

- 80-89: B

- 70-79: C

- 60-69: D

- Below 60: F

- Expected Output: Display both the numerical grade and the corresponding letter grade.

3. Assignment: Time of Day Greeting

- Task: Create a JavaScript function that takes the current hour as input and uses a conditional statement to greet the user appropriately based on the time of day:

- If the hour is before 12 PM, display "Good morning."

- If the hour is between 12 PM and 5 PM, display "Good afternoon."

- If the hour is after 5 PM, display "Good evening."

- Expected Output: The greeting corresponding to the current time.

4. Assignment: Season Checker

- Task: Write a JavaScript program that takes a month as input and uses a `switch` statement to determine and display the season associated with that month:

- December, January, February: Winter

- March, April, May: Spring

- June, July, August: Summer

- September, October, November: Autumn

- Expected Output: The season corresponding to the input month.

5. Assignment: Leap Year Checker

- Task: Develop a JavaScript function that takes a year as input and uses a conditional statement to determine whether the year is a leap year or not. A leap year is either divisible by 4 but not by 100 unless it is divisible by 400.

- Expected Output: Display whether the given year is a leap year or not.

1. Determine Discount Percentage

```javascript

let purchaseAmount = parseFloat(prompt("Enter your purchase amount:"));

let discountPercentage;

if (purchaseAmount < 50) {

discountPercentage = 0;

} else if (purchaseAmount <= 100) {

discountPercentage = 5;

} else {

discountPercentage = 10;

}

let discountAmount = (purchaseAmount \* discountPercentage) / 100;

let discountedTotal = purchaseAmount - discountAmount;

console.log(`Original Amount: $${purchaseAmount}`);

console.log(`Discount Percentage: ${discountPercentage}%`);

console.log(`Discounted Amount: $${discountedTotal}`);

```

2. Grade Calculator

```javascript

let numericalGrade = parseFloat(prompt("Enter your numerical grade:"));

let letterGrade;

switch (true) {

case numericalGrade >= 90 && numericalGrade <= 100:

letterGrade = "A";

break;

case numericalGrade >= 80 && numericalGrade < 90:

letterGrade = "B";

break;

case numericalGrade >= 70 && numericalGrade < 80:

letterGrade = "C";

break;

case numericalGrade >= 60 && numericalGrade < 70:

letterGrade = "D";

break;

default:

letterGrade = "F";

}

console.log(`Numerical Grade: ${numericalGrade}`);

console.log(`Letter Grade: ${letterGrade}`);

```

3. Time of Day Greeting

```javascript

function getGreeting(hour) {

let greeting;

if (hour < 12) {

greeting = "Good morning.";

} else if (hour < 17) {

greeting = "Good afternoon.";

} else {

greeting = "Good evening.";

}

return greeting;

}

let currentHour = new Date().getHours();

console.log(getGreeting(currentHour));

```

4. Season Checker

```javascript

let inputMonth = prompt("Enter a month:").toLowerCase();

let season;

switch (inputMonth) {

case "december":

case "january":

case "february":

season = "Winter";

break;

case "march":

case "april":

case "may":

season = "Spring";

break;

case "june":

case "july":

case "august":

season = "Summer";

break;

case "september":

case "october":

case "november":

season = "Autumn";

break;

default:

season = "Invalid Month";

}

console.log(`Season for ${inputMonth}: ${season}`);

```

5. Leap Year Checker

```javascript

function isLeapYear(year) {

if ((year % 4 === 0 && year % 100 !== 0) || (year % 400 === 0)) {

return true;

} else {

return false;

}

}

let inputYear = parseInt(prompt("Enter a year:"));

console.log(`${inputYear} is a leap year: ${isLeapYear(inputYear)}`);

```

These solutions provide both the JavaScript code and the expected outputs based on different inputs or scenarios.

Assignment 1:

Task: Print numbers from 1 to 10 using a for loop.

Solution:

javascriptCopy code

for (let i = 1; i <= 10; i++) { console.log(i); }

Assignment 2:

Task: Calculate the factorial of a given number using a while loop.

Solution:

javascriptCopy code

let n = 5; let result = 1; let i = 1; while (i <= n) { result \*= i; i++; } console.log(result); // Output: 120

Assignment 3:

Task: Print the square of numbers from 1 to 5 using a for...of loop.

Solution:

javascriptCopy code

const numbers = [1, 2, 3, 4, 5]; for (const num of numbers) { console.log(num \* num); }

Assignment 4:

Task: Find the sum of all odd numbers in an array using a for loop.

Solution:

javascriptCopy code

const numbersArray = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]; let sum = 0; for (let i = 0; i < numbersArray.length; i++) { if (numbersArray[i] % 2 !== 0) { sum += numbersArray[i]; } } console.log(sum); // Output: 25 (1 + 3 + 5 + 7 + 9)

Assignment 5:

Task: Check if a given number is a prime number using a while loop.

Solution:

javascriptCopy code

let number = 11; let isPrime = true; let i = 2; while (i < number) { if (number % i === 0) { isPrime = false; break; } i++; } console.log(isPrime); // Output: true

Assignment 6:

Task: Reverse a string using a for loop.

Solution:

javascriptCopy code

let str = 'hello'; let reversed = ''; for (let i = str.length - 1; i >= 0; i--) { reversed += str[i]; } console.log(reversed); // Output: 'olleh'

These solutions use loops directly without encapsulating them in functions. They demonstrate different loop structures and their applications in solving various problems.

Top of Form

Calcuate area of circle with function(2\*pi\*r\*r)

// Function to calculate the area of a circle

function calculateArea(radius) {

const pi = 3.14159;

return pi \* radius \* radius;

}

// Example usage:

let circleArea = calculateArea(5);

console.log(circleArea); // Output: 78.53975

// Function to check if a number is prime

function checkPrime(number) {

if (number <= 1) return false;

for (let i = 2; i <= Math.sqrt(number); i++) {

if (number % i === 0) {

return false;

}

}

return true;

}

// Example usage:

let isPrime = checkPrime(17);

console.log(isPrime); // Output: true

// Function to count the number of vowels in a string

function countVowels(inputString) {

const vowels = 'aeiouAEIOU';

let count = 0;

for (let char of inputString) {

if (vowels.includes(char)) {

count++;

}

}

return count;

}

// Taking input from the user using prompt

let userInput = prompt('Enter a string: ');

// Call the function with user input as an argument

let vowelCount = countVowels(userInput);

// Output the result

console.log(`Number of vowels: ${vowelCount}`);

//Random string generators:

<html>

<head>

<title> Random String Generator </title>

</head>

<script>

function randomString() {

//define a variable consisting alphabets in small and capital letter

var characters = "ABCDEFGHIJKLMNOPQRSTUVWXTZabcdefghiklmnopqrstuvwxyz";

//specify the length for the new string

var lenString = 7;

var randomstring = '';

//loop to select a new character in each iteration

for (var i=0; i<lenString; i++) {

var rnum = Math.floor(Math.random() \* characters.length);

randomstring += characters.substring(rnum, rnum+1);

}

//display the generated string

document.getElementById("randomfield").innerHTML = randomstring;

}

</script>

<body>

<center>

<h2 style="color: green"> Random String Generator </h2>

<h3> Click the button to generate a random string </h3>

<form name="randomform">

<input type="button" value="Generate Random String" onClick="randomString();">

<br><br>

<b><p id="randomfield" style="color: green"> </p></b>

</form>

</center>

</body>

</html>