Javascript assignment1

1. Write a program to find whether a given year is a leap year or not.

Ans.

function isLeapYear(year) {

// Check if the year is divisible by 4

if (year % 4 === 0) {

// If it's divisible by 100 and not divisible by 400, it's not a leap year

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

return false;

} else {

// If it's not divisible by 100 or it's divisible by 400, it's a leap year

return true;

}

} else {

// If it's not divisible by 4, it's not a leap year

return false;

}

}

// Test the function

const year = 2024; // Change this to the year you want to check

if (isLeapYear(year)) {

console.log(year + " is a leap year.");

} else {

console.log(year + " is not a leap year.");

}

2. Write a JavaScript program to convert temperatures to and from Celsius,

Fahrenheit.

[ Formula : c/5 = (f-32)/9 [ where c = temperature in Celsius and f = temperature in

Fahrenheit ]

Expected Output :

60°C is 140 °F

45°F is 7.222222222222222°C

Ans.

function celsiusToFahrenheit(celsius) {

var fahrenheit = (celsius \* 9/5) + 32;

return fahrenheit;

}

function fahrenheitToCelsius(fahrenheit) {

var celsius = (fahrenheit - 32) \* 5/9;

return celsius;

}

var celsiusTemperature = 60;

var fahrenheitTemperature = 45;

var celsiusToFahrenheitResult = celsiusToFahrenheit(celsiusTemperature);

var fahrenheitToCelsiusResult = fahrenheitToCelsius(fahrenheitTemperature);

console.log(celsiusTemperature + "°C is " + celsiusToFahrenheitResult.toFixed(2) + "°F");

console.log(fahrenheitTemperature + "°F is " + fahrenheitToCelsiusResult.toFixed(2) + "°C");

1. Write a program to find the factorial of a number.

Ans.

function factorialRecursive(n) {

if (n === 0 || n === 1) {

return 1;

} else {

return n \* factorialRecursive(n - 1);

}

}

function factorialIterative(n) {

let result = 1;

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

result \*= i;

}

return result;

}

// Get user input

const userInput = prompt("Enter a number to calculate its factorial:");

// Parse user input to an integer

const num = parseInt(userInput);

// Check if the input is a valid number

if (!isNaN(num)) {

const recursiveResult = factorialRecursive(num);

const iterativeResult = factorialIterative(num);

console.log(`The factorial of ${num} using recursive method is ${recursiveResult}`);

console.log(`The factorial of ${num} using iterative method is ${iterativeResult}`);

} else {

console.log("Invalid input. Please enter a valid number.");

}