**Zen Class — Variables Arrays & Objects**

# ****Task 1: Simple Programs todo for variables****

1. Declare four variables without assigning values and print them in console

Solution :

let variable1,varialbel2,variable3,variable4;

console.log(variable1);

console.log(variable2);

console.log(variable3);

console.log(variable4);

2.How to get value of the variable myvar as output

var myvar= 1;  
console.log(myvar);

3.Declare variables to store your first name, last name, marital status, country and age in multiple lines

var firstName = "John";

var lastName = "Doe";

var maritalStatus = "Single";

var country = "United States";

var age = 30;

4. Declare variables to store your first name, last name, marital status, country and age in a single line

Var [firstName, lastName, maritalStatus, country, age] = ["John", "Doe", "Single", "United States", 30];

5.  Declare variables and assign string, boolean, undefined and null data types

var myString = "Hello, World!"; // String

var myBoolean = true; // Boolean

var myUndefined = undefined; // Undefined

var myNull = null; // Null

6. Convert the string to integer

**Using parseInt():**

var myString = "123";

var myInteger = parseInt(myString);

console.log(myInteger); // Outputs: 123

**Using Number():**

var myString = "123";

var myInteger = Number(myString);

console.log(myInteger); // Outputs: 123

**Using the plus sign (+):**

var myString = "123";

var myInteger = +myString;

console.log(myInteger); // Outputs: 123

7.  Write 6 statement which provide truthy & falsey values.

**Truthy values:**

Using a non-empty string:

var truthyString = "Hello, World!";

if (truthyString) { console.log("Truthy!"); }

else { console.log("Falsy!"); } // Outputs: Truthy!

Using a number other than 0:

var truthyNumber = 42;

if (truthyNumber) { console.log("Truthy!"); }

else { console.log("Falsy!"); } // Outputs: Truthy!

Using an array with elements:

var truthyArray = [1, 2, 3];

if (truthyArray) { console.log("Truthy!"); }

else { console.log("Falsy!"); } // Outputs: Truthy!

Falsy values:

Using an empty string:

var falsyString = "";

if (falsyString) { console.log("Truthy!"); }

else { console.log("Falsy!"); } // Outputs: Falsy!

Using the number 0:

var falsyNumber = 0;

if (falsyNumber) { console.log("Truthy!"); }

else { console.log("Falsy!"); } // Outputs: Falsy!

Using the value null:

var falsyValue = null;

if (falsyValue) { console.log("Truthy!"); }

else { console.log("Falsy!"); } // Outputs: Falsy!

# Task 2: Simple Programs todo for Operators

**Square of a number**

var number = 5;

var square = number \*\* 2; // Using the \*\* operator

console.log(square); // Outputs: 25

Swapping 2 numbers

// Initial values

var a = 5;

var b = 10;

console.log("Before swapping:");

console.log("a =", a);

console.log("b =", b);

// Swapping using a temporary variable

var temp = a;

a = b;

b = temp;

console.log("After swapping:");

console.log("a =", a);

console.log("b =", b);

Addition of 3 numbers

var number1 = 5;

var number2 = 10;

var number3 = 15;

var sum = number1 + number2 + number3;

console.log("The sum of the three numbers is:", sum);

Celsius to Fahrenheit conversion

function celsiusToFahrenheit(celsius) {

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

return fahrenheit;

}

var celsiusTemperature = 25;

var fahrenheitTemperature = celsiusToFahrenheit(celsiusTemperature);

console.log(celsiusTemperature + "°C is equal to " + fahrenheitTemperature + "°F");

Meter to miles

function metersToMiles(meters) {

var miles = meters / 1609.34;

return miles;

}

var metersValue = 1609.34; // Replace with the number of meters you want to convert

var milesValue = metersToMiles(metersValue);

console.log(metersValue + " meters is equal to " + milesValue + " miles");

Pounds to kg

function poundsToKilograms(pounds) {

var kilograms = pounds \* 0.453592;

return kilograms;

}

var poundsValue = 10; // Replace with the number of pounds you want to convert

var kilogramsValue = poundsToKilograms(poundsValue);

console.log(poundsValue + " pounds is equal to " + kilogramsValue + " kilograms");

Calculate Batting Average

function calculateBattingAverage(totalRuns, inningsDismissed) {

if (inningsDismissed === 0) {

return "N/A"; // If the batsman was not dismissed, return "N/A"

} else {

var battingAverage = totalRuns / inningsDismissed;

return battingAverage.toFixed(2); // Round to two decimal places

}

}

var totalRuns = 500; // Replace with the total runs scored by the batsman

var inningsDismissed = 15; // Replace with the number of innings in which the batsman was dismissed

var average = calculateBattingAverage(totalRuns, inningsDismissed);

console.log("Batting Average: " + average);

Calculate five test scores and print their average

// Define the test scores

var score1 = 85; var score2 = 92; var score3 = 78; var score4 = 90; var score5 = 88;

// Calculate the sum of the test scores

var sum = score1 + score2 + score3 + score4 + score5;

// Calculate the average

var average = sum / 5;

console.log("The average test score is: " + average);

Power of any number x ^ y.

var x = 2;

var y = 3;

var result = Math.pow(x, y);

console.log(x + " ^ " + y + " = " + result);

Calculate Simple Interest

function calculateSimpleInterest(principal, rate, time) {

var interest = (principal \* rate \* time) / 100;

return interest;

}

var principalAmount = 1000; // Replace with the principal amount

var rateOfInterest = 5; // Replace with the rate of interest

var timePeriod = 2; // Replace with the time period in years

var simpleInterest = calculateSimpleInterest(principalAmount, rateOfInterest, timePeriod);

console.log("Simple Interest: Rs." + simpleInterest);

Calculate area of an equilateral triangle

function calculateEquilateralTriangleArea(sideLength) {

var area = (Math.pow(sideLength, 2) \* Math.sqrt(3)) / 4;

return area;

}

var sideLength = 5; // Replace with the length of the sides of the equilateral triangle

var triangleArea = calculateEquilateralTriangleArea(sideLength);

console.log("Area of the equilateral triangle: " + triangleArea);

Area Of Isosceles Triangle

function calculateIsoscelesTriangleArea(base, height) {

var area = (base \* height) / 2;

return area;

}

var baseLength = 8; // Replace with the length of the base of the triangle

var triangleHeight = 6; // Replace with the height of the triangle

var triangleArea = calculateIsoscelesTriangleArea(baseLength, triangleHeight);

console.log("Area of the isosceles triangle: " + triangleArea);

Volume Of Sphere

function calculateSphereVolume(radius) {

var volume = (4/3) \* Math.PI \* Math.pow(radius, 3);

return volume;

}

var sphereRadius = 5; // Replace with the radius of the sphere

var sphereVolume = calculateSphereVolume(sphereRadius);

console.log("Volume of the sphere: " + sphereVolume)

Volume Of Prism

function calculatePrismVolume(baseArea, height) {

var volume = baseArea \* height;

return volume;

}

var baseArea = 24; // Replace with the area of the base (e.g., for a rectangle or triangle)

var prismHeight = 10; // Replace with the height of the prism

var prismVolume = calculatePrismVolume(baseArea, prismHeight);

console.log("Volume of the prism: " + prismVolume);

Find area of a triangle.

function calculateTriangleArea(base, height) {

var area = (base \* height) / 2;

return area;

}

var triangleBase = 8; // Replace with the length of the base of the triangle

var triangleHeight = 6; // Replace with the height of the triangle

var triangleArea = calculateTriangleArea(triangleBase, triangleHeight);

console.log("Area of the triangle: " + triangleArea);

Give the Actual cost and Sold cost, Calculate Discount Of Product

function calculateDiscount(actualCost, soldCost) {

var discount = actualCost - soldCost;

return discount;

}

var actualCost = 50; // Replace with the actual cost of the product

var soldCost = 40; // Replace with the sold cost of the product

var productDiscount = calculateDiscount(actualCost, soldCost);

console.log("Discount of the product: $" + productDiscount);

Given their radius of a circle and find its diameter, circumference and area.

function calculateCircleProperties(radius) {

var diameter = 2 \* radius;

var circumference = 2 \* Math.PI \* radius;

var area = Math.PI \* Math.pow(radius, 2);

return {

diameter: diameter,

circumference: circumference,

area: area

};

}

var circleRadius = 5; // Replace with the radius of the circle

var circleProperties = calculateCircleProperties(circleRadius);

console.log("Diameter: " + circleProperties.diameter);

console.log("Circumference: " + circleProperties.circumference);

console.log("Area: " + circleProperties.area);

Given two numbers and perform all arithmetic operations.

var num1 = 10;

var num2 = 5;

// Addition

var additionResult = num1 + num2;

console.log("Addition:", additionResult);

// Subtraction

var subtractionResult = num1 - num2;

console.log("Subtraction:", subtractionResult);

// Multiplication

var multiplicationResult = num1 \* num2;

console.log("Multiplication:", multiplicationResult);

// Division

var divisionResult = num1 / num2;

console.log("Division:", divisionResult);

// Modulus (remainder)

var modulusResult = num1 % num2;

console.log("Modulus:", modulusResult);

Display the asterisk pattern as shown below(No loop needed):  
\*\*\*\*\*  
\*\*\*\*\*  
\*\*\*\*\*  
\*\*\*\*\*  
\*\*\*\*\*

var pattern =

"\*\*\*\*\*\n" +

"\*\*\*\*\*\n" +

"\*\*\*\*\*\n" +

"\*\*\*\*\*\n" +

"\*\*\*\*\*";

console.log(pattern);

Calculate electricity bill?  
For example, a consumer consumes 100 watts per hour daily for one month. Calculate the total energy bill of that consumer if per unit rate is 10?

// Constants

const consumptionPerHourInWatts = 100; // Consumption per hour in watts

const hoursPerDay = 24; // Hours per day

const daysPerMonth = 30; // Days per month

const unitRate = 10; // Rate per unit in currency (e.g., dollars)

// Calculate total energy consumption in kilowatt-hours (kWh)

const totalEnergyConsumptionInKWh =

(consumptionPerHourInWatts \* hoursPerDay \* daysPerMonth) / 1000; // Convert watts to kilowatts (kW)

// Calculate the total cost of the electricity bill

const totalCost = totalEnergyConsumptionInKWh \* unitRate;

console.log("Total energy consumption (kWh): " + totalEnergyConsumptionInKWh);

console.log("Total cost of the electricity bill: $" + totalCost);

Program To Calculate CGPA

// Define an array of objects to store course information (grade points and credit hours)

var courses = [ { gradePoints: 4.0, creditHours: 3 }, { gradePoints: 3.7, creditHours: 4 }, { gradePoints: 3.3, creditHours: 3 }, { gradePoints: 3.0, creditHours: 2 },

// Add more courses as needed ];

// Function to calculate CGPA

function calculateCGPA(courses) { var totalGradePoints = 0; var totalCreditHours = 0;

// Calculate the sum of (Grade Points \* Credit Hours) and the total Credit Hours

for (var i = 0; i < courses.length; i++)

{ totalGradePoints += courses[i].gradePoints \* courses[i].creditHours; totalCreditHours += courses[i].creditHours; }

// Calculate CGPA

var cgpa = totalGradePoints / totalCreditHours; return cgpa; }

// Calculate CGPA and display it

var cgpa = calculateCGPA(courses); console.log("CGPA: " + cgpa.toFixed(2));

// Display CGPA rounded to two decimal places