JAVASCRIPT | DAY 2 | CLASSWORK

Basic Exercises

Ex 1 | Temperature v1.0

Create a program that generates a random temperature each time it runs, within the range of -5°C to 25°C. Your task is to make the program sort this temperature into one of two categories: either 'cold' or 'moderate'.
Here's how it should work:

- If the temperature is between -5°C and 10°C, the program should output: "The weather is cold."
- If the temperature is above 10°C, the program should output: "The weather is moderate."

Hint: To get that random temperature, use Math.random(). This sneaky little function will give you a random decimal between 0 and just under 1,so any value between these two numbers (for example 0,315 , 0,91239 0,1). Want to stretch those numbers to fit your range? Multiply it by the scale of your temperature range. For instance, multiplying by 10 gets you a number between 0 and 10. Get creative with it to fit your -5°C to 25°C range!

Ex 2 | Random Food

Create an array named favoriteFoods which contains the food items like "pizza", “hamburger”, "ice cream", “chocolate”. Next, write a function named randomFood. The function should be able to choose and return randomly a favorite food in your favoriteFoods array.

Ex 3 | Crystal Gazer

Write a function named crystalGazer() that takes four arguments: number of children, partner's name, geographic location, and job title. Once the user passes the four arguments the program should output the following message on screen:

"You will be a [job_title] in [location], and married to [partner's_name] with [number_of_children] kids."

Ex 4 | Age Calculator

Write a function called ageCalculator() that takes two parameters: birth year and current year. Using these arguments, your function should calculate and return two potential ages. This is because without knowing the exact birth month, there are two possible ages a person could be during a given year.

The function's output should output:

"You are either [Age Option 1] or [Age Option 2]."

For instance, if someone was born in 1993 and the current year is 2024, the function should output: "You are either 30 or 31."

Ex 5 | Age Calculator-improved

Let's level up your previous exercise with a bit of automation! The goal remains the same - to create a function called ageCalculator() - but with a twist. This time, instead of passing two parameters, you'll only pass one: the birth year. The function should automatically fetch the current year using JavaScript's built-in Date methods. Remember, you still need to provide two possible ages due to the unknown birth month.

You should get the following results:

You are either 30 or 31

Ex 6 | Degree-Radian Conversion

Create a JavaScript function that converts degrees to radians. The function accepts one parameter, the degrees, and outputs the radians based on them. The formula for converting degrees to radians is: "degrees * (pi/180)"

For example, if you input 90 degrees into your function, it should return the result as approximately 1.57079 radians.

Ex 7 | Area and Volume of a box

Create a function that will calculate both the area and the volume of a box. This function should accept three parameters: width, height, and depth of the box. Using these, it should compute:

- The area of the box using the formula: area = width x height
- The volume of the box using the formula: volume = width x height x depth

The function should then return both the area and volume in a readable format.

For instance, if you input 2 for width, 7 for height, and 5 for depth, the function should return

The area of the box is: 14

The volume of the box is: 70

Intermediate Exercises

Ex 1 | First Letter Capitalizer

Write a JavaScript function to capitalize only the first letter of any given string while leaving the rest of the string unchanged. This function will take just one parameter: a string.

For example, if the input is 'i am a web developer', the function should transform and return the string as 'I am a web developer'.

Hint: To accomplish this, you might want to explore the use of the JavaScript String charAt() method, along with other string manipulation techniques.

Ex 2 | Average Grade

Create a function that will accept 3 parameters, representing grades in Math, Physics, and English. Your task is to ensure that these parameters are numbers, then perform the calculations to find the sum and average of these grades. Finally, the function should display these values.

For example, if the input grades are 3 (Math), 4 (Physics), and 5 (English), the function should output:

Sum: 12

Average: 4

Advanced Exercises

Ex 1 | Time Convert

Create a JavaScript function that converts a given number of minutes into hours and minutes. The function should accept one parameter only – the total number of minutes.

The goal is for the function to calculate and return a statement indicating how many hours and minutes those total minutes equate to.

For instance, if the function is called with 200 minutes as the input, it should return:
"200 minutes = 3 hour(s) and 20 minute(s)."