



# JavaScript Practice Exercises

# Master all the key concepts.

## Overview.

**Do these code challenges individually.** These are easy step-by-step exercises that will help you check your understanding of all the JS basics.

You can write the code and run it locally on your VS code editor and then push the code to GitHub. Make sure you add comments to your code such that it's easy to read and understand.

## Please Take Note:

- **DO NOT Copy solutions online or from anywhere.**

Try to do this yourself

Prerequisites.

- You should **create a GitHub repo** for these challenges.  
Then create separate files for each solution of a code challenge.

## Submission deadline:

4th January 2025

## # Code Challenges (Set 1)

**Focus:** Data Types, Variables & Arithmetic Operators

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1. Write a program that calculates the area of a rectangle given **length** and **width**.
2. Write a program that multiplies a variable by 5 using the **\*=** operator.
3. Write a program that checks if two variables have the same value and type.
4. Create a program that compares if **10** is greater than or equal to **5**.
5. Concatenate the strings "**Hello**" and "**World**" with a space between them.
6. Extract the word "**fun**" from the string "**Coding is fun**" using the **slice()** method.
7. Write a program that checks if a number is positive, negative, or zero.
8. Use a ternary operator to check if a number is odd or even.

## # Code Challenges (Set 2)

**Focus:** Functions & Loops

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1. Write a function `greet` that takes a name as an argument and returns "`Hello, [name]!`"
2. Create a function `add` that takes two numbers and returns their sum.
3. Write a function `isEven` that checks if a given number is even.
4. Use a `for` loop to print numbers from 1 to 10.
5. Write a `while` loop to print the first 5 multiples of 3.
6. Use a for loop to calculate the factorial of a number n

## # Code Challenges (Set 3)

**Focus:** Combined Concepts

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1. Write a program that counts how many times the letter "a" appears in the string "`JavaScript is amazing!`".
2. Create a function `sumArray` that takes an array of numbers and returns their sum.
3. Write a loop to log all key-value pairs of the object `{a: 1, b: 2, c: 3}`
4. Check if the number 5 exists in the array `[1, 2, 3, 4, 5]` using the `includes()` method.
5. Write a function `findMax` that returns the largest number from an array of numbers.
6. Create a program that combines two arrays `[1, 2]` and `[3, 4]` into one

using the `concat()` method.

7. Write a function that reverses a string, e.g., "hello" becomes "olleh".
8. Write a function that takes a number and an array, checks if the number exists in the array, and returns a message "Found" or "Not Found".
9. Create a function that accepts a string and counts how many vowels (`a`, `e`, `i`, `o`, `u`) it contains.
10. Write a program to check if two arrays are equal (contain the same elements in the same order). Develop a function `findMinMax` that takes an array of numbers and returns an object with the smallest and largest numbers.

**Example output:** `{ min: 1, max: 10 }`.

11. Write a program that filters out all numbers greater than 10 from an array and returns the result.
12. Build a function that takes a string and checks if it's a palindrome (the same forwards and backward). Write a program that takes an object and swaps its keys and values.

**Example input:** `{ a: 1, b: 2 }`. Output: `{ 1: "a", 2: "b" }`.

13. Create a function `multiplyNumbers` that takes an array of numbers and multiplies all the numbers together. Write a program that calculates the frequency of each character in a string and returns the result as an object.

**Example input:** "hello". Output: `{ h: 1, e: 1, l: 2, o: 1 }`.

14. Create a function that removes duplicate values from an array.

**Example input:** `[1, 2, 2, 3]`. Output: `[1, 2, 3]`.

15. Write a program that takes a string and capitalizes the first letter of each word.

**Example input:** "hello world". Output: "Hello World".