

## Assignment 4:

This assignment is based on the concepts of Functions, Conditionals, Loops, Array and its methods.

### How to solve Assignment:

Create a single java script file with any name and this file must contain one function for each question. For example if there are 10 questions then your java script file must contain 10 function with name Answer1(), Answer2(), Answer3() and so on. And inside the respective functions you must write the solution. For any query please contact me.

#### Q1. Palindrome Check for Strings

- **Question:** Write a function that checks if a given string is a palindrome (a word that reads the same backward as forward). The function should return true if string is palindrome otherwise it should return false.
- **Example Input:** "madam"
- **Expected Output:** true (because "madam" is a palindrome)

#### Q2. Second largest element in the array

- **Question:** Write a function that takes an array of numbers and returns the second largest element in the array. If there is no second largest then return the first largest number.
- **Example Input:** [1, 2, 3, 4]
- **Expected Output:** 3

#### Q3. Sum of digits of a given number

- **Question:** Write a function that takes a number as an argument and returns the sum of all the digits of the number ( Hint : use arithmetic operators in combination with loops ).
- **Example Input:** 970
- **Expected Output:** 16 ( As sum of digits of given number  $9 + 7 + 0 = 16$  )

#### Q4. Count Vowels in a String

- **Question:** Write a function that counts the number of vowels in a given string.
- **Example Input:** "javascript"
- **Expected Output:** 3

#### **Q5. Square of Numbers Using map()**

- **Question:** Write a function that takes an array of numbers and returns a new array where each number is squared.
- **Example Input:** [1, 2, 3, 4]
- **Expected Output:** [1, 4, 9, 16]

#### **Q6. Filter Strings by Length Using filter()**

- **Question:** Write a function that takes an array of strings and returns a new array containing only the strings with more than 3 characters.
- **Example Input:** ["cat", "elephant", "dog", "fish"]
- **Expected Output:** ["elephant", "fish"]

#### **Q7. Find the Longest String Using reduce()**

- **Question:** Write a function that takes an array of strings and returns the longest string using reduce().
- **Example Input:** ["apple", "banana", "watermelon", "grape"]
- **Expected Output:** "watermelon"