Logical program questions.

**Set 1:**

1. Write a JavaScript program to calculate the factorial of a given non-negative integer.

Sample Input: (5);

Sample Output: 120

1. Write a JavaScript function to find the maximum element in an array.

Sample Input: ([5, 2, 9, 1, 7]);

Sample output: 9

1. Write a JavaScript program to remove a specific element from an array.

Sample Input: ([1, 2, 3, 4, 5], 3);

Sample Output: [1, 2, 4, 5]

1. Write a JavaScript program to find the second smallest element in an array.

Sample Input: ([5, 2, 9, 1, 7]);

Sample Output: 2

1. Write a JavaScript function to check if two arrays are equal (contain the same elements in the same order).

Sample Input: ([1, 2, 3], [1, 2, 3]);

Sample output: true

1. Write a JavaScript program to find the maximum sum subarray within a given array of numbers.

Sample Input: ([-2, 1, -3, 4, -1, 2, 1, -5, 4]);

Sample Ouput: 6

1. Write a JavaScript function to calculate the power of a number recursively.

Sample Input: (2, 4);

Sample Output: 16

1. Write a JavaScript function to sort an array of numbers in ascending order.

Sample Input:5,2,9,1,8

Sample Ouput:1,2,5,8,9

1. Write a JavaScript function to find the number of occurrences of a substring in a given string.

Sample Input: ("Hello, hello, hello", "hello");

Sample Output: 3

1. Write a JavaScript function to find the intersection of two arrays without duplicates.

Sample Input: ([1, 2, 2, 3], [2, 3, 4]);

Sample Output: [2, 3]

**Set 2:**

1. Write a JavaScript program to find the length of a given string.

Sample Input: Hello;

Sample Output: 5

1. Write a JavaScript function to concatenate two arrays.

Sample Input: ([1, 2, 3], [4, 5, 6]);

Sample Output: [1, 2, 3, 4, 5, 6]

1. Write a JavaScript program to swap the values of two variables.

Sample Input: x = 5, y = 10;

Sample Output: [10, 5]

1. Write a JavaScript program to calculate the average of an array of numbers.

Sample Input: ([1, 2, 3, 4, 5]);

Sample Ouput: 3

1. Write a JavaScript function to find the largest and smallest elements in an array.

Sample Input: ([1, 2, 3, 4, 5]);

Sample Output: [1, 5]

1. Write a JavaScript function to find the index of the first occurrence of a given element in an array.

Sample Input: ([1, 2, 3, 4, 5], 3);

Sample Output: 2

1. Write a JavaScript function to check if a given string is a valid email address.

Sample Input: ("test@example.com");

Sample Output: true

1. Write a JavaScript program to count the number of occurrences of each element in an array.

Sample Input: ([1, 2, 2, 3, 3, 3]);

Sample Output: {1: 1, 2: 2, 3: 3}

1. Write a JavaScript function to implement a binary search algorithm on a sorted array.

Sample Input: ([1, 2, 3, 4, 5], 4);

Sample output: 3

1. Write a JavaScript program to find the intersection of two arrays (common elements).

Sample Input: ([1, 2, 3], [2, 3, 4]);

Sample Output: [2, 3]

**Set 3:**

1. Write a JavaScript program to check if a given number is prime.

Sample Input: (7);

Sample Output: true

1. Write a JavaScript function to calculate the factorial of a given non-negative integer using recursion.

Sample Input: (5);

Sample Output: 120

1. Write a JavaScript program to reverse the order of words in a given sentence.

Sample Input:("Hello World");

Sample Output: "World Hello"

1. Write a JavaScript function to find the sum of all numbers in an array.

Sample Input: ([1, 2, 3, 4, 5]);

Sample Output: 15

1. Write a JavaScript program to find the largest sum of any two numbers in an array.

Sample Input: ([1, 2, 3, 4, 5]);

Sample Output: 9

1. Write a JavaScript function to check if a given string is a valid URL.

Sample Input: ("https://www.example.com");

Sample Output:true

1. Write a JavaScript program to sort an array of objects based on a specific property value.

Sample Input: const data = [

{ name: "John", age: 30 },

{ name: "Alice", age: 25 },

{ name: "Bob", age: 35 }

];

sortObjectsByProperty(data, "age");

Sample Output: [

{ name: "Alice", age: 25 },

{ name: "John", age: 30 },

{ name: "Bob", age: 35 }

]

1. Write a JavaScript function to calculate the sum of digits in a given number until it becomes a single-digit number.

Sample Input: (12345);

Sample Output: 6

1. Write a JavaScript program to implement a stack data structure using an array.

Sample Input: const stack = new Stack();

stack.push(1);

stack.push(2);

stack.pop();

Sample Output: [1]

1. Write a JavaScript function to find the median of an unsorted array of numbers.

Sample Input: ([5, 2, 9, 1, 7]);

Sample Output: 5

**Set 4:**

1. Write a JavaScript program to check if a given number is positive, negative, or zero.

Sample Input:5

Sample Output:Positive.

1. Write a JavaScript program to calculate the sum of two numbers entered by the user.

Sample Input:5,10

Sample output:15

1. Write a JavaScript function to check if a given number is even or odd.

Sample Input:10

Sample output:even

1. Write a JavaScript program to find the largest number among three numbers entered by the user.

Sample Input:5,10,3

Sample output:10

1. Write a JavaScript program to find the sum of all multiples of 3 or 5 below a given number.

Sample Input:10

Sample output:23

1. Write a JavaScript function to check if a given string is a valid URL.

Sample Input: ("https://www.example.com");

Sample Output:true

1. Write a JavaScript program to find the longest word in a sentence.

Sample Input: The quick brown fox jumps over the lazy dog.

Sample Output:quick.

1. Write a JavaScript function to reverse the order of words in a sentence while maintaining the order of punctuation marks.

Sample Input: Hello, world!

Sample Ouput: world, Hello!

1. Write a JavaScript program to find the number of possible combinations given a set of numbers and a target sum.

Sample Input:( 2, 4, 6, 8], 10);

Sample Ouput: 3

1. Write a JavaScript program to implement a queue data structure using an array.

Sample Input: const queue = new Queue();

queue.enqueue(1);

queue.enqueue(2);

queue.dequeue();

Sample Output:[2]