**ASSIGNMENT-3**

1. Write an arrow function that will check if a given number is palindrome or not. If palindrome the function will return true and false otherwise. Call the function and display messages accordingly.

Ans: <!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

</head>

<body>

    <input type="number" id="no" placeholder="Enter any no">

    <button type="submit" onclick="palin()" >Submit</button>

</body>

<script>

    function palin(){

        let no=document.getElementById("no").value;

        let n=no.length;

        for(let i=0;i<n/2;i++){

            if(no[i]!==no[n-i-1]){

                console.log("Not a pallindrome");

                return;

            }

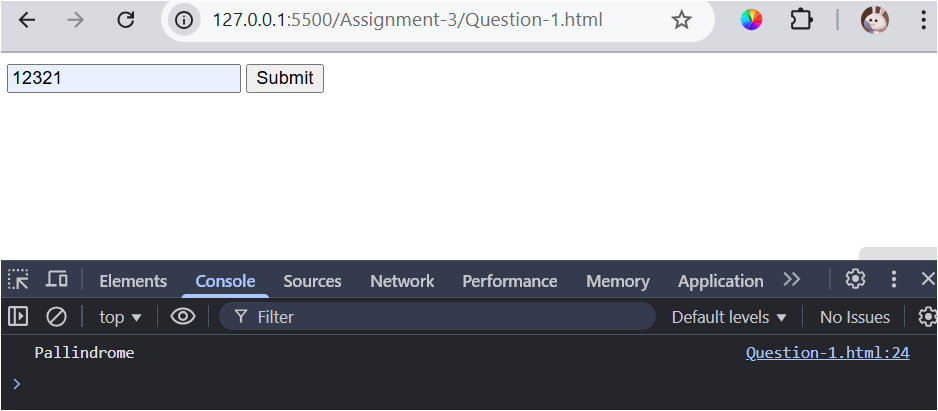
        }

        console.log("Pallindrome");

    }

</script>

</html>



2.Write a lambda expression to find xy

Ans: <!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Document</title>

</head>

<body>

</body>

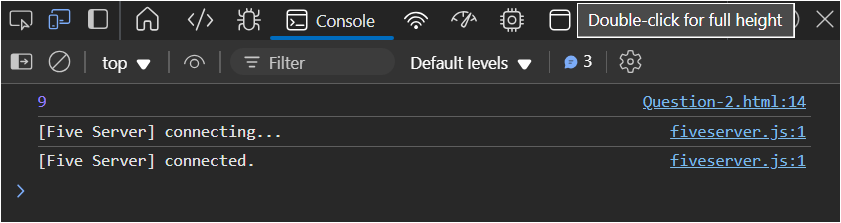
<script>

let xpowy=(x,y)=>(x\*\*y)

console.log(xpowy(3,2));

</script>

</html>



3. Create a calculateFactorial function that takes a number and a callback function. The calculateFactorial calculates the factorial and the callback function should display the factorial value.

Ans: <!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

</head>

<body>

</body>

<script>

    function calcFact(n,display){

        let f=1;

        for(let i=1;i<=n;i++){

            f\*=i;

        }

        display(f);

    }

    function display(fact){

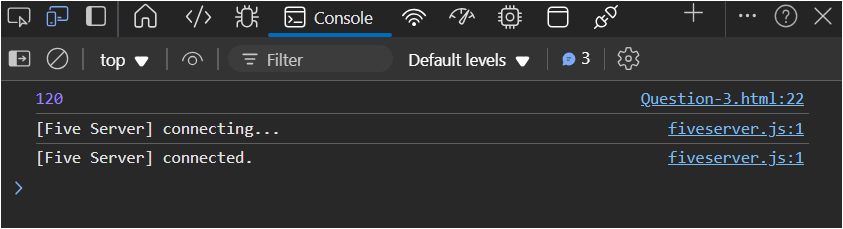
        console.log(fact);

    }

    calcFact(5,display);

</script>

</html>



4. Answer the following questions using setTimeout, setInterval and clearInterval.

a. Create a function delayedGreeting that accepts a name and a delay time (in milliseconds). After the specified delay, it should log a greeting message (e.g., "Hello, [name]!").

b. Display a 10 second count down timer in a webpage

Ans: <!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

</head>

<body>

    <p id="count"></p>

</body>

<script>

    function delayedGreeting(name,time){

        setTimeout(function(){

            console.log(`Hello ${name}`)},parseInt(time))

    }

    delayedGreeting("Tanuja",2000)

    let x=10;

    let interval=setInterval(function(){

        let count=document.getElementById("count")

        count.innerText=x;

        x--;

        if(x==0){

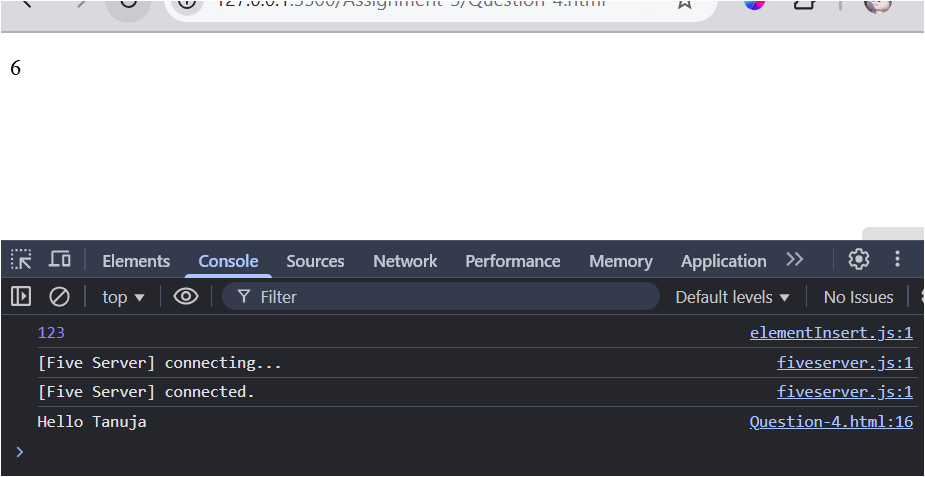
            clearInterval(interval)

        }

    },1000)

</script>

</html>



5. Consider an array of car brands: carBrands = [ "Toyota", "Ford", "BMW", "Mercedes-Benz", "Honda", "Audi", "Tata", "Tesla", "Mahindra", "Volkswagen" ];

a. Create a function which will take an array and display the array elements. Use this to display the array after each following operation.

Ans: carBrands=["Toyota","Ford","BMW","Mercedes-Benz","Honda","Audi","Tata","Tesla","Mahindra","Volkswagen"];

    //displaying array

    function display(cars){

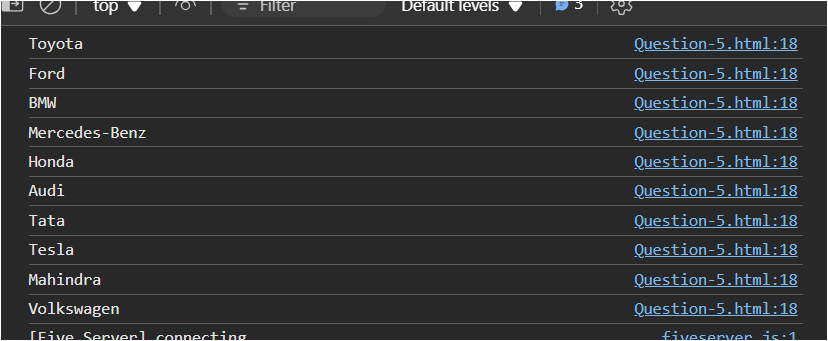
        cars.forEach(car => {

            console.log(car);

        });

    }

    display(carBrands)

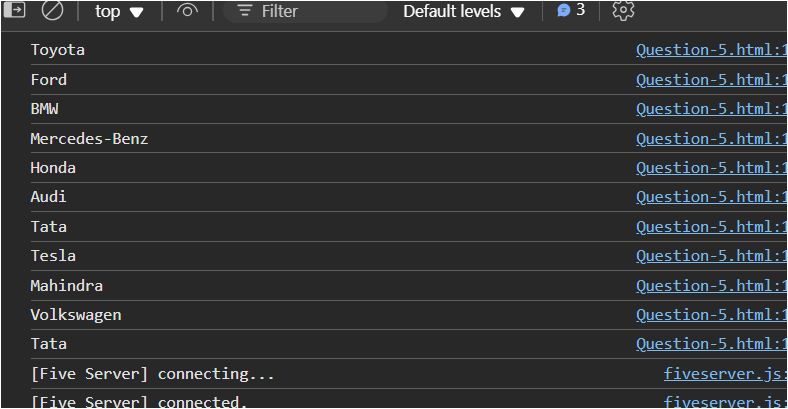


b. Add one more car brand to the array

Ans: //adding car to array

    carBrands.push("Tata")

    display(carBrands)

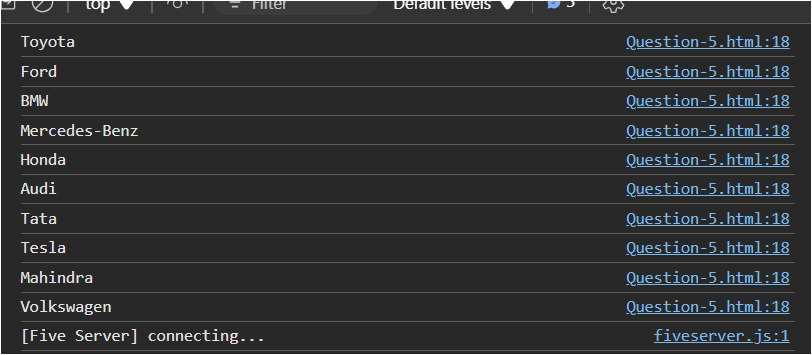


c. Remove the last car brand from the array.

Ans:  //removing last car

    carBrands.pop()

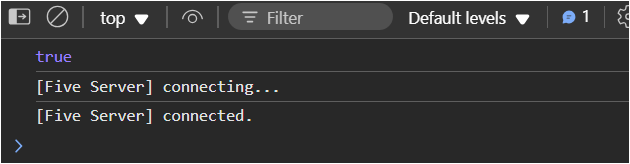
    display(carBrands)



d. Check if the array contains “Tata”.

Ans://if array has Tata

    console.log(carBrands.includes("Tata"));

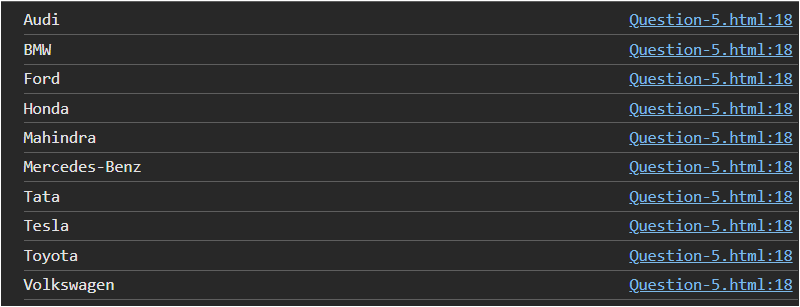


e. Sort the cars in alphabetical order.

Ans: //sorting cars

    carBrands.sort()

    display(carBrands)

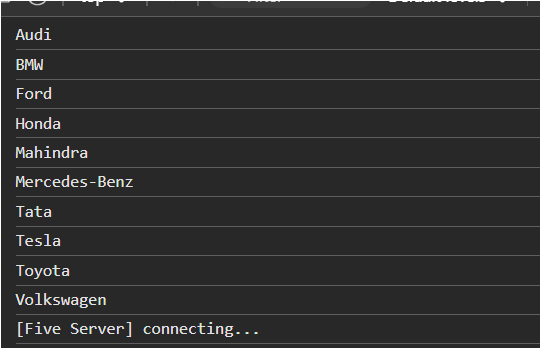


f. Make shallow copy of the array.

Ans:  //copy of array

    carsCopy=[...carBrands]

    display(carsCopy)

6.Construct an array of 10 numbers and perform the following operations using higher-order array methods –

a. Display the array elements using forEach

Ans: arr=[1,2,3,4,5,6,7,8,9,10]

    //Displaying array elements

    function display(arr){

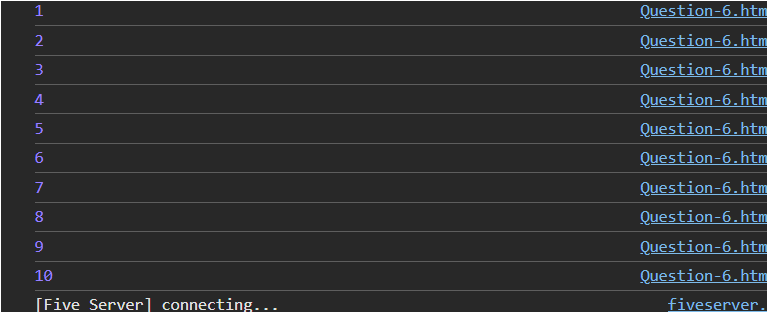
        arr.forEach(ele => {

            console.log(ele);

        });

    }

    display(arr);



b. Produce a new array by squaring each number of the given array using map

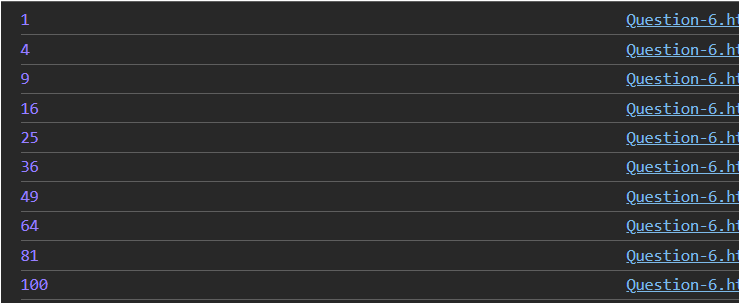
Ans: //squaring

    let newArr=arr.map((ele) => {

        return ele\*ele

    })

    display(newArr);



c. Produce an array with all the even numbers present on the original array using filter

Ans: //array with all even numbers

    let evenArr=arr.filter(ele =>ele%2==0)

    display(evenArr)



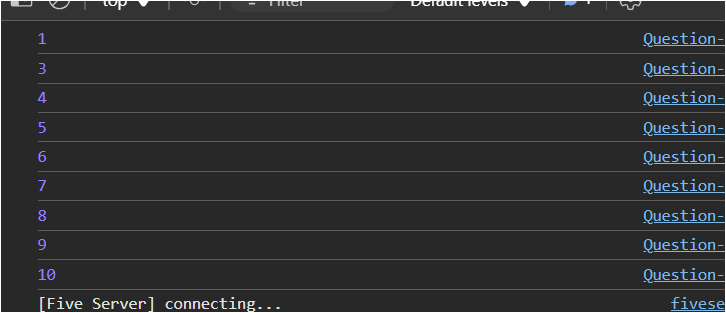
d. Remove any number from the array using filter

//Removing any ele from array

    let ele\_removed=2

    arr=arr.filter(ele=>ele!=ele\_removed)

    display(arr)

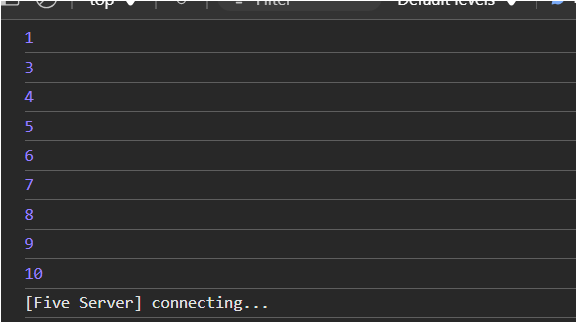


e. Sort the array in both ascending and descending order using sort and display

Ans: //sorting in ascending order

    arr.sort((a,b)=>a-b)

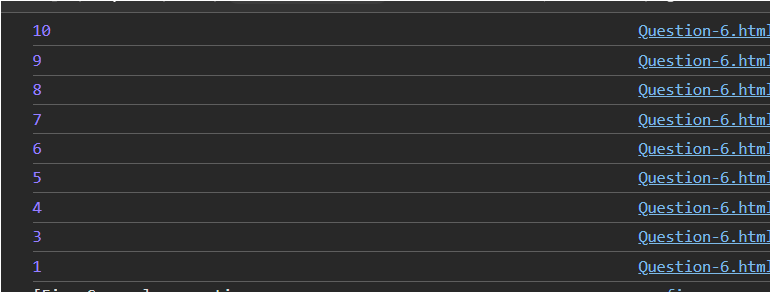
    display(arr)



//sorting in descending order

    arr.sort((a,b)=>b-a)

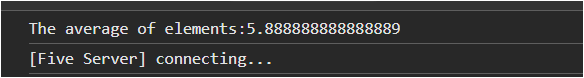
    display(arr)



f. Find the average of the array elements

Ans: let avg=arr.reduce((sum,ele)=>sum+ele,0)/arr.length

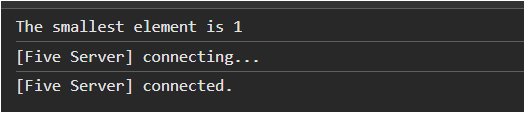
    console.log(`The average of elements:${avg}`);



g. Find the smallest number amongst the array elements

Ans: let min\_ele=Math.min(...arr)

    console.log(`The smallest element is ${min\_ele}`);



7. Given an array of product objects, where each object contains the name and price of a product. Answer the following questions using higher order array methods.

a. Use forEach loop, object de-structuring, and string literals to display the details in the given format – “A laptop costs Rs 50000 and has a rating of 4.7”.

Ans: products = [

    { name: "Smartphone", price: 15000, rating: 4.5, category: ["Electronics", "Mobile", "Gadget"] },

    { name: "Laptop", price: 50000, rating: 4.7, category: ["Electronics", "Computer", "Gadget"] },

    { name: "Headphones", price: 2000, rating: 4.0, category: ["Electronics", "Accessories"] },

    { name: "Shoes", price: 3000, rating: 4.3, category: ["Fashion", "Footwear"] },

    { name: "Watch", price: 3500, rating: 4.2, category: ["Fashion", "Accessories"] },

    { name: "Washing Machine", price: 25000, rating: 4.6, category: ["Home Appliances", "Electronics"] },

    { name: "Refrigerator", price: 35000, rating: 4.4, category: ["Home Appliances", "Electronics"] },

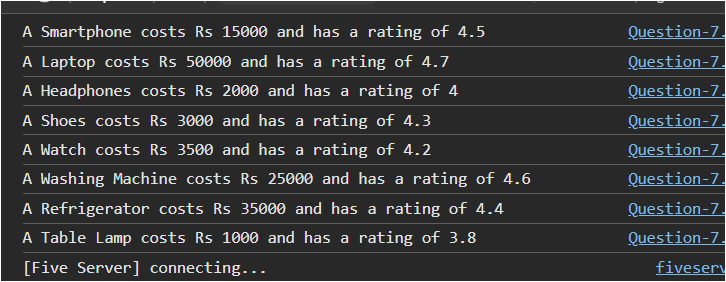
    { name: "Table Lamp", price: 1000, rating: 3.8, category: ["Home Decor", "Furniture"] },

    ];

    //Displaying details

    products.forEach(ele => {

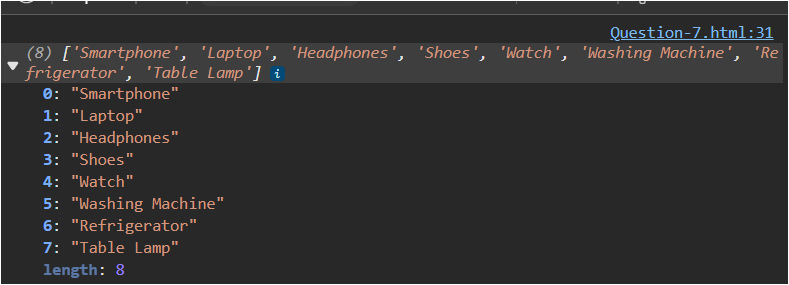
        console.log(`A ${ele.name} costs Rs ${ele.price} and has a rating of ${ele.rating}`);});



b. Create a List of Product Names

Ans: let names=products.map(ele=>ele.name)

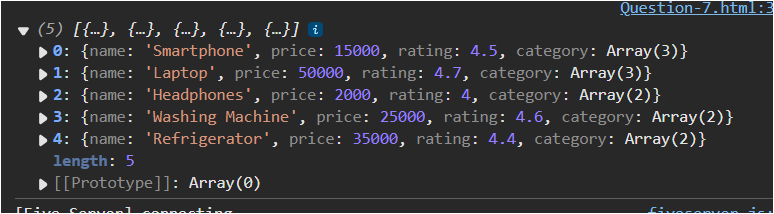
    console.log(names);



c. Create an array of all the Electronics products and display the array

Ans: let electronics=products.filter(ele=>ele.category.includes('Electronics'))

    console.log(electronics);

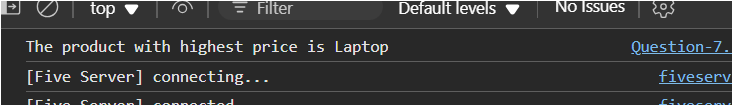


d. Find the Product with the Highest Price

Ans: let price=Math.max(...products.map(ele=>ele.price))

    let prod=products.filter(ele=>ele.price===price)[0].name

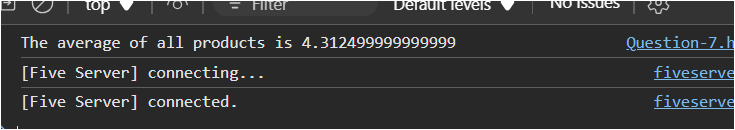
    console.log(`The product with hishest price is ${prod}`);



e. Find the average rating of all the products

Ans: let avg=products.reduce((sum,ele)=>sum+ele.rating,0)/products.length

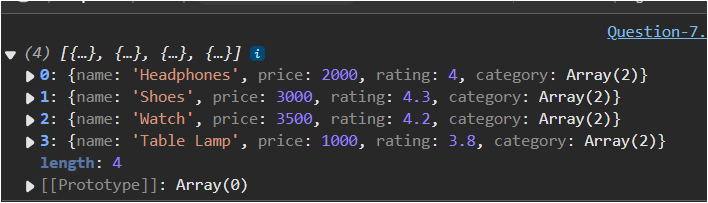
    console.log(`The average of all products is ${avg}`);



f. Get Products That Are Priced Below 10000

Ans: let prods=products.filter(ele=>ele.price<10000)

    console.log(prods);



8.Write a Person class with the following properties: firstName, lastName, and age. Include a method getFullName() that returns the full name of the person. Use constructor to initialize the data member and another function getDetails() to display all the details.

Ans: class Person{

        constructor(firstName,lastName,age){

            this.firstName=firstName;

            this.lastName=lastName;

            this.age=age;

        }

        getFullName() {

            return `${this.firstName} ${this.lastName}`

        }

        getDetails(){

            return `Name:${this.getFullName()} Age:${this.age}`

        }

    }

    let p1=new Person("Tanuja","Gajavelli",21);

    let fullName=p1.getFullName();

    console.log(fullName);

    let details=p1.getDetails();

    console.log(details);

