Quiz 1 JavaScript Basics

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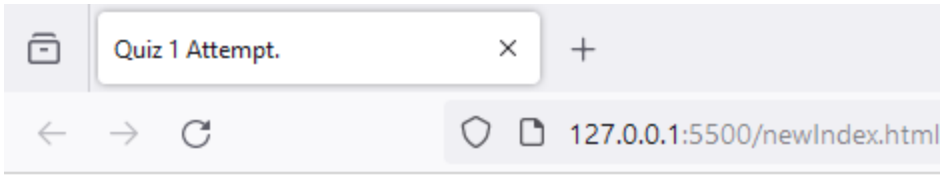
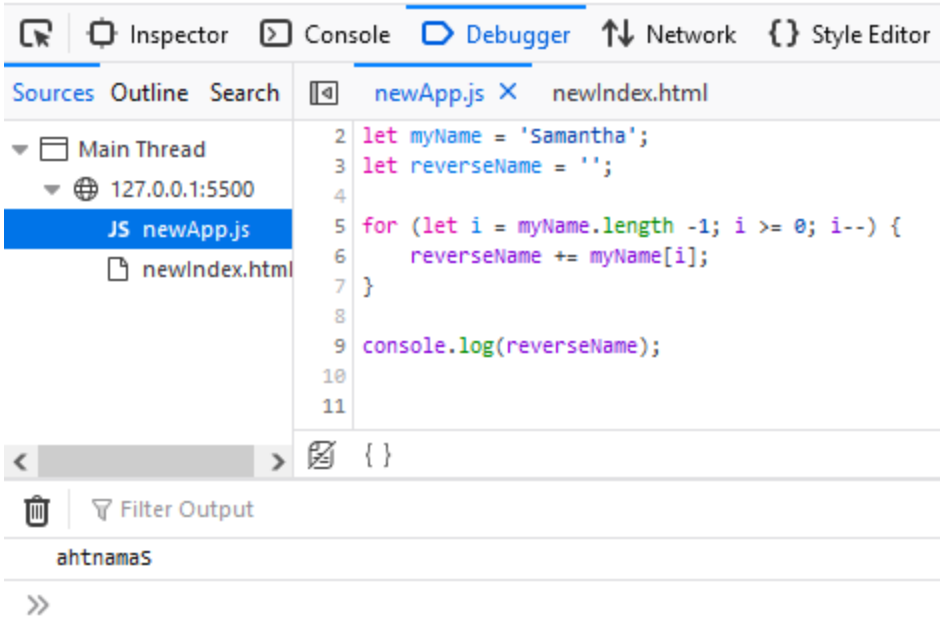
- **Question 1: Reverse a string without using the built-in reverse() method.**

```
// Question 1
let myName = 'Samantha';
let reverseName = '';

for (let i = myName.length -1; i >= 0; i--) {
    reverseName += myName[i];
}

console.log(reverseName);
```

- Output:



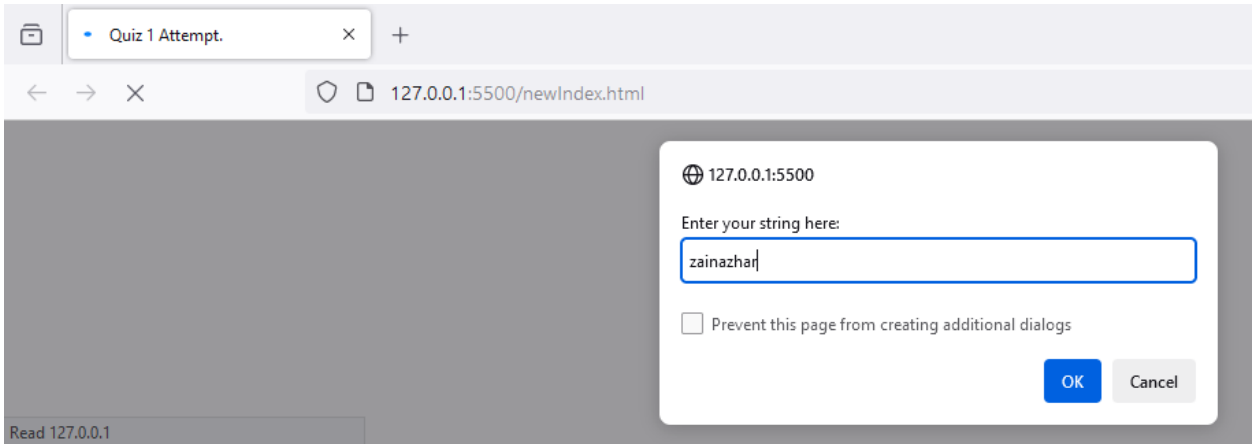


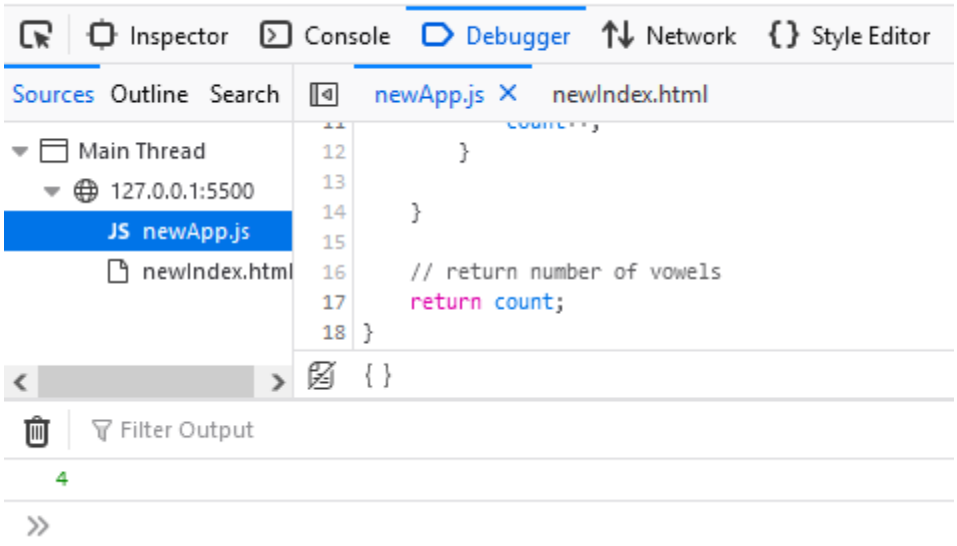
- **<u>Question 2</u>: Count the number of vowels in a given string.**

```
// Question 2
// creating vowels
const vowels = ['a', 'e', 'i', 'o', 'u'];

function countVowel(str) {
    // Setting the initial count of counter to zero
    let count = 0;
```

```
    for (let letter of str.toLowerCase()) {
        if (vowels.includes(letter)) {
            count++;
        }

    }

    // return number of vowels
    return count;
}

// take input
const userInputString = prompt('Enter your string here: ');
const result = countVowel(userInputString);

console.log(result);
```

- Output:

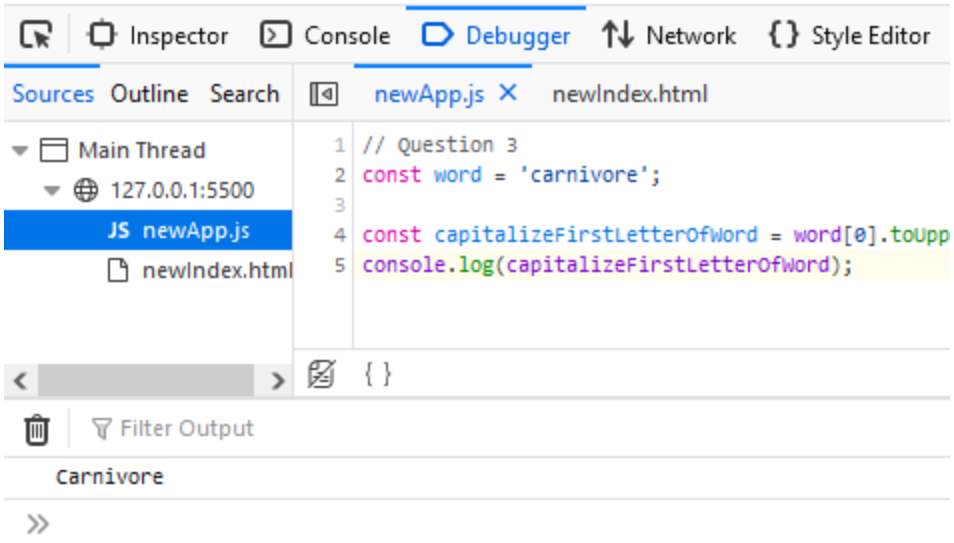




- **<u>Question 3</u>: Convert the first letter of each word in a sentence to uppercase.**

```
// Question 3
const word = 'carnivore';

const capitalizeFirstLetterOfWord = word[0].toUpperCase() +
word.slice(1);

console.log(capitalizeFirstLetterOfWord);
```

- Output:

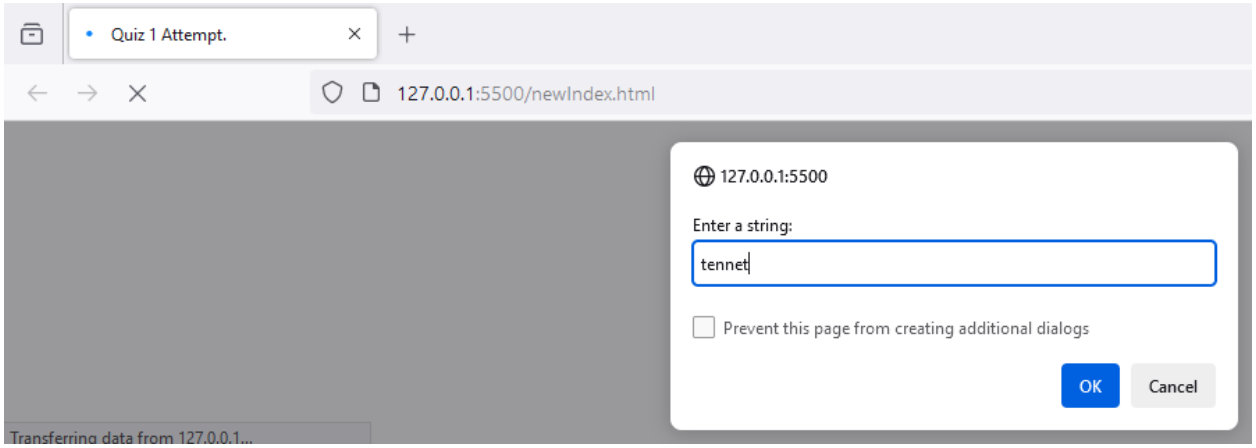


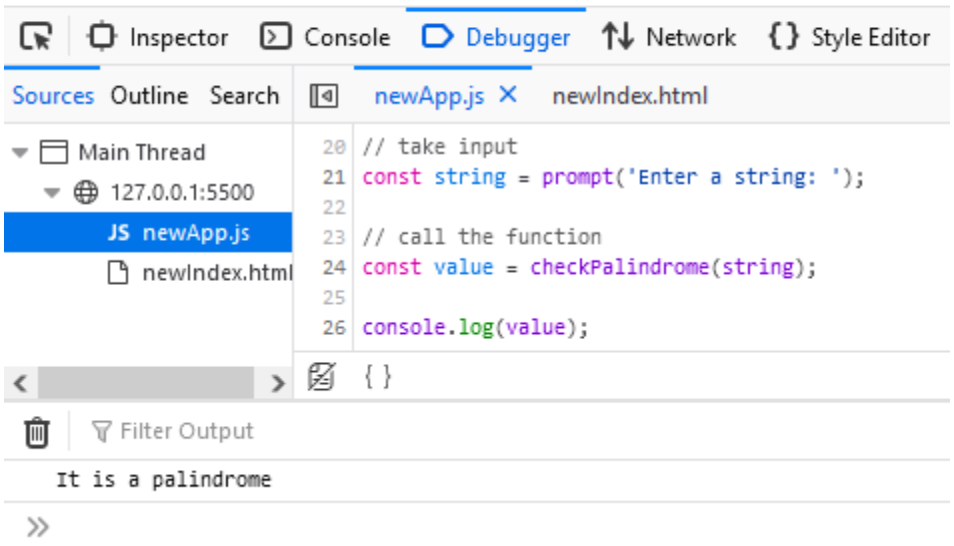
- **<u>Question 4</u>: Check if a string is a palindrome.**

```
// Question 4
// program to check if the string is palindrome or not

function checkPalindrome(string) {

    // find the length of a string
    const len = string.length;

    // loop through half of the string
    for (let i = 0; i < len / 2; i++) {

        // check if first and last string are same
        if (string[i] !== string[len - 1 - i]) {
            return 'It is not a palindrome';
        }
    }
    return 'It is a palindrome';
}
```

```
// take input
const string = prompt('Enter a string: ');

// call the function
const value = checkPalindrome(string);

console.log(value);
```

- Output:



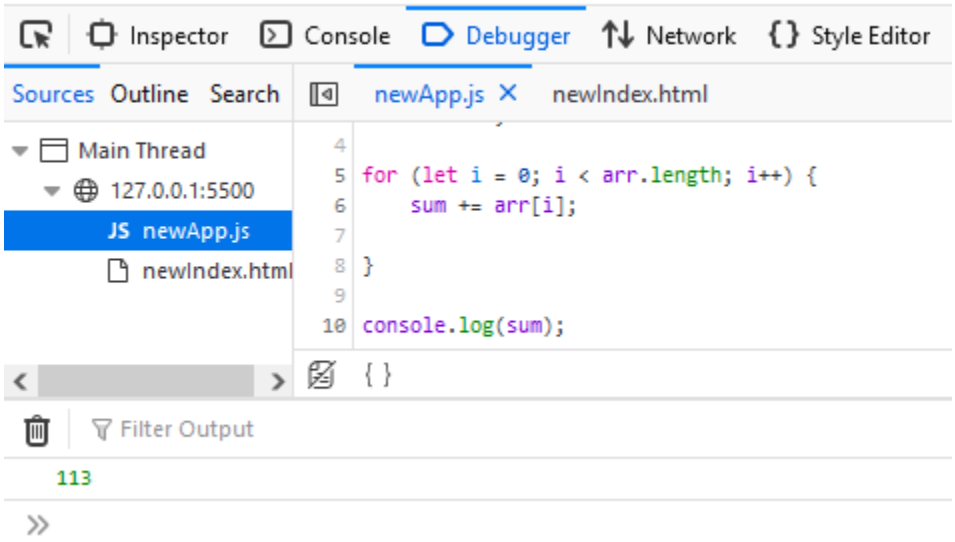


- **<u>Question 5</u>: Find the sum of all positive numbers in an array.**

```
// Question 5
```

```
const arr = [12, 22, 34, 45];
let sum = 0;

for (let i = 0; i < arr.length; i++) {
    sum += arr[i];

}

console.log(sum);
```

- Output:

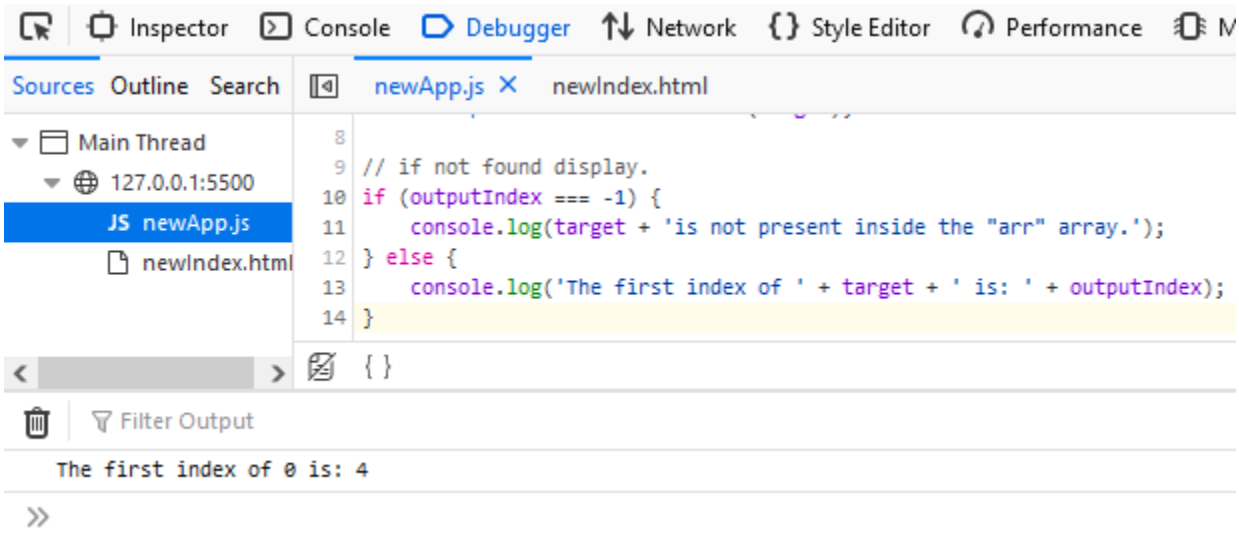


- **<u>Question 6</u>: Find the index of the first occurrence of a specific element in an array.**

```
// Question 6
const arr1 = [1, 2, 3, 4, 0, 8];

// Target element
const target = 0;

const outputIndex = arr1.indexOf(target);
```

```
// if not found display.
if (outputIndex === -1) {
    console.log(target + 'is not present inside the "arr"
array.');
} else {
    console.log('The first index of ' + target + ' is: ' +
outputIndex);
}
```

- Output:

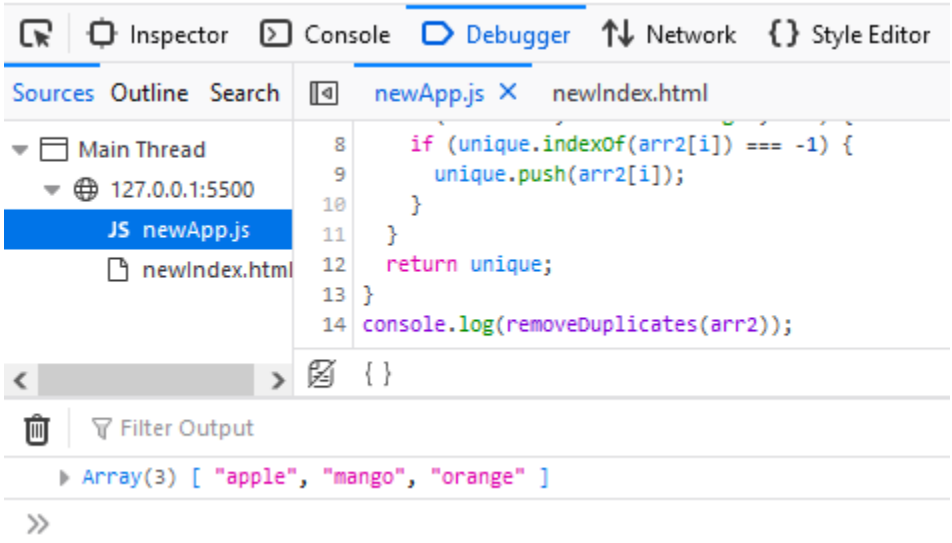


- **<u>Question 7</u>: Remove all duplicates from an array without built-in methods.**

```
// Question 7
let arr2 = ["apple", "mango",
        "apple", "orange", "mango", "mango"];

function removeDuplicates(arr2) {
    let unique = [];
    for (let i = 0; i < arr2.length; i++) {
```

```
        if (unique.indexOf(arr2[i]) === -1) {
            unique.push(arr2[i]);
        }
    }
    return unique;
}
console.log(removeDuplicates(arr2));
```

- Output:

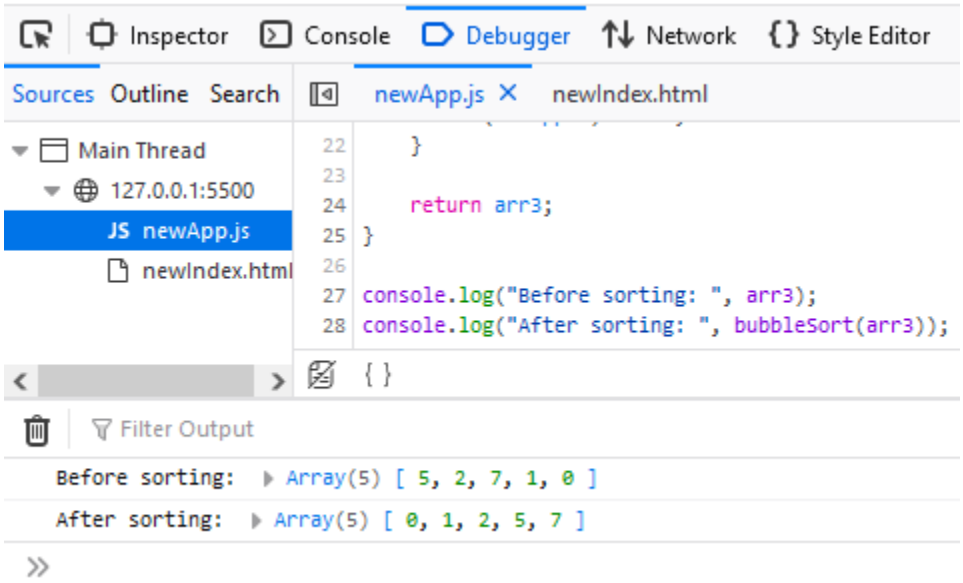


- **<u>Question 8</u>: Sort the array in ascending and descending without built-in methods.**

```
// Question 8
let arr3 = [5, 2, 7, 1, 0];

function bubbleSort(arr3){
    for (let i = 0; i < arr3.length - 1; i++){

        let swapped = false

        for (let j = 0; j < arr3.length - i - 1; j++){
            // swapping the elements
```

```
            if (arr3[j] > arr3[j+1]){
                let temp = arr3[j]
                arr3[j] = arr3[j+1]
                arr3[j+1] = temp
                swapped = true
            }
        }

        // if no elements are swapped
        // that means our array is sorted
        if(!swapped) break;
    }

    return arr3;
}

console.log("Before sorting: ", arr3);
console.log("After sorting: ", bubbleSort(arr3));
```

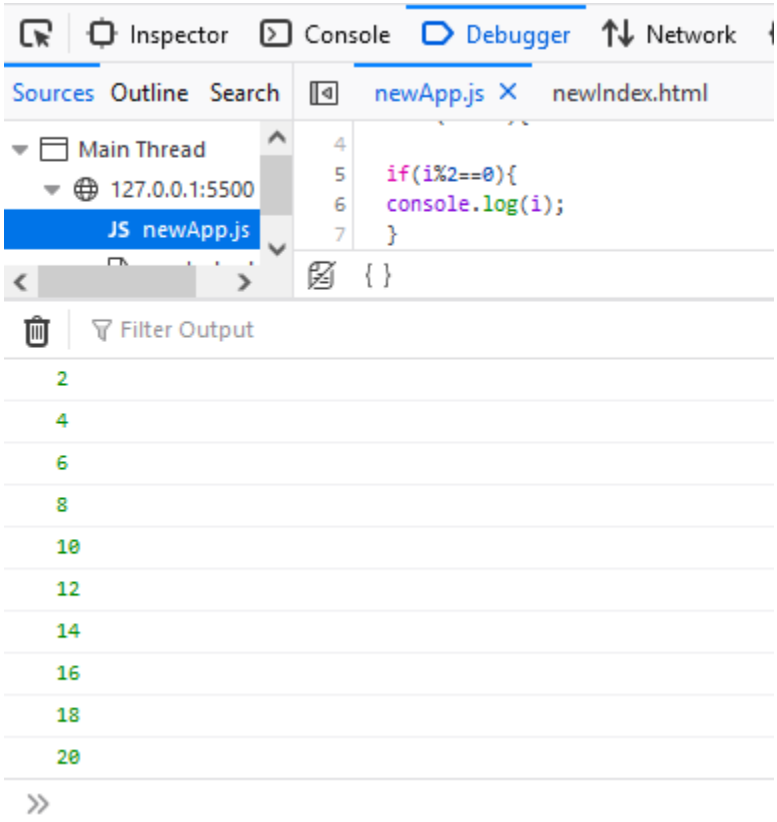
- Output:



- **Question 9: Print all even numbers between 1 and 20 using a while loop.**

```
// Question 9
let i=1;
while (i<=20){

  if(i%2==0){
  console.log(i);
  }
  i++;

}
```

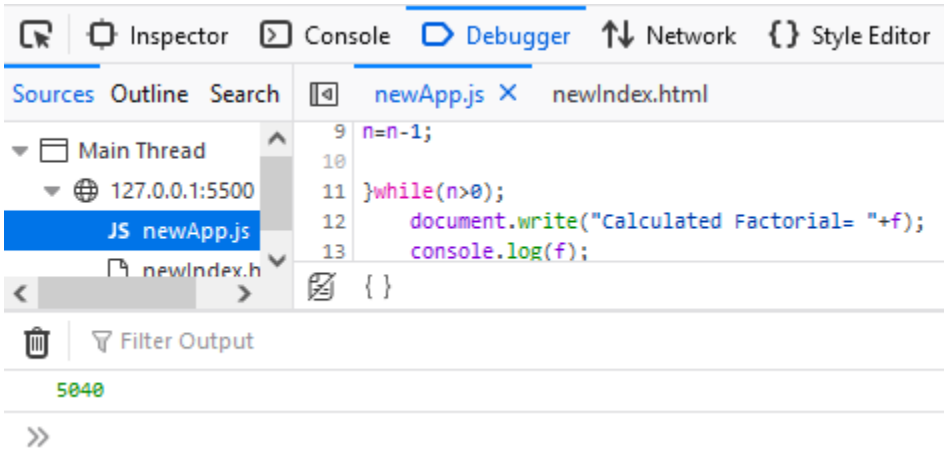
- Output:



- **Question 10: Calculate the factorial of a number using a do-while loop.**

```
// Question 10
var n,f;

n=prompt("Enter any value");
f=1;
do
{
f=f*n;
n=n-1;

}while(n>0);
    document.write("Calculated Factorial= "+f);
    console.log(f);
```

- Output:

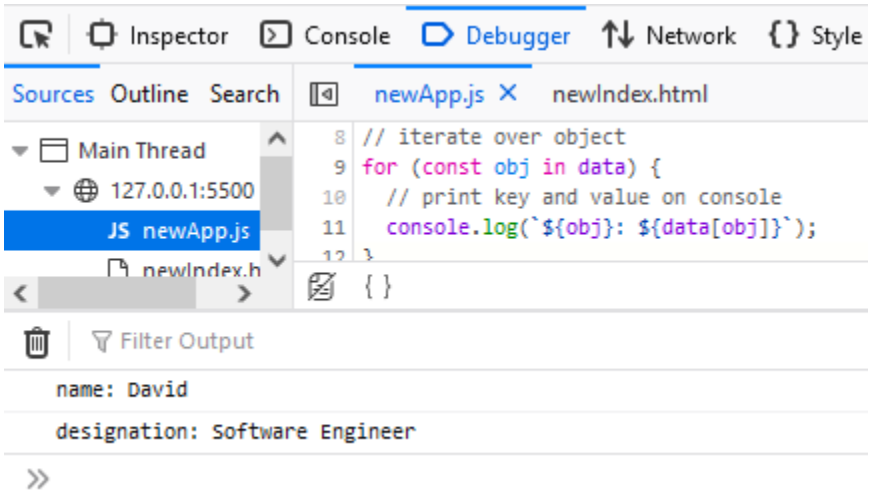


- **<u>Question 11</u>: Iterate through the properties of an object using a for-in loop.**

```
// Question 11
// create an object
const data = {
    name: 'Shubham',
    designation: 'Software Engineer'
}
```

```
// iterate over object
for (const obj in data) {
  // print key and value on console
  console.log(`${obj}: ${data[obj]}`);
}
```

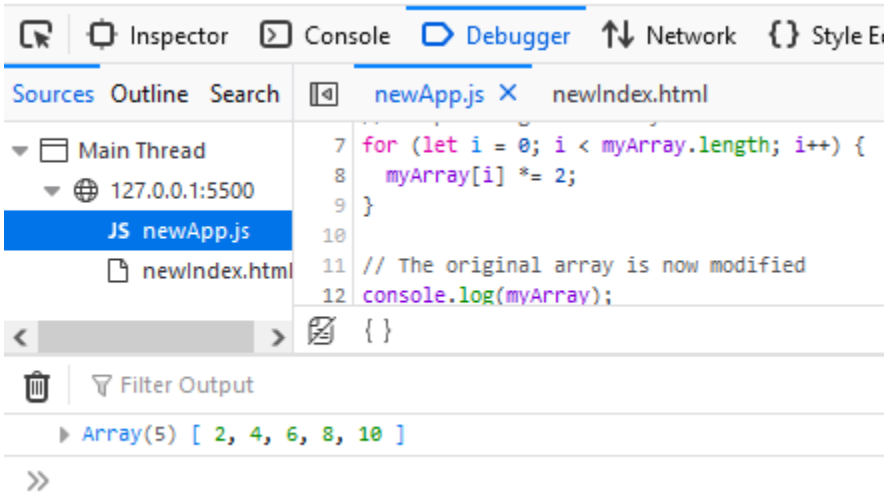
- Output:



- **<u>Question 12</u>: Loop through an array using a for-of loop and double each element.**

```
// Question 12

// Sample array
let myArray = [1, 2, 3, 4, 5];

// Loop through the array and double each element
for (let i = 0; i < myArray.length; i++) {
  myArray[i] *= 2;
}

// The original array is now modified
console.log(myArray);
```

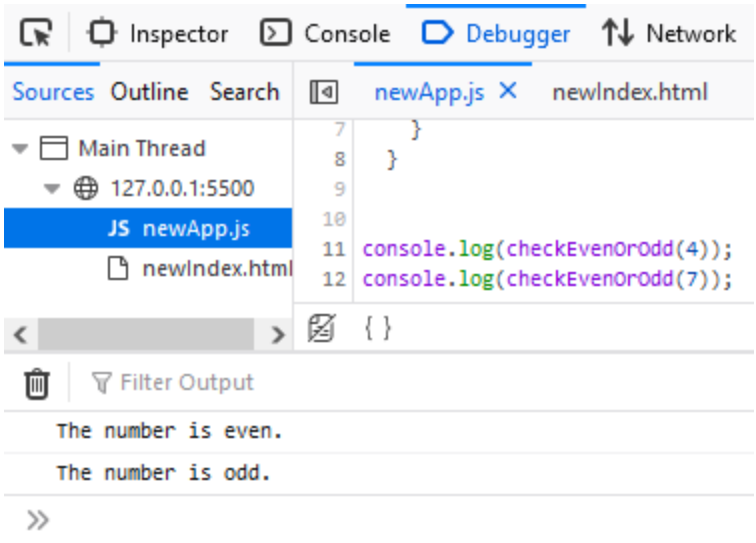
- Output:



- **<u>Question 13</u>: Check if a number is even or odd and return a corresponding message.**

```
// Question 13
function checkEvenOrOdd(number) {
    if (number % 2 === 0) {
      return 'The number is even.';
    } else {
      return 'The number is odd.';
    }
  }


console.log(checkEvenOrOdd(4));
console.log(checkEvenOrOdd(7));
```

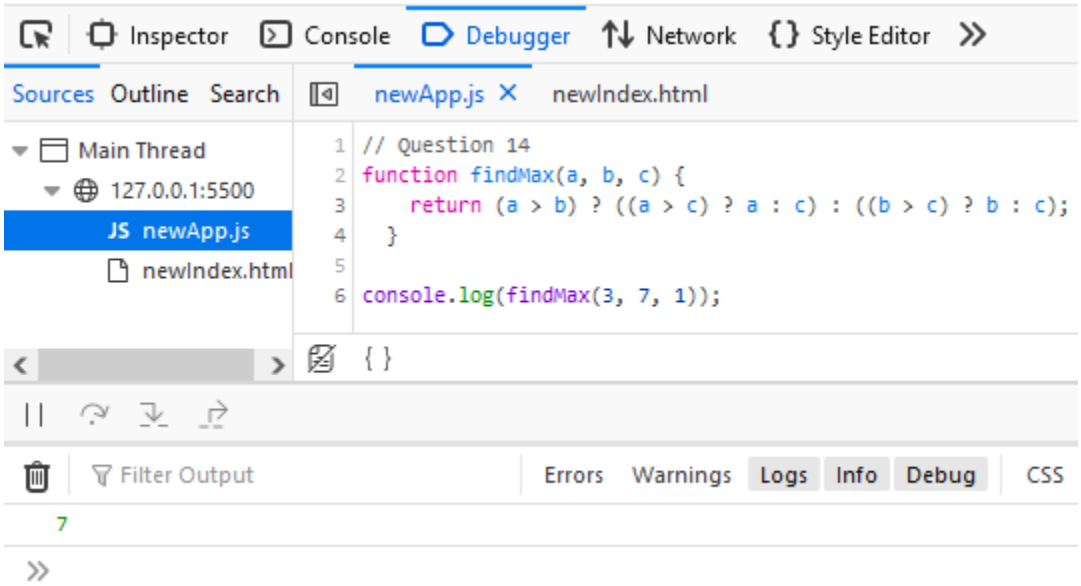
- Output:



- **<u>Question 14</u>: Find the maximum of three numbers using nested ternary operators.**

```
// Question 14
function findMax(a, b, c) {
    return (a > b) ? ((a > c) ? a : c) : ((b > c) ? b : c);
  }

console.log(findMax(3, 7, 1));
```

- Output:



- **<u>Question 15</u>: Determine if a year is a leap year or not.**

```
// Question 15
function isLeapYear(year) {
    // Leap years are divisible by 4
    // However, years divisible by 100 are not leap years,
unless they are also divisible by 400
    return (year % 4 === 0 && year % 100 !== 0) || (year %
400 === 0);
  }

console.log(isLeapYear(2020));
console.log(isLeapYear(2021));
console.log(isLeapYear(2000));
console.log(isLeapYear(1900));
```

- Output: