app.js

```
//1 String Reverse without reserve method

// Reverse without build function

let str = "hello world";
let out = "";
let reverse = ()=>{

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

   return out
}
console.log(reverse())

// Reverse with buildIn function

let str2 = "hello world";
let reverse2 = str2.split("").reverse().join("");
console.log(reverse2)


//2 Count Vowels In Giving String

let string = prompt("Enter String");
//Regular Expression
let voweStr = /[a,e,i,o,u]/gi;
let ch = string.match(voweStr);
console.log(ch)
console.log(ch.join(''))
console.log(ch.length)

//3. Question: Convert the first letter of each word in a sentence to uppercase.

let capitalize = (str) =>{

    let strArr = str.split(" ");
    for(let i = 0; i < strArr.length; i++){
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      strArr[i] = strArr[i][0].toUpperCase() + strArr[i].substring(1)
    }
    return strArr.join(" ")

 }
 console.log(capitalize("i love javascript"))


// 4. Question: Check if a string is a palindrome.

let a = civic
let check =a.split('').reverse().join('')
if(a === check){
    document.write('its a palndrome');
}
else{
    document.write('its not a palndrome')
}

// 5. Sum of all Positive Number

let positive = (num)=>{
    let positive = [];
    for(let i=0; i <num.length; i++){
        if(num[i] > 0){
            positive.push(num[i]);
        }
    }
    return positive
 }
 console.log(positive([0,3,4,6,35,2,-4,43,-3,-3]));

//6. Question: Find the index of the first occurrence of a specific element in an array.

let myArray = [10, 20, 30, 40, 50];
let elementToFind = 30;
let index = myArray.indexOf(elementToFind);

if (index !== -1) {
    console.log(`The element ${elementToFind} is at index ${index}.`);
} else {
    console.log(`The element ${elementToFind} is not in the array.`);
```

```
}


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

function removeDuplicates(arr) {
    let uniqueArray = [];

    for (let i = 0; i < arr.length; i++) {
        if (uniqueArray.indexOf(arr[i]) === -1) {
            uniqueArray.push(arr[i]);
        }
    }

    return uniqueArray;
}

let arrayWithDuplicates = [1, 2, 2, 3, 4, 4, 5];
let arrayWithoutDuplicates = removeDuplicates(arrayWithDuplicates);

console.log("Array with duplicates:", arrayWithDuplicates);
console.log("Array without duplicates:", arrayWithoutDuplicates);

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

// Bubble sort for ascending order
function bubbleSortAscending(arr) {
    let n = arr.length;
    for (let i = 0; i < n - 1; i++) {
        for (let j = 0; j < n - i - 1; j++) {
            if (arr[j] > arr[j + 1]) {
                // Swap the elements if they are in the wrong order
                let temp = arr[j];
                arr[j] = arr[j + 1];
                arr[j + 1] = temp;
            }
        }
    }
    return arr;
}

// Bubble sort for descending order
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```javascript
function bubbleSortDescending(arr) {
    let n = arr.length;
    for (let i = 0; i < n - 1; i++) {
        for (let j = 0; j < n - i - 1; j++) {
            if (arr[j] < arr[j + 1]) {
                // Swap the elements if they are in the wrong order
                let temp = arr[j];
                arr[j] = arr[j + 1];
                arr[j + 1] = temp;
            }
        }
    }
    return arr;
}

// Example usage:
let unsortedArray = [64, 34, 25, 12, 22, 11, 90];
let ascendingArray = bubbleSortAscending([...unsortedArray]); // Create a copy to keep the original unsorted
let descendingArray = bubbleSortDescending([...unsortedArray]); // Create a copy to keep the original unsorted

console.log("Original Array:", unsortedArray);
console.log("Array in Ascending Order:", ascendingArray);
console.log("Array in Descending Order:", descendingArray);


//9. Even Number 1 to 20 using while loop

//  Even Numbers
let i = 1;
while(i <=20){
    if(i%2 == 0){
        console.log(`${i} Even`)
    }
    i++
}

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

function calculateFactorial(number) {
    if (number < 0) {
        return "Factorial is not defined for negative numbers.";
    }
```

```
    let factorial = 1;
    let i = 1;

    do {
        factorial *= i;
        i++;
    } while (i <= number);

    return factorial;
}

// Example usage:
let num = 5;
console.log(`The factorial of ${num} is: ${calculateFactorial(num)}`);


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

let obj = {
   name: "abdulsamad",
   fatherN: "muhammad Amin"
}
for (let key in obj) {
   console.log(obj[key]);
}



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

let number = [1,23,6,3,,6,6,7,9,23,67,,,,352,256,,2352,255]
for(let ch of number){
    console.log((ch));
}


// 13. Question: Check if a number is even or odd and return a corresponding message

let checkNum = 2;
if(checkNum %2 == 0){
    console.log(`${checkNum} is Even`);
```

```
}
else{
    console.log(`${checkNum} is Odd`);
}

// 14. Question: Find the maximum of three numbers using nested ternary operators.

function findMaxOfThreeNumbers(num1, num2, num3) {
    let max = num1 > num2 ? (num1 > num3 ? num1 : num3) : (num2 > num3 ? num2 : num3);
    return max;
}

// Example usage:
let result = findMaxOfThreeNumbers(12, 5, 9);
console.log(`The maximum of the three numbers is: ${result}`);

//15. Question: Determine if a year is a leap year or not.

var year = 2024
if(year %4 ==0 || year %100 == 0 && year %400 == 0){
    document.write(`${year}  LEAP YEAR `);
}
else{
    document.write(`${year}  NOT LEAP YEAR `);

}
```