

# JavaScript Programs

## 1. How can you eliminate duplicate values from a JavaScript array?

```
function uniqueArray(array) {  
    var newSet= new Set(array);  
    var newArray = Array.from(newSet);  
    return newArray;  
}  
var arr = [1,5,2,4,1,6]  
console.log(uniqueArray(arr));  
output: [1, 5, 2, 4, 6]
```

## 2. Remove duplicate in a string - javascript

```
var x = "how are you"  
const result = Array.from(new Set(x)).join("")  
console.log(result)
```

## 3. Write an easy function mentioning whether or not a string is a palindrome.

```
function isPalindrome(str) {  
    str = str.replace(/\W/g, "").toLowerCase(); //gets a lowercase string  
    var string = str.split("").reverse().join(""); //reverses the string  
    //checks if the string and the reversed strings are the same  
    if(string == str)  
        return "A palindrome"  
    else  
        return "Not a palindrome"  
}  
console.log(isPalindrome("4"));  
console.log(isPalindrome("levels"));  
VM64:10 A palindrome  
VM64:11 Not a palindrome
```

## 4. let a = ( [2, 4, 3, 5, 6, -2, 4, 7, 8,] 9); Output: [[2,7],[3,6],[4,5]]

```
function arraypair(array,sum){  
    let a = [];  
  
    for (i = 0;i < array.length;i++) {  
        let first = array[i];  
        for (j = i + 1;j < array.length;j++) {  
            let second = array[j];  
  
            if ((first + second) == sum) {
```

```

        console.log('First: ' + first + ' Second ' + second);

        let b = [];
        b.push(first,second);
        a.push(b);

    }
}

}
console.log('values of a ',a)
}
let a = [2, 4, 3, 5, 6, -2, 4, 7, 8, 9];
arraypair(a,9);

```

## 5. Removing Duplicate Values in array

```

var array = [4,5,4,22,56,56,10,2,2,1];
let unique=[...new Set(array)]
unique.sort(function(a, b) {
    return a - b;
});
console.log(unique);
VM127:6 (7) [1, 2, 4, 5, 10, 22, 56]

```

### 2<sup>nd</sup> Method

```

function App(){
let arr=[1,2,1,2,3,4,3,8];
let result=[];
for(let i=0;i<arr.length;i++){
if(arr.indexOf(arr[i]) == i){
result.push(arr[i]);
}

}
console.log(result);
}
App();

```

## 6. Removing Duplicate Values in array

```

let animals = ["Lion", "Rabbit", "Mouse", "Monkey", "Lion","Ape"]
let unique = [...new Set(animals)]
console.log(unique)
Output: ['Lion', 'Rabbit', 'Mouse', 'Monkey', 'Ape']

```

## 7. Task :

```

const names=['alex','bob','alex','atta'];
obj1={}; obj2=Object.assign({},names);
console.log('values of obj2',obj2);
for(let i=0; i<names.length;i++){
obj1[names[i]]=obj1[names[i]]!=null?obj1[names[i]]+1:1; } console.log("",obj1);
let finalarray=[];
finalarray=Object.entries(obj1);

```

```
console.log('values of final array',finalarray);  
output: values of obj2
```

```
{0: 'alex', 1: 'bob', 2: 'alex', 3: 'atta'}  
{alex: 2, bob: 1, atta: 1}  
values of final array  
(3) [Array(2), Array(2), Array(2)]
```

```
0: (2) ['alex', 2]  
1: (2) ['bob', 1]  
2: (2) ['atta', 1]  
length: 3  
[[Prototype]]: Array(0)
```

## 8. FizzBuzz:

```
For(var i=1; i<101; i++){  
If(i%15==0) console.log("FizzBuzz");  
FizzBuzz  
for (var i = 1; i < 101; i++) {  
    if (i % 15 == 0) console.log("FizzBuzz");  
    else if (i % 3 == 0) console.log("Fizz");  
    else if (i % 5 == 0) console.log("Buzz");  
    else console.log(i);  
}
```

## 9. 100 Soldier :

```
var team = new Array();  
for (var i = 1; i <= 100; i++) {  
    team[i - 1] = i;  
}  
  
var current;  
var next;  
  
var j = 0.  
while (team.length > 1) {  
    current = team[j];  
    team.push(team[j]);  
    team.shift();  
    next = team[j];  
    team.shift();  
    document.writeln("Soldier " + current + " kills soldier " + next + "<br />");  
}  
document.writeln("The last one is number " + team[0]);
```

## 10. Sum of Array of Elements:

```
Const sum=[1,2,3].reducer(add,0);  
Function add(accumulator,a){  
Return accumulator+a;  
}  
Console.log(sum);
```

```
Console.log([1,2,3,4].reducer((a,b)=>a+b,0))
Console.log([ ].reducer((a,b)=>a+b,0);
```

### 11. setTimeout with clouser

```
function x(){
  var i=1;
  setTimeout(function (){
    console.log(i);
  },1000);
  Console.log("this is something");
}
X();
o/p This is something.
```

### 12. JavaScript | Promises

```
var promise = new Promise(function(resolve, reject) {
  const x = "geeksforgeeks";
  const y = "geeksforgeeks"
  if(x === y) {
    resolve();
  } else {
    reject();
  }
});
```

```
promise.
  then(function () {
    console.log('Success, You are a GEEK');
  }).
  catch(function () {
    console.log('Some error has occurred');
  });
```

#### 2.method

```
var promise = new Promise(function(resolve, reject) {
  resolve('Geeks For Geeks');
})
```

```
promise
  .then(function(successMessage) {
    //success handler function is invoked
    console.log(successMessage);
  }, function(errorMessage) {
    console.log(errorMessage);
  })
```

### 13. Task:

```
for(var i=0;i<10;i++){
  setTimeout(()=>console.log(i),1000);
}
Answer:10 (10time printed).
```

**14. Task:**

```
var b=100;
var b=1000;
let a=10;
let a=100;
console.log(a);
console.log(b);
VM658:4 Uncaught SyntaxError: Identifier 'a' has already been declared
```

**15. Task :**

```
Console.log("one");
setTimeout(function(){
  console.log("two");
},0);
Promise.resolve().then(function(){
  Console.log("three");
})
Console.log("four");
Output: one
       Four
       Three
       Two
```

**16. Task :**

```
function makeAdder(x) {
  return function(y) {
    return x + y;
  };
}
var add5 = makeAdder(5);
var add10 = makeAdder(10);
console.log(add5(2)); // 7
console.log(add10(2)); // 12
```

**17. Task :**

```
const data = ['a','b','c','d','d','e','a','b','c','f','g','h','h','h','e','a'];
const result = data.reduce((a, c) => a.set(c, (a.get(c) || 0) + 1), new Map());
console.log(...result);
```

**18. Task:**

```
const data=(x,...arr)=>{
  console.log(arr);
}
data(10,20,30);
o/p [20, 30]
```

**19. Task:**

```
const data=(x,arr)=>{
  console.log(arr);
}
data(10,20,30);
o/p 20
```

## 20. Task:

```
var counter=10;
var counter;
console.log(window.counter); o/p 10
```

## 21. Task:

```
var counter=0;
console.log(window.counter);
o/p 0
```

## 22. JavaScript Number Patterns:

```
<html>
<head>
<title>JavaScript Number Patterns</title>
<script>
var rows, m, n, num = 1;
rows = 4;
for (m = 1; m <= rows; m++) {
for (n = 1; n <= m; n++)
document.write(num++);
document.write('<br/>');
}
</script>
</head>
<body></body>
</html>
```

## 23. Inheritance in javascript:

```
// parent class
class Person {
  constructor(name) {
    this.name = name;
  }

  greet() {
    console.log(`Hello ${this.name}`);
  }
}

// inheriting parent class
class Student extends Person {

}

let student1 = new Student('Jack');
student1.greet();

let n=5;
let num="";
for(let i=1; i<=n; i++){
for(let j=1; j<=i; j++){
  num += j;
}
```

```

}
num += " <br>";
}
document.write(num);
output:
1
12
123
1234
12345
123456

```

```

let n=5x ;
let num="";
for(let i=1; i<n; i++){
  for(let j=1; j<=n-i; j++){
    num += j;
  }
  num += " <br>";
}
document.write(num);
output:
12345
1234
123
12
1

```

```

let n=4;
let num=1;
for(let i=1; i<=n; i++){
  for(let j=1; j<=i; j++){
    document.write(num++);
    document.write('<br>');
  }
}

```

```

}
output:
1
23
456
78910

```

```

function findSum(str)
{
    let temp = "0";
    let sum = 0;
    for (let i = 0; i < str.length; i++) {
        let ch = str[i];
        if (!isNaN(String(ch) * 1))
            temp += ch;
        else {

```

```

        sum += parseInt(temp);
        temp = "0";
    }
}

return sum + parseInt(temp);
}
let str = "x1y1x2y2m3";
document.write(findSum(str));

```

output:9

## 24. INPUT: "I LIVE IN INDIA"; OUTPUT A IDNI EVILI

```

str1="I LIVE IN INDIA";p
function reverses(str)
{
    let newStr = str.split("");
    let result = new Array(newStr.length);

    for (let i = 0; i < newStr.length; i++) {
        if (newStr[i] == ' ') {
            result[i] = ' ';
        }
    }
    let j = result.length - 1;
    for (let i = 0; i < newStr.length; i++) {
        if (newStr[i] != ' ') {
            if (result[j] == ' ') {
                j--;
            }
            result[j] = newStr[i];
            j--;
        }
    }
    console.log((result).join(""));
}
reverses(str1);

```

## 25.INPUT: num = [1,5,2,6,3,4,2,5,1,1,6,4,43,5,5,6]; OUTPUT:

"1:3,2:2,3:1,4:2,5:4,6:3,43:1,"

```

function StringChallenge(num) {
    num = [1,5,2,6,3,4,2,5,1,1,6,4,43,5,5,6];
    let result = {};
    for (let i = 0; i < num.length; i++) {
        if (result[num[i]]) {

            result[num[i]] = result[num[i]] + 1;
        } else {
            result[num[i]] = 1;
        }
    }
}

```



```

    }
  }
  let strOutput = "";
  const keys = Object.keys(result);
  for (let i = 0; i < keys.length; i++) {
    strOutput += keys[i] + ":" + result[keys[i]] + ",";
  }
  return strOutput;
}
console.log(StringChallenge());

```

## 26.INPUT:WWWBBBW OUTPUT:3W3B1W

```

function StringChallenge(str){
  let count=0;
  let previousChar=null;
  let Result="";
  for(let i=0;i<str.length;i++){
    if(previousChar !== null && previousChar !== str[i]){
      Result += count;
      Result += previousChar;
      count = 1;
      previousChar=str[i];
    }
    else
    {
      if(previousChar === null){
        previousChar = str[i];
      }
      ++count;
    }
    if(i=== str.length-1){
      Result +=(count + previousChar);
    }
    if(i===str.length -1){
      Result +=(count + previousChar)
    }
  }
  return Result;
}
let str="wwwbbbw";
console.log(StringChallenge(str));

```

## 27.INPUT: ="aaabbcde"; OUTPUT: "3a2b1c1d1e"

```

function StringChallenge(str){
  let result={};
  for(let i=0;i<str.length;i++){
    if(result[str[i]]){
      result[str[i]] = result[str[i]] + 1;
    }
    else

```

```

{
  result[str[i]]=1;
}
}
let strOutput="";
const keys=Object.keys(result)
for(let i=0; i<keys.length;i++){
  strOutput +=(result[keys[i]] + keys[i]);
}
return strOutput;
}
let str1="aaabbcde";
console.log(StringChallenge(str1));

```

**28.INPUT:let arr = [1,2,[3,4,[[5,6]]]]; OUTPUT:[1,2,3,4,5,6]**

```

let arr = [1,2,[3,4,[[5,6]]]];//

function getElements(inputArr) {
  let result = [];
  inputArr.forEach(ele => {
    if(Array.isArray(ele)) {
      result = [...result, ...getElements(ele)]
    } else {
      result.push(ele)
    }
  })
  return result;
}
console.log(getElements(arr))

```

**29.INPUT: [9,4,-2,-1,5,0,-5,-3,2] OUTPUT: [9, -2, 4, -1, 5, -5, 0, -3, 2]**

```

const arr=[9,4,-2,-1,5,0,-5,-3,2];
const pos=arr.filter(x=>x>=0);
const neg=arr.filter(x=>x<0);
const result=[];
for(let i=0, j=0; i < pos.length || j<neg.length; i++,j++){
  if(i<pos.length) result.push(pos[i])
  if(j<neg.length) result.push(neg[j])
}
console.log(result);

```

**30.INPUT:[1,2,1,2,3,4,3,8] OUTPUT: {1:2,2:2,3:2,4:1,8:1}**

```

function App(){
  let arr=[1,2,1,2,3,4,3,8];
  let result={};
  for(let i=0;i<arr.length;i++){

```

```

if(result[arr[i]]){
result[arr[i]]=result[arr[i]]+1;

}else{
result[arr[i]]=1;
}
}
console.log(result);
}
App();

```

### 31.First Repeating Character:

```

function firstRepeateCharacter(str){
for(let i=0; i<str.length;i++){
if(str.indexOf(str.charAt(i))!= str.lastIndexOf(str.charAt(i))){
return str.charAt(i);
}
}
return 'no result found'
}
let str="geeksforgeeks"
console.log(firstRepeateCharacter(str))

```

### 32.Reverse The Word:

```

function reverseString(str){
var splitstring=str.split("");
var revesreArray=splitstring.reverse();
var joinArray=revesreArray.join("");
console.log(joinArray);
}
reverseString('hello');//olleh

```

### 33.INPUT : "welcome to javascript"; OUTPUT: "tpircsavaj ot emoclew"

```

var str="welcome to javascript";
function reverseByword(s){
console.log( s.split("").reverse().join(""));
}
reverseByword(str);

```

```

let x = 5;
x = 6;
console.log(x);      o/p -//6

```

```

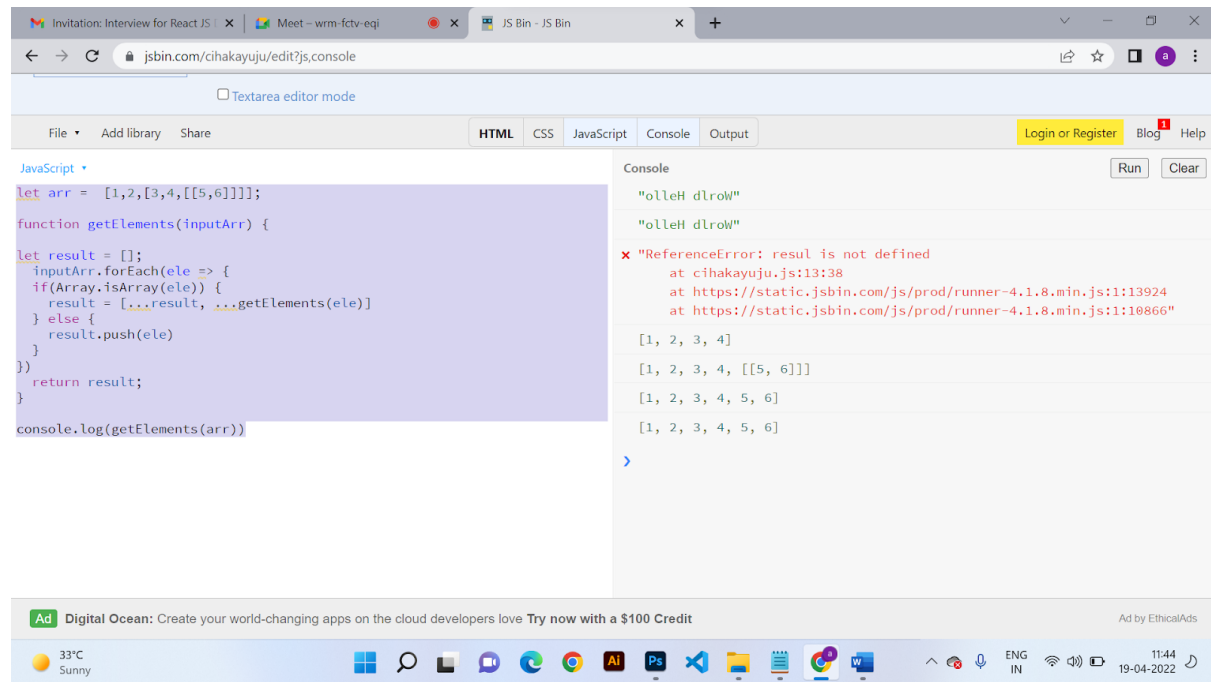
console.log(a);

```

```
var a = 5;
console.log(a);
a = () => {};
console.log(a);
function a() {};
console.log(a);    o/p -- //to print 2nd console 5
```

```
console.log('a');
for (var i=0; i<=3; i++) {
  setTimeout(() => console.log(i), 0)
}
Console.log('b');    o/p -a,4,4,4,4,b
```

```
let arr = [1,2,[3,4,[[5,6]]]];
function getElements(inputArr) {
  let result = [];
  inputArr.forEach(ele => {
    if(Array.isArray(ele)) {
      result = [...result, ...getElements(ele)]
    } else {
      result.push(ele)
    }
  })
  return result;
}
console.log(getElements(arr))
```



### 34.String Reverse with same place(swapping):

```
var str = "Hello world"

var str1 = str.split(" ");

var str_rev = [];

str1.forEach((el) => {

    str_rev.push(el.split("").reverse().join(""));

})

console.log(str_rev.join(" "));
```

### 35.Nearest value print in given array:

```
var counts = [4, 9, 15, 6, 2],
goal = 20;
var closest = counts.reduce(function(prev, curr) {
    return (Math.abs(curr - goal) < Math.abs(prev - goal) ? curr : prev);
});
console.log(closest);
```

### 36. [Sort an array containing numbers using For loop](#)

```
var Arr = [1, 7, 2, 8, 3, 4, 5, 0, 9];

for (var i = 1; i < Arr.length; i++) for (var j = 0; j < i; j++) {

  if (Arr[i] < Arr[j])

  {

    var x = Arr[i]; Arr[i] = Arr[j]; Arr[j] = x;

  }

}

console.log(Arr);

ans:[0,1,2,3,4,5,6,7,8,9]
```

### 37. [How to randomize \(shuffle\) a JavaScript array?](#)

```
function shuffle(array) {
  let currentIndex = array.length, randomIndex; // While there remain elements to shuffle.
  while (currentIndex != 0) { // Pick a remaining element.
    randomIndex = Math.floor(Math.random() * currentIndex);
    currentIndex--; // And swap it with the current element.
    [array[currentIndex], array[randomIndex]] = [ array[randomIndex],
    array[currentIndex]];
  }
  return array;
} // Used like so
var arr = [2, 11, 37, 42];
shuffle(arr);
console.log(arr);
```

Repeated String/array count in javascript

```
function StringChallenge(num) {
  num = [1,5,2,6,3,4,2,5,1,1,6,4,43,5,5,6];
  let result = {};
  for (let i = 0; i < num.length; i++) {
    if (result[num[i]]) {
      result[num[i]] = result[num[i]] + 1;
    } else {
      result[num[i]] = 1;
    }
  }
  let strOutput = "";
  const keys = Object.keys(result);
  for (let i = 0; i < keys.length; i++) {
    strOutput += keys[i] + ":" + result[keys[i]] + ",";
  }
}
```

```
    return strOutput;
}
console.log(StringChallenge())
```

Repeated String/array count in javascript

```
const names=['alex','bob','alex','atta'];
obj1={};
obj2=Object.assign({},names);
console.log('values of obj2',obj2);
for(let i=0; i<names.length;i++){
obj1[names[i]]=obj1[names[i]]!=null?obj1[names[i]]+1:1;
}
console.log(obj1);
```

Let str=abccabccabc

The output comes to (abc,2) in javascript

123=321

-123=-321

120=21 in javascript