

Functions in JS

Block of code that performs a specific task, can be invoked whenever needed

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Functions in JS

Function Definition

```
function functionName( ) {  
  
    //do some work  
  
}
```

```
function functionName( param1, param2 ...) {  
  
    //do some work  
  
}
```

Function Call

```
functionName( );
```

Arrow Functions

Compact way of writing a function

```
const functionName = ( param1, param2 ...) => {  
  
  //do some work  
  
}
```

```
const sum = ( a, b ) => {  
  
  return a + b;  
  
}
```

Let's Practice

Qs. Create a function using the “function” keyword that takes a String as an argument & returns the number of vowels in the string.

Qs. Create an arrow function to perform the same task.

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forEach Loop in Arrays

arr.**forEach**(callbackFunction)

CallbackFunction : Here, it is a function to execute for each element in the array

**A callback is a function passed as an argument to another function.*

```
arr.forEach( ( val ) => {  
    console.log(val);  
} )
```

kisi function ko jab ek object se associate kar dete hain, it's a method... jaise foreach is for arrays, not for strings
for each ke liye we need an array object

value, idx, array as argument

it is also called a higher order method
a method that takes a fnx as an argument or returns one

Let's Practice

Qs. For a given array of numbers, print the square of each value using the forEach loop.

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Some More **Array Methods**

Map

Creates a new array with the results of some operation. The value its callback returns are used to form new array

```
arr.map( callbackFnx( value, index, array ) )
```

```
let newArr = arr.map( ( val ) => {  
    return val * 2;  
} )
```

part of modern JS, simplify a lot of things for us
you don't have to memorize this, use the slides as a
reference.. but we always google things
map is similar to forEach.. use it to print elements
map -> jab naya array banana hai -> square of each num

Some More **Array Methods**

Filter

Creates a new array of elements that give true for a condition/filter.

Eg: all even elements

```
let newArr = arr.filter( ( val ) => {  
    return val % 2 === 0;  
})
```

the return value will be either true or false
if true, el is included in new array, else not

filter out all elements greater than 15

none of them modify original

Some More **Array Methods**

Reduce

Performs some operations & reduces the array to a single value. It returns that single value.

JavaScript Demo: Array.reduce()

```
1 const array1 = [1, 2, 3, 4];
2
3 // 0 + 1 + 2 + 3 + 4
4 const initialValue = 0;
5 const sumWithInitial = array1.reduce(
6   (accumulator, currentValue) => accumulator + currentValue,
7   initialValue,
8 );
9
10 console.log(sumWithInitial);
11 // Expected output: 10
```

2 values leta hai, calculates some result
then using result & next index, calculates new val
then res & next idx .. new val

Let's Practice

Qs. We are given array of marks of students. Filter out of the marks of students that scored 90+.

Qs. Take a number n as input from user. Create an array of numbers from 1 to n.

Use the reduce method to calculate sum of all numbers in the array.

Use the reduce method to calculate product of all numbers in the array.