

Pass by Value vs Pass by Reference

Pass by Value

- In pass by value, the function is called by directly passing the variable's value as the arguments.
- Changing the arguments inside the Function doesn't affect the variable passed from outside the Function because parameters passed as an argument create their own copy. So any changes made inside the Function are made to the copied value, not to the original value.

For e.g.

```
function passByValue(varOne, varTwo) {  
    console.log("Inside pass by Value Method");  
    varOne = 50;  
    varTwo = 100;  
    console.log("varOne = " + varOne + " varTwo = " + varTwo);  
}  
  
let varOne = 15;  
let varTwo = 30;  
  
console.log("Before Call pass by Value Method");  
console.log("varOne = " + varOne + " varTwo = " + varTwo);  
  
passByValue(varOne, varTwo)  
  
console.log("After Call pass by Value Method");  
console.log("varOne = " + varOne + " varTwo = " + varTwo);
```

The output will be:

```
Before Call pass by Value Method  
varOne = 15 varTwo = 30  
Inside pass by Value Method  
varOne = 50 varTwo = 100  
After Call pass by Value Method  
varOne = 15 varTwo = 30
```

Pass by Reference

- In Pass by Reference, Function is called by directly passing the reference/address of the variable as an argument.
- Parameters passed as an argument do not create their own copy. It refers to the original value, so changes inside Function affect the original value.
- In Javascript, objects and arrays follow pass by reference.

For e.g.

```
function passByReference(Obj,arr) {  
  console.log("Inside pass by Reference Method");  
  Obj.a = 10;  
  arr.push("bob");  
  console.log(Obj, arr);  
}  
  
let Obj = {a:15};  
let arr = ["raj", "rahul"];  
console.log("Before Call pass by Reference Method");  
console.log(Obj, arr);  
  
passByReference(Obj,arr)  
console.log("After Call pass by Reference Method");  
console.log(Obj,arr);
```

The output will be:

```
Before Call pass by Reference Method  
{ a: 15 } [ 'raj', 'rahul' ]  
Inside pass by Reference Method  
{ a: 10 } [ 'raj', 'rahul', 'bob' ]  
After Call pass by Reference Method  
{ a: 10 } [ 'raj', 'rahul', 'bob' ]
```