

22-Arrays-Reference

```
JS 22-array-reference.js
1 console.log([1] == [1]);
2 console.log([1] === [1]);
3
```

tusharkhan
false
false
tusharkhan

It is giving us `false`. It should be true as both sides are equal? But their `values` and also the `array` itself is not equal to the other one. But why?

```
3
4 console.log("a" === "a");
5 console.log("a" == "a");
6
```

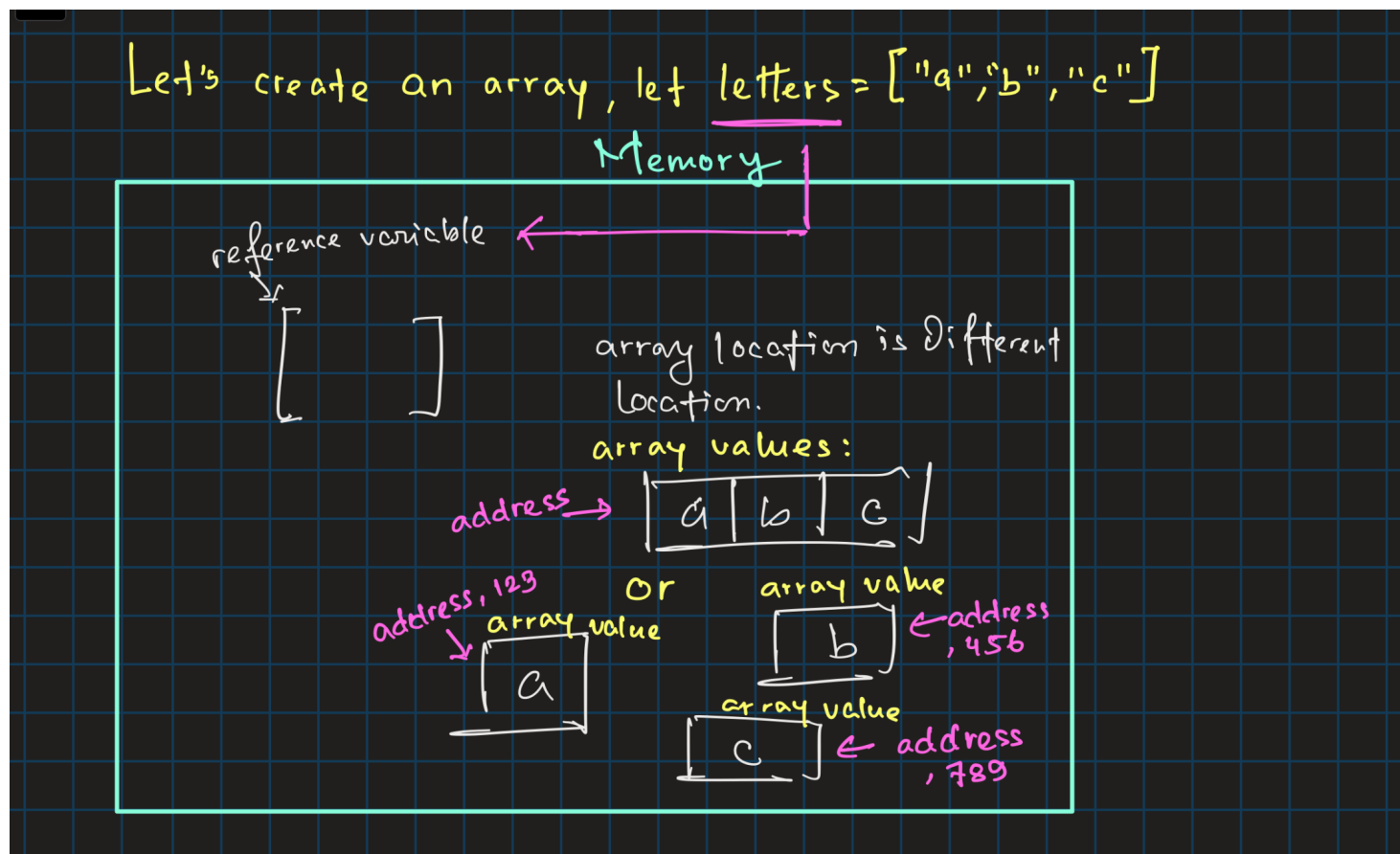
true
true
tusharkhan

Just like these are `true` why are not the previous array cases true?

Reference

Reference meaning = address in memory

Whenever we create an array, we create a `reference variable`



```
letters[0] = letters[123]
letters[1] = letters[456]
letters[2] = letters[789]
```

so the variable letters is storing the address and not the value.

Thus when we compare two arrays, we don't compare their values, we compare their address.

Here we created a variable named `letters` but in memory we have created a reference variable.

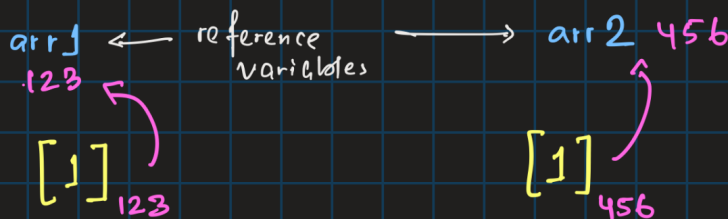
We always access values through this reference variable.

When we search for a value and give index number, the reference variable knows to which address it should go to get the values. Example, when `letters[0]` it refers to the address: 123.

Thus arrays are not creating values, rather they are creating unique addresses

Another Example

```
let arr1 = [1]
let arr2 = [1]
```



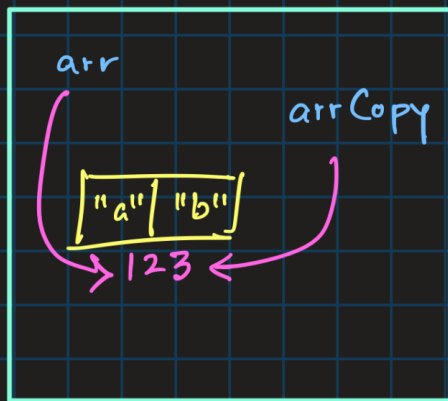
arr1 will have value 123
 $\therefore 123 \neq 456$
 $\therefore arr1 \neq arr2$

arr2 will have value 456

🔥 Creating new arrays will create new addresses.

So how to copy arrays and why changing a value of one array automatically change the value of another array?

```
let arr = ["a", "b"]  
let arrCopy = arr
```



now both these arrays
will refer to same address
and changing values in one
array will automatically
change values of other array.
Because they are referring to
the same address.

We thus do not need to copy the values, we just copy the reference variable and its address to another array variable.

```
22-array-reference.js > ...  
1 let arr = ["a", "b"];  
2 let arrCopy = arr;  
3 console.log(arr == arrCopy);  
4 console.log(arr === arrCopy);  
5
```

● tusharkhan :
true
true
○ tusharkhan :

```
2-array-reference.js > ...  
1 let arr = ["a", "b"];  
2 let arrCopy = arr;  
3  
4 arrCopy.push("c");  
5 arr.push("d");  
6 console.log(arr);  
7 console.log(arrCopy);  
8
```

● tusharkhan JavaScript \$
['a', 'b', 'c', 'd']
['a', 'b', 'c', 'd']
○ tusharkhan JavaScript \$