

## \* Arrays theory :-

→ It is a data structure that can store collection of data in a linear contiguous orientation in the memory.

→ Elements are accessed using indexes which starts from 0 & goes to (length of array - 1)

## # Creating arrays :-

### 1) Using array literal :-

let arr = []; → Empty array

let arr2 = [1, 2.5, true, "parth"]; → Heterogeneous array

|           |   |     |      |         |
|-----------|---|-----|------|---------|
| arr2 →    | 1 | 2.5 | true | "parth" |
| indexes → | 0 | 1   | 2    | 3       |

### 2) Using Array() constructor :-

let arr1 = new Array(); → Empty array

let arr2 = new Array(3); → Array with 3 elements whose values are undefined.

|        |           |           |           |
|--------|-----------|-----------|-----------|
| arr2 → | undefined | undefined | undefined |
|        | 0         | 1         | 2         |

## \* Adding & updating values :-

let arr = new Array(3);

arr[0] = "parth";

arr[1] = "bharat";

arr[2] = "lily";

console.log(arr); → ["parth", "bharat", "lily"]

} Adding / updating values

## \* Arrays & strings comparison :-

→ Elements of arrays & strings can be accessed using indexing.

let str = "parth";

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

`let str = "p";`  
`console.log(str[0]);` → "p"

→ We can update an element of an array but not of a string.

`str[0] = "a";`

`console.log(str[0]);` → "p"

`let arr = [1, 2, 3, 4, 5];`  
`console.log(arr[0]);` → 1

`arr[0] = 69;`

`console.log(arr[0]);` → 69.

→ Thus, arrays in javascript are mutable (can be modified once created) whereas strings are immutable (cannot be modified once created).

### \* Arrays & objects comparison:-

→ Arrays are custom objects.

`console.log(typeof []);` → Object

→ Index of the element is the key & the element is value.

`let arr = ["parth", "jay"];` → {  
          0       1                   0 : "parth",  
                                      1 : "jay"  
                                      }

### \* for-of loop:-

→ Widely used to iterate over arrays & strings

`let arr = [1, 2, 3, 4];`  
`for (let element of arr) {`  
    `console.log(element);`  
`}`

→ Here, the element variable will be pointing towards each element of the array arr one by one.

### \* for-in loop:-

`let arr = [2, 5, 7, 8, 1];`  
`for (let index in arr) {`  
    `console.log(arr[index]);` → 2 5 7 8 1  
`}`

→ The index variable stores the index of the current element.

for (let index in arr) {

console.log(index); → 0 1 2 3 4  
}