* 2D arrays :-

→ A regular array is 1D structure that occupies contiguous memory.

→ If we club such 1D arrays together in a single array, we form a 2D array.

```
[
    [1, 2, 3],
    [4, 5, 6],      } Inner 1D arrays
    [7, 8, 9]
]  ⟶ Outer array
```

→ This structure represents a matrix.

outer[0] ; → [1,2,3]

outer[1] ; → [4,5,6]

outer[2] ; → [7,8,9]

→ We can find multiple 1D arrays together inside another array to form 2D array.

* Creating a 2D array :-

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

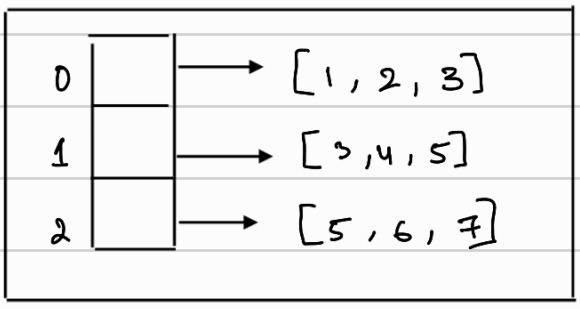
→ We can have inner arrays of different lengths as well.

```
let arr2 = [[1], [1,2], [3,2,3], [4]];
```

→ Such arrays are called as Jagged arrays.

→ Jagged arrays are language dependent & not all languages support it.

* Memory representation of 2D arrays :-



Outer[0] ; → [1,2,3]

Outer[0][1] ; → 1

Outer array represents rows & inner array represents columns.

Q. Create a 2D array of 5×6 (5 rows & 6 columns) & every cell of the 2D array should be 0.

test.js > ...

```
1   // Creating outer array
2   let arr = new Array(5);
3
4   // At every row, we want 6 cols
5   for(let i = 0; i < arr.length; i++) {
6       let innerArr = new Array(6).fill(0);
7       arr[i] = innerArr;
8   }
9
10  console.log(arr);
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
[Running] node "/home/parth/Developer/DSA/test.js"
[
  [ 0, 0, 0, 0, 0, 0 ],
  [ 0, 0, 0, 0, 0, 0 ],
  [ 0, 0, 0, 0, 0, 0 ],
  [ 0, 0, 0, 0, 0, 0 ],
  [ 0, 0, 0, 0, 0, 0 ]
]
```