In [ ]:
```
//object

//property, methods(functionality)


//dog => breed, color, height // bark(), eat()


// var person = {
//     name:"suyash",
//     year : 1994,
//     getAge : function(){
//         return 2021-this.year
//     }
// }


// obj.method()
// obj.prop
```

In [2]:
```
//property

var arr = [1, 2, 3, [4, 5]]

//length

console.log(arr.length)
```

```
4
```

In [8]:
```
var arr = [1, 2, 3, 45, 23]



var loopOnArray = (arr, cb)=>{
   for(var i=0; i<arr.length; i++){
        cb(arr[i], i, arr)
    }
}



loopOnArray(arr, (el, ind, a)=>{
    console.log(el, ind, a)
})


console.log("for each")



function sum(a, b, c){

}


sum(10, 20, 30, )
```

```
1 0 [ 1, 2, 3, 45, 23 ]
2 1 [ 1, 2, 3, 45, 23 ]
3 2 [ 1, 2, 3, 45, 23 ]
45 3 [ 1, 2, 3, 45, 23 ]
23 4 [ 1, 2, 3, 45, 23 ]
for each
1 0 [ 1, 2, 3, 45, 23 ]
2 1 [ 1, 2, 3, 45, 23 ]
3 2 [ 1, 2, 3, 45, 23 ]
45 3 [ 1, 2, 3, 45, 23 ]
23 4 [ 1, 2, 3, 45, 23 ]
```

In [9]:
```
//forEach (cb)
// cb params => currentIterationElement, index, array

var arr = [1, 2, 3, 45, 23]

arr.forEach( (e, ind, ar) =>{
    console.log(e)
})
```

```
1
2
3
45
23
```

In [13]:
```
//insertion

var arr = ["yash", "mohit", "priyanka"]


//push  => inserts new element at end of the array     => returns length of array after insertion
//unshift => inserts new element at begining of the array => return length of array after insertion


console.log(arr.push("shubham"))

console.log(arr.unshift('suyash'))
console.log(arr)
```

```
4
5
[ 'suyash', 'yash', 'mohit', 'priyanka', 'shubham' ]
```

In [19]:
```
//deletion
//pop => removes an from the end => returns removed element
//shift => removes an from the begining => returns removed element
var arr = [ 'suyash', 'yash', 'mohit', 'priyanka', 'shubham' ]

console.log(arr.pop())
console.log(arr)


console.log(arr.shift())
console.log(arr)
```

```
shubham
[ 'suyash', 'yash', 'mohit', 'priyanka' ]
suyash
[ 'yash', 'mohit', 'priyanka' ]
```

In [18]:
```
//splice => add/remove specific pos

//splice => (startIndex,  deleteCount, ...elements)
var arr = [ 'suyash', 'yash', 'mohit', 'priyanka', 'shubham' ]
//delete

arr.splice(2, 1)
console.log(arr)


//add
arr.splice(2, 0, "suyash", "shubham")
console.log(arr)
```

```
[ 'suyash', 'yash', 'priyanka', 'shubham' ]
[ 'suyash', 'yash', 'suyash', 'shubham', 'priyanka', 'shubham' ]
```

In [24]:
```
//finding


//indexOf  => array of premetive values
// element to search in index, if item found then returns it's index otherwise -1
var arr = [ 'suyash', 'yash', 'suyash', 'shubham', 'priyanka', 'shubham' ]

console.log(arr.indexOf('suyash'))




var query = "abc"
if(arr.indexOf(query) != -1){
    console.log("avl")
}else{
    console.log("not avl")
}



//lastIndexOf()
console.log(arr.lastIndexOf("suyash"))
```

```
0
not avl
2
```

In [27]:
```
//includes  => (search, fromIndex = 0)

var arr = [ 'suyash', 'yash', 'suyash', 'shubham', 'priyanka', 'shubham' ]

console.log(arr.includes("suyash", 3 ))
```

```
false
```

In [33]:
```
var items = [
    {name:"x", brand:"apple"},
    {name:"ZE", brand:"Huawei"},
    {name:"S", brand:"samsung"}
]


var ind = items.indexOf({name:"S", brand:"samsung"})
console.log(ind)


//find
var el = items.find((e)=>{
   return  e.brand == "samsung"
})


//findIndex
var ind = items.findIndex((e)=>{
   return  e.brand == "samsung"
})


console.log(ind)
```

```
-1
2
```

In [36]:
```
//map  => return new array, after performing given function on each element of that array



var arr = [1, 2, 3]

var newAre = arr.map(el=>{
    return el%2 == 0
})

console.log(newAre)
```

```
[ false, true, false ]
```

In [37]:
```
//find final price

var items = [
    {name:"x", brand:"apple", price:5454, sale_price:""},
    {name:"ZE", brand:"Huawei", price:3434, sale_price:2345},
    {name:"S", brand:"samsung", price:3212, sale_price:""}
]


var newItems = items.map(item=>{
   item.final_price = item.sale_price == "" ? item.price : item.sale_price
    return item

})


console.log(newItems)
```

```
[
  {
    name: 'x',
    brand: 'apple',
    price: 5454,
    sale_price: '',
    final_price: 5454
  },
  {
    name: 'ZE',
    brand: 'Huawei',
    price: 3434,
    sale_price: 2345,
    final_price: 2345
  },
  {
    name: 'S',
    brand: 'samsung',
    price: 3212,
    sale_price: '',
    final_price: 3212
  }
]
```

In [40]:
```
//filter => new array of element for which callback returns true
var items = [
    {name:"x", brand:"apple", price:5454, sale_price:""},
    {name:"ZE", brand:"Huawei", price:3434, sale_price:2345},
    {name:"S", brand:"samsung", price:3212, sale_price:""},
    {name:"x", brand:"apple", price:5454, sale_price:""},

]

var newItems = items.filter(el=>{
    return el.brand == 'apple'
})

console.log(newItems)
```

```
[
  { name: 'x', brand: 'apple', price: 5454, sale_price: '' },
  { name: 'x', brand: 'apple', price: 5454, sale_price: '' }
]
```

In [42]:
```
console.log(Array.isArray("suyash"))
```

```
false
```

In [ ]:
```
// 1) var arr = [1, 2, [3, 4], 5]  => [1, 2, 3, 4, 5]

// 2)
// var arr1 =  [1, 2, 3, 4]
// var arr2 =  [2, 4, 5, 6]
// union =>       [1, 2, 3, 4, 5, 6]
// intersection=> [2, 4]
// element present in a but not in b  => [1, 3]
// element present in b but not in a => [5, 6]


// 3) var arr = [10, 30,  10, 35, 35, 10 , 20, 20, 20]
// var count = {10:3, 30:1, 35:2, 20:3}
```

In [4]:
```
// 1) var arr = [1, 2, [3, 4], 5, [6, 7]]  => [1, 2, 3, 4, 5]

var arr = [1, 2, [3, 4], 5, [6, 7], [8 ,9] ,10]
var flat = []

arr.forEach(e=>{
    if(Array.isArray(e)){
        e.forEach(fe=>{
            flat.push(fe)
        })
    }else{
        flat.push(e)
    }
})



console.log(flat)
```

```
[
  1, 2, 3, 4,  5,
  6, 7, 8, 9, 10
]
```

In [61]:
```
var arr = [1, 2, [3, 4], 5, [6, 7, [8, 9]]]

var flatten = arr.flat(2)
console.log(flatten)
```

```
[
  1, 2, 3, 4, 5,
  6, 7, 8, 9
]
```

In [12]:
```
var arr1 =  [1, 2, 3, 4, 1]
var arr2 =  [6, 2, 4, 5, 6]
// union =>       [1, 2, 3, 4, 5, 6]


var concated = arr1.concat(arr2)


var union = []

concated.forEach(e=>{
    if(!union.includes(e)){
        union.push(e)
    }
})


console.log(union)
```

```
[ 1, 2, 3, 4, 6, 5 ]
```

In [38]:
```
// 3) var arr = [10, 30,  10, 35, 35, 10 , 20, 20, 20]
// var count = {10:3, 30:1, 35:2, 20:3}

 var arr = [10, 30,  10, 35, 35, 10 , 20, 20, 20, 19, 20]

 var count = {}

arr.forEach(el=>{
    if(el in count){
        count[el] += 1
    }else{
        count[el] = 1
    }
})


console.log(count)
```

```
{ '10': 3, '19': 1, '20': 4, '30': 1, '35': 2 }
```

In [ ]:

In [20]:
```
// sort
var arr = [1, 2, 3, 10, 20, 30]

// param1 param2
// +ve => param1 > param2
// -ve => param1 < param2
// zero => param1 == param2

arr.sort((el1, el2)=>{
//     if(el1 > el2){
//         return 1
//     }else if(el1 < el2){
//         return -1
//     }else{
//         return 0
//     }

    return el2-el1
})

console.log(arr)
```

```
[ 30, 20, 10, 3, 2, 1 ]
```

In [29]:
```
var students = ["yash", "priyanka", "mohit", "shubham"]
students.sort((el1, el2)=>{
    if(el1 > el2){
        return -1
    }else if(el1 < el2){
        return 1
    }else{
        return 0
    }
})
console.log(students)
```

```
[ 'yash', 'shubham', 'priyanka', 'mohit' ]
```

In [30]:
```
var students = ["yash", "priyanka", "mohit", "shubham"]
students.sort((el1, el2)=>{
   return el1.length - el2.length
})
console.log(students)
```

```
[ 'yash', 'mohit', 'shubham', 'priyanka' ]
```

In [18]:
```
var items = [
    {title:"32' LED", brand:"DELL", price:34000},
        {title:"32' LED", brand:"DELL", price:4500},
        {title:"32' LED", brand:"DELL", price:23000},
        {title:"32' LED", brand:"DELL", price:34000},
    {title:"32' LED", brand:"DELL", price:1200},
]


items.sort((item1, item2)=>{
    return item1.price - item2.price
})


console.log(items)
```

```
[
  { title: "32' LED", brand: 'DELL', price: 1200 },
  { title: "32' LED", brand: 'DELL', price: 4500 },
  { title: "32' LED", brand: 'DELL', price: 23000 },
  { title: "32' LED", brand: 'DELL', price: 34000 },
  { title: "32' LED", brand: 'DELL', price: 34000 }
]
```

In [41]:
```
//reduce => reduce array into a single value


var arr = [1, 2, 3, 4]

//acc = 1



//reducer => acc current => return val => acc


var res = arr.reduce((acc, current)=>{
    console.log(`acc : ${acc}  current : ${current}`)
    return acc+current
}, 0)

console.log(res)
```

```
acc : 0  current : 1
acc : 1  current : 2
acc : 3  current : 3
acc : 6  current : 4
10
```

In [47]:
```
var items = [
    {title:"32' LED", brand:"DELL", price:34000},
        {title:"32' LED", brand:"DELL", price:4500},
        {title:"32' LED", brand:"DELL", price:23000},
        {title:"32' LED", brand:"DELL", price:34000},
    {title:"32' LED", brand:"DELL", price:1200},
]


var cheapest = items.reduce((acc, current)=>{
    return acc.price < current.price ? acc : current
})

console.log(cheapest)


var min = items[0]
items.forEach(el=>{
    if(el.price < min.price ){
        min = el
    }
})

console.log(min)
```

```
{ title: "32' LED", brand: 'DELL', price: 1200 }
{ title: "32' LED", brand: 'DELL', price: 1200 }
```

In [46]:
```
var a =  null //
console.log(typeof(a))
// number
// string
// boolean
// undefined
// null
```

```
boolean
```

In [50]:
```
//slice

var arr = [ 30, 20, 10, 3, 2, 1 ]

var sliced = arr.slice(1, -1)

console.log(sliced)
```

```
[ 20, 10, 3, 2 ]
```

In [57]:
```
var mblNums = ['7575775755',
               '7575775756',
               '7575775757',
               '7575775758',
               '7575775759',
               '7575775760',
               '7575775761',
               '7575775762']

var api = "msg.codiotic.com/send?numbers=num1,num2,num3"

var calls = []

for(var i = 0; i<mblNums.length; i+=3){
    var tmp = mblNums.slice(i, i+3)
    //chunks.push(tmp)
    var nums = tmp.join(',')
    calls.push(`msg.codiotic.com/send?numbers=${nums}`)
}

console.log(calls)
```

```
[
  'msg.codiotic.com/send?numbers=7575775755,7575775756,7575775757',
  'msg.codiotic.com/send?numbers=7575775758,7575775759,7575775760',
  'msg.codiotic.com/send?numbers=7575775761,7575775762'
]
```

In [52]:
```
var chr = ['s', 'u', 'y', 'a', 's', 'h']
var joined = chr.join("")
console.log(joined)
```

```
suyash
```

In [64]:
```
// .every()
// .some()
// .from()  => converts iterable values into array

//document.querySelectorAll(".nav") // Array.from(nodelist)

var voters = [19, 21, 39, 34, 17]


var allVoters = voters.some(el=>el>=18)

console.log(allVoters)
```

```
true
```

In [65]:
```
var arr = Array.from("suyahs")
console.log(arr)


// var arr = []
// var array = new Array()
// var arr1 = Array.from()
```

```
[ 's', 'u', 'y', 'a', 'h', 's' ]
```

In [69]:
```
var arr = [19, 21, 39, 34, 17]
arr.reverse()
console.log(arr)


console.log(Array.from(arr.keys()))
console.log(Array.from(arr.values()))
```

```
[ 17, 34, 39, 21, 19 ]
[ 0, 1, 2, 3, 4 ]
[ 17, 34, 39, 21, 19 ]
```