Array Methods:

```
Assay is data structure used to store multiple
   values of any data type sequently.
  Features of the tarray: -
  1. Oxy collections
  2. Homogenous of hetrogenous (mixed -dutatypes)
  3. Muttable
 4 - Dynamic Size
 5. Multi Simensional Agay.
 Creating Assays:
we can create an assay using Square bracker []
  and separating the elements with commes.
 Ex- let as = [1, 2, "Atml", + CSS"]
 Accessing Elements:
  you can access clements of an assay using square brackets
  and the index of the element. Remember that array
  indeps . Start at 0.
ext consoleolog (assoi); // /
 console log (an(3)); 11 css
Modifying Elements:
   You can modify elements in a assay by assigning a new
   value to a specific intex.
EX:-
   consoleolog (ass); / [1, 'is', 'html', 'css']
```

dynamic Size! we can incresse assay size tyramically 6x: vag ass = ["heeks", "woold", 2]; ass(3) = 3; console-log (ass); "hello", "work", 2,3]

Multidimensional Assay!-

Ex: Vas as =[1,2,3, [4,5, [6,7,8]]]; console. 10] (ass[3][2][2]);

Assay Methoda :-

Java script provides many built in methods to work with assays such as push pop, shift, unshift, slice, silce, concer, index Of, includes, al many more

1. Assay length: length property setups the number of Elements in an Assay Ex!-let asg = [1,2, "Helm", "CSS] consolering (asselength); 1/4

2. Assay at():-The all, method of Assay instance takes an httges value and setuens the item at the index, allowing for positive and regative integers. Negative integers count back from the last item of an assay

* Point last index value of argay (length -1) Roof Console. 109 (an [an-length -]);

Example:

let as =[1, 2, 3, 4; console 103 (assert(0)); 1/ 1 console. bg (ass. at (-1)); 1/4

```
3. Concat (): - method to used to meage two and one more
          assays. It does not modify the existing assays
          but instead retugns a new away containing the
          elements of orginal arrays consistential together
       Vag ass1 = [1, 2, 3]
        Vas as12 - [a1, 161, 161]
      Console log (assi o contat (ass2); 1/[12,3, &, 6,6]
· loops in assays:-
     Vas a = [1, 2, 3, 4, 5, 6, 7,8]
    for (i=0; izasselength; i++){
          console log (ass[i]);
   for ( i in ass) {
         console log [i);
4. Assay Splice ():-
   Splice() method is used to change the contents of an assay
  by semoving as seplacing existing elements and la adding
  new elements in place.
 · It modifies the original array and relian an array
  containing the removed elements.
Systax:
   assay. Splice ( start Indox, end Index, add item 1, add item 1);
Example ? - 11 adding at specific index.
    vag asg = ["html", "css", "Js", "react"]
     aux. spice (1,0, "bootsteap");
    Gostal Console log(ass); ([Litm, booteap, C58, JS, sand)
```

11 septions at a specific index

ass. splice (1,1, "bootstap");

consoleolog (ass); II [went, bootstap, Js, ocact]

il septicing all statues at a time.

ass. splice (0,4, "Java", "python", "Assess", "my sql");

consoleolog (ass); [Tava, Rython, nodess, my sql].

5. Assay Slicel !-

slice () method is used to extact section of an elementary and setupos a new agay containing the extracted elements.

Syntax: - assay. slice (start Intex, end Tatex);

Example: - vas asg = ["html", "css", "js", "seact"]

Vas ass2 = assoslice (0,2);

console e (og (ass2); 11 [html, css]

Vay ass2 = ass, slice (-1); console, log (ass2); || [sex+]

6. Assay Pop():-

Pop method semoves the last element from an assay of seturns the element.

Push method adds one once more elements to the end of an away and retains pero length of agay.

Example:-

" as Pop (); Il ['what, css, Js];

as push ("git");

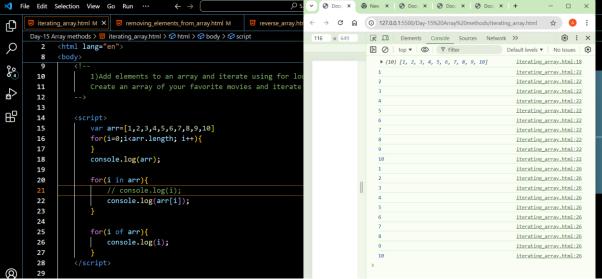
console. log (aes); Il [html, css, Js, git]

```
8. Assay Shift ();
    shift method () is used to remove the first element
    of an array and settins that dement.
9. Assay unshift();
    unshift method adds one of mose elements to the
    beginning of an assay al return new length of an
    assay.
  Example:-
     Vag asg = ["html", "css", "Js", "React"];
    assoshipt(); 1/ [ css, us, React]
    ass. unshipt ("git"); // Chine "git", "html", "css", "us", Raw
10. Assay Sost a reverse methods:
      189.508+ ();
     ass. reverse ();
 Examples:- ·
  Vag ass = [9,3,4,67];
    console log( ces . 50x+ ());
    output: 3, 4, 67, 9 [Lero gapphiras oxides it takes outs
fixe letter. Johan elevant.
reverse Example:
   Yaq an = ["html", "css", "Js"].
   console. log (ass . severse (); [[is, css, went]
Problem: - Deverge an assay and push into the new array
  vay a = [ "html" ,"css", "Js", "React"]
  Vay new = []
   for ( 1=a > length - 1; 120; 1-){
            consoleolog ( a[i]);
            new . push (aci ]);
      console , log ( new) , II [ React, Js, Css, html]
```

TASKS:

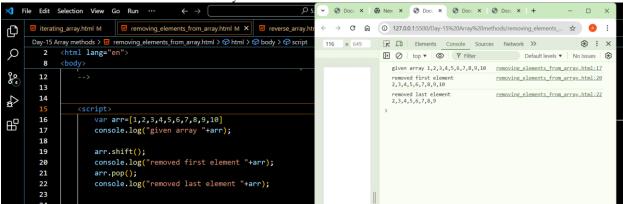
1)Add elements to an array and iterate using for loop and for in loop and for of loop

Create an array of your favorite movies and iterate an array to the console.



2)Remove elements from an array

Remove the first and last elements from the array.



3)Reverse an array using for loop

Hints: use push method

```
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    □ removing_elements_from_array.html M
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              <head>
                                                                                                     ▶ (5) ['git', 'react', 'js', 'css', 'html'] reverse_array.html:21
                   <meta name="viewport" content="width=device-width, init</pre>
00
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                 <title>Document</title>
              </head>
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                      3)Reverse an array using for loop
        12
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                      var arr=['html','css','js','react','git']
var rev=[]
        16
        17
        18
                       for(i=arr.length-1;i>=0;i--){
        19
                          rev.push(arr[i]);
        20
        21
                       console.log(rev);
```

4) find the even and odd numbers in an array [12,3,5,6,22,56,29]

and print the even numbers array and the sum of add and odd numbers array and the sum of even

```
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     Day-15 Array methods > 5 even_odd_in_array.html > ♦ html > ♦ body > ♦ script
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             <html lang="en"
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                                                                                       12 is even number
                                                                                                      even odd in array.html:20
even odd in array.html:20
even odd in array.html:20
004
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                <script>
   var esum=0;
                                                                                       6 is even number
                   var osum=0;
                                                                                       56 is even number even_odd_in_array.html:20
96 is the total count of even numbers even_odd_in_array.html:24
3 is odd number
$
                    for(i=0;i<a.length;i++){</pre>
                       if(a[i]%2==0){
                                                                                                     even_odd_in_array.html:29
品
       20
21
                           console.log(a[i]+ " is even number");
                                                                                                       even_odd_in_array.html:29
                                                                                       5 is odd number
                           esum=esum+a[i];
                                                                                                                      even_odd_in_array.html:29
       22
                                                                                       37 is the total count of odd numbers
                                                                                                                      even_odd_in_array.html:33
       23
       24
25
                    console.log(esum+" is the total count of even number
       26
27
                    for(i=0;i<a.length;i++){
                       if(a[i]%2!=0){
    console.log(a[i]+ " is odd number");
       28
29
       30
                           osum=osum+a[i];
       32
                    console.log(osum +" is the total count of odd numb
       33
```

5) Take a heterogeneous array and separate each data type into new array

hints: use loop, typeof and push method

```
inp: let arr = ["apple", "banana", "mango", "banana", 3, 4, 5, 6, true, {name: "object"}];
```

out:

num=[3,4,5,6]

str=["apple","banana","mango","banana"]

bool=[true]

obj=[{name: "object"}]

```
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                                                                                                                                          → C 🙃 ① 127.0.0.1:5500/Day-15%20Array%20methods/heterogeneous_arra... 🖈 💪 🚼
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                                                                                                                                     200
                                                                                                                                                                   ▼ (4) [3, 4, 5, 6] €

Θ: 3

1: 4

2: 5

3: 6
$
BB
                                 d=[];
=0;i<arr.length;i++){
f(typeof arr[i] =='numl
    num.push(arr[i]);</pre>
                                                                                                                                                                       ▶ [[Prototype]]: Array(0)
                                                                                                                                                                   ▼ (4) ['apple', 'banana', 'mango', 'banana']  

1: "apple"

1: "banana"

2: "mango'

3: "banana"
                                  ise if(typeof arr[i] =='string'){
  str.push(arr[i]);
                                                                                                                                                                     length: 4

▶ [[Prototype]]: Array(0)
                                   e if(typeof arr[i] =='boolean'){
bool.push(arr[i]);
                                                                                                                                                                    ▼ [true] [i
    0: true
    length: 1
    ▶ [[Prototype]]: Array(θ)
                                                                                                                                                                                                                           heterogeneous_array.html:46
                                 lse if(typeof arr[i] =='object'){
  obj.push(arr[i]);
                                                                                                                                                                     ▼ [{...}] ( 

► 0: {name: 'object'} 

length: 1 

► [[Prototype]]: Array(0)
                                                                                                                                                                                                                           heterogeneous_array.html:47
                                                                                                                                                                    ▼[] (
length: 0
▶ [[Prototype]]: Array(0)
                                                                                                                                                                                                                           heterogeneous_array.html:48
```