Dt:- 18-09-24

11. Array toString():-

toString() method is used to convert an array to string. this method converts each elements of an array to string then concatenates them together, separating each element with a comma.

Example:-

```
Var arr = [1,2,3,"hello"];
console.log(arr.toString());
```

O/P:- 1,2,3,hello

12. Array join:-

join() method is used to join the element of an array with a different seperator, you can use the join() method, passing the desired seperator as an argument.

Example:-
```
Var arr = [1,2,3,"hello"];
console.log(arr.join("-"));
```

O/P:- 1-2-3-hello

13. Array copyWithin():-

copyWithin() method copies a sequence of elements within the array to the position starting at the target index.

Example:-
```
let arr = [10,20,30,40,50];
console.log(arr.copyWithin(0,3));
// O/P:- 40 50 30 40 50
console.log(arr.copyWithin(1,3));
// O/P:- 10 40 50 40 50
```

```
console.log ( arr.copyWithin (0,3,4));
// o/p:- 40 20 30 40 50

console. log (arr. copy Within (1, 2,4));
//o/p:- 10 30 40 40 50

var arr =["a", "b", "c", "d", "e", "f"];
console.log (arr. copy Within (0,4,5));
//o/p:- [e, b, c, d, e, f]
```

14. Array flat() :-

flat() method creates a new array with all sub-array elements concatenated into it recursively up to the specified depth.

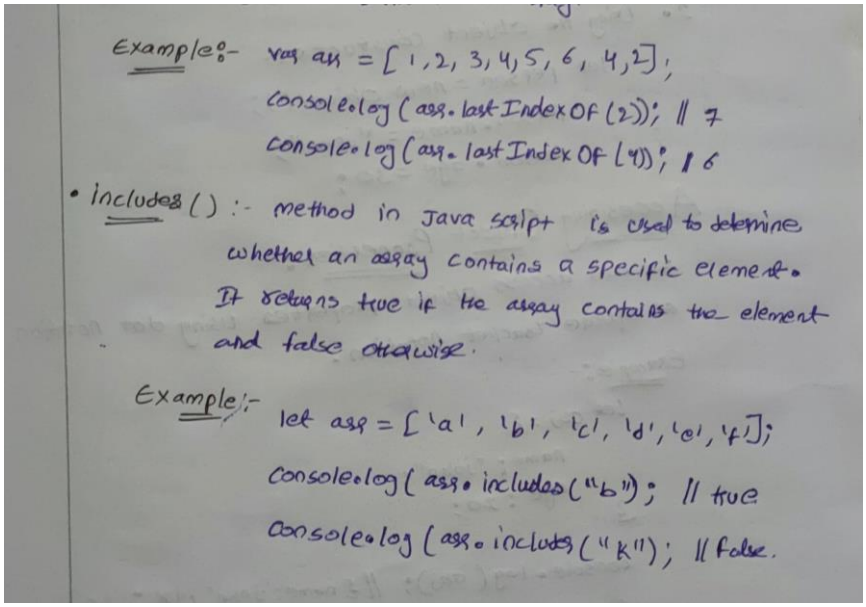
```
var arr =[1, 2, 3, [4,5, [6,7, [8,9]]]];
var b = arr.flat ()
console.log( b);
//o/p:-[1,2, 3,4, 5, Array [3]]
```

Search Methods :-

- indexOf(): method in JS is used to search an element within an array. it returns the index of the first occurance of the specified element or -1 if the element is not found.

  Example:-
  ```
  var arr = [1,2, 3, [4,5]];
  console.log (arr. indexOf ([4,5])); //-1
  console.log (arr. indexOf (3)); // 2
  ```

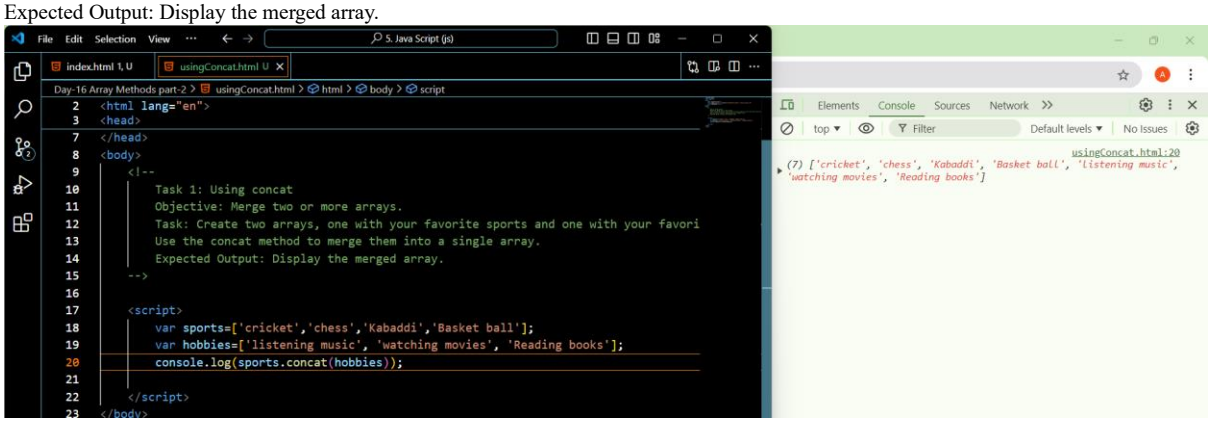
- lastIndexOf ():- method in JS is similar to the indexOf() method, but it searches for the last occurence of a specified element with in an array.



TASKS:

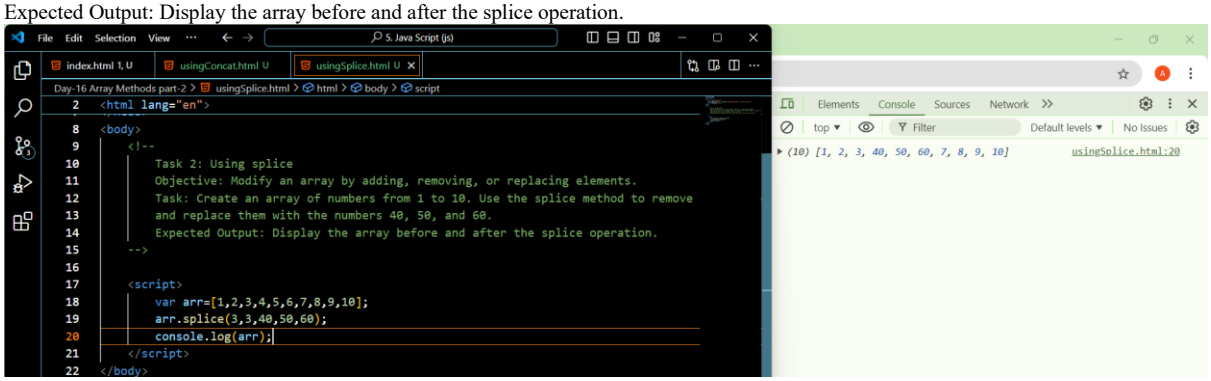
Task 1: Using concat

Objective: Merge two or more arrays.
Task: Create two arrays, one with your favorite sports and one with your favorite hobbies. Use the concat method to merge them into a single array.
Expected Output: Display the merged array.



Task 2: Using splice

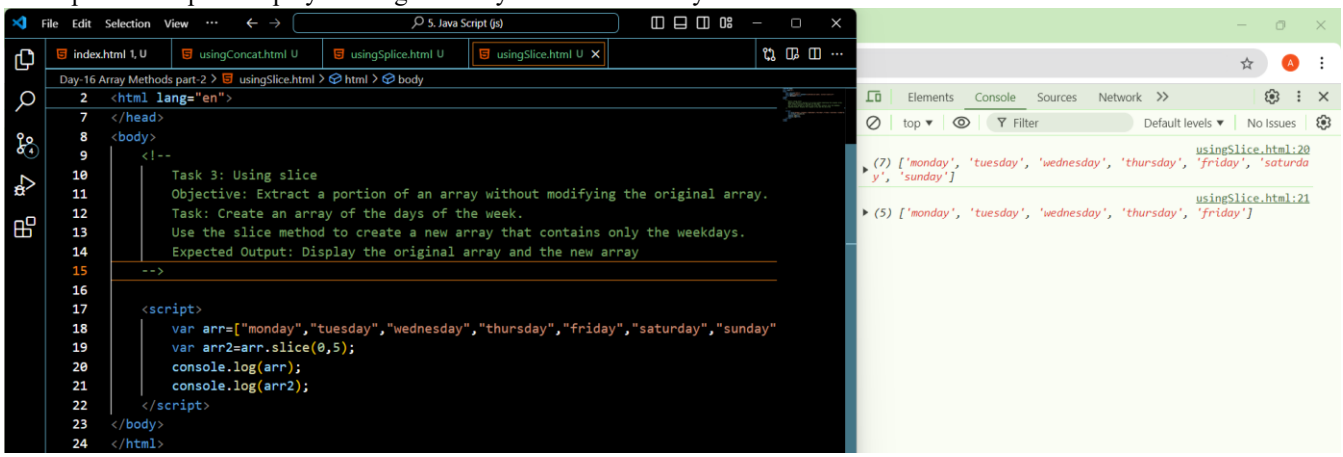
Objective: Modify an array by adding, removing, or replacing elements.
Task: Create an array of numbers from 1 to 10. Use the splice method to remove the numbers 4, 5, and 6, and replace them with the numbers 40, 50, and 60.
Expected Output: Display the array before and after the splice operation.



Task 3: Using slice

Objective: Extract a portion of an array without modifying the original array.
Task: Create an array of the days of the week. Use the slice method to create a new array that contains only the weekdays.

Expected Output: Display the original array and the new array.



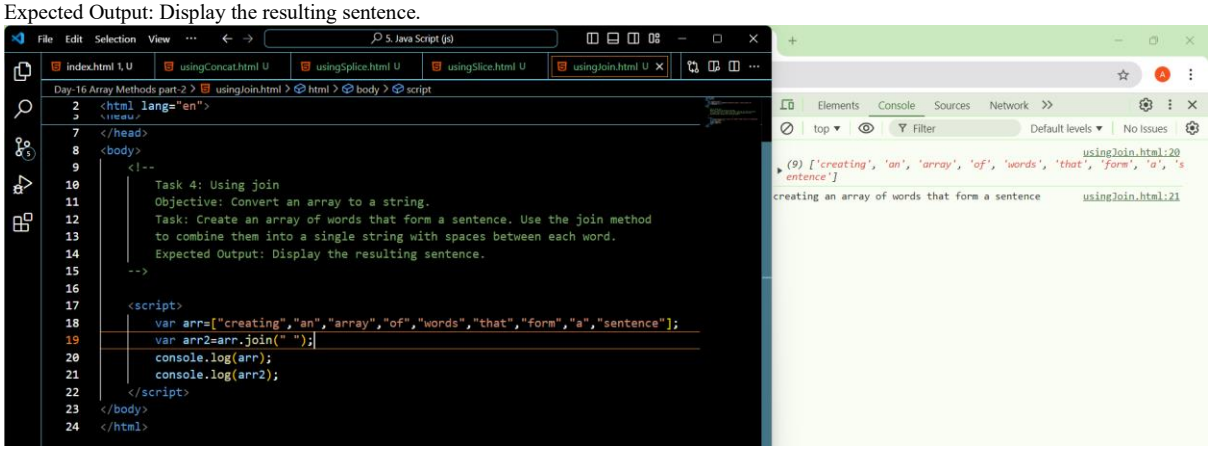
```
<html lang="en">
</head>
<body>
    <!--
        Task 3: Using slice
        Objective: Extract a portion of an array without modifying the original array.
        Task: Create an array of the days of the week.
        Use the slice method to create a new array that contains only the weekdays.
        Expected Output: Display the original array and the new array
    -->

    <script>
        var arr=["monday","tuesday","wednesday","thursday","friday","saturday","sunday"
        var arr2=arr.slice(0,5);
        console.log(arr);
        console.log(arr2);
    </script>
</body>
</html>
```

```
(7) ['monday', 'tuesday', 'wednesday', 'thursday', 'friday', 'saturday', 'sunday']
(5) ['monday', 'tuesday', 'wednesday', 'thursday', 'friday']
```

Task 4: Using join

Objective: Convert an array to a string.
Task: Create an array of words that form a sentence. Use the join method to combine them into a single string with spaces between each word.
Expected Output: Display the resulting sentence.



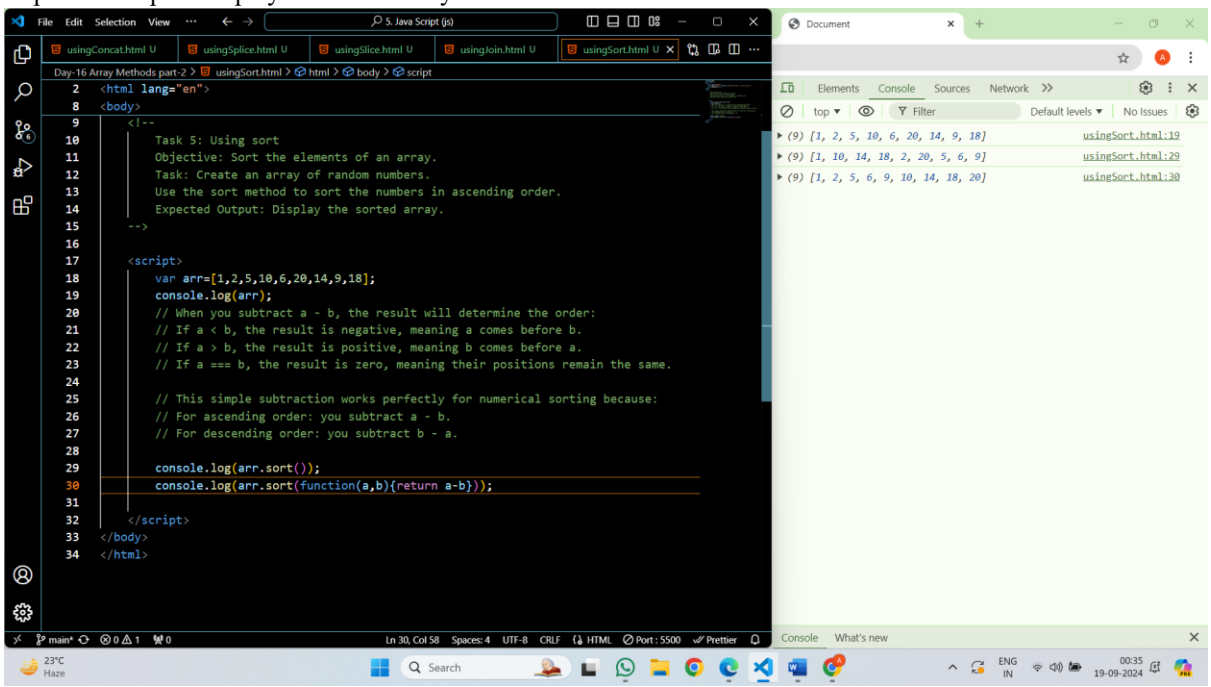
```
<html lang="en">
</head>
<body>
    <!--
        Task 4: Using join
        Objective: Convert an array to a string.
        Task: Create an array of words that form a sentence. Use the join method
        to combine them into a single string with spaces between each word.
        Expected Output: Display the resulting sentence.
    -->

    <script>
        var arr=["creating","an","array","of","words","that","form","a","sentence"];
        var arr2=arr.join(" ");
        console.log(arr);
        console.log(arr2);
    </script>
</body>
</html>
```

```
(9) ['creating', 'an', 'array', 'of', 'words', 'that', 'form', 'a', 'sentence']
creating an array of words that form a sentence
```

Task 5: Using sort

Objective: Sort the elements of an array.
Task: Create an array of random numbers. Use the sort method to sort the numbers in ascending order.
Expected Output: Display the sorted array.



```
<html lang="en">
<body>
    <!--
        Task 5: Using sort
        Objective: Sort the elements of an array.
        Task: Create an array of random numbers.
        Use the sort method to sort the numbers in ascending order.
        Expected Output: Display the sorted array.
    -->

    <script>
        var arr=[1,2,5,10,6,20,14,9,18];
        console.log(arr);
        // When you subtract a - b, the result will determine the order:
        // If a < b, the result is negative, meaning a comes before b.
        // If a > b, the result is positive, meaning b comes before a.
        // If a === b, the result is zero, meaning their positions remain the same.

        // This simple subtraction works perfectly for numerical sorting because:
        // For ascending order: you subtract a - b.
        // For descending order: you subtract b - a.

        console.log(arr.sort());
        console.log(arr.sort(function(a,b){return a-b}));

    </script>
</body>
</html>
```

```
(9) [1, 2, 5, 10, 6, 20, 14, 9, 18]
(9) [1, 10, 14, 18, 2, 20, 5, 6, 9]
(9) [1, 2, 5, 6, 9, 10, 14, 18, 20]
```