# EXCERCISE

1. What will the code below output to the console and why?

```
var arr1 = "john".split('');
 var arr2 = arr1.reverse();
var arr3 = "jones".split('');
 arr2.push(arr3);
console.log("array 1: length=" + arr1.length + " last=" + arr1.slice(-1));
console.log("array 2: length=" + arr2.length + " last=" + arr2.slice(-1));
```

   **Answer**: The logged output will be:
    "array 1: length=5 last=j,o,n,e,s"
    "array 2: length=5 last=j,o,n,e,s" arr1 and arr2 are the same after the above code is executed for the following reasons: Calling an array object's reverse() method doesn't only return the array in reverse order, it also reverses the order of the arrayitself (i.e., in this case, arr1). The reverse() method returns a reference to the array itself (i.e., in this case, arr1). As a result, arr2 is simply a reference to (rather than a copy of) arr1. Therefore, when anything is done to arr2 (i.e., when we invoke arr2.push(arr3);), arr1 will be affected as well since arr1 and arr2 are simply references to the same object

2. What is the use of the Push method in JavaScript?
   The push method is used to add or append one or more elements to an Array end. Using this method, we can append multiple elements by passing multiple arguments.

3. What is the unshift method in JavaScript?
   Unshift method is like the push method, which works at the beginning of the array. This method is used to prepend one or more elements to the beginning of the array.

4. How are object properties assigned?
   Properties are assigned to objects in the following way –
   obj ["class"] = 12;
   or
   obj.class = 12;

5. How can a value be appended to an array?

   A value can be appended to an array in the given manner –

   arr[arr.length] = value;

6. What is for-in loop in Javascript?
   The for-in loop is used to loop through the properties of an object.
   The syntax for the for-in loop is –
   for (variable name in object){
      statement or block to execute
   }
   In each repetition, one property from the object is associated with the variable name. The loop is continued till all the properties of the object are depleted.

7.  How are object properties assigned?
   Assigning properties to objects is done in the same way as a value is assigned to a variable. For example, a form object's action value is assigned as 'submit' in the following manner – Document. form.action="submit"

8. What is the unshift() method?
   This method is functional at the starting of the array, unlike the push(). It adds the desired number of elements to the top of an array. For example –
   var name = [ "john" ];
   name.unshift( "charlie" );
   name.unshift( "joseph", "Jane" );
   console.log(name);
   The output is shown below:
   [" joseph "," Jane ", " charlie ", " john "]

9. What are the important JavaScript Array Method explain with example?

   **JavaScript Array Methods**
   The Array object has many properties and methods which help developers to handle arrays easily and efficiently. You can get the value of a property by specifying arrayname.property and the output of a method by specifying arrayname.method().

- **length property** –> If you want to know the number of elements in an array, you can use the length property.
- **prototype property** –> If you want to add new properties and methods, you can use the prototype property.
- **reverse method** –> You can reverse the order of items in an array using a reverse method.
- **sort method –>** You can sort the items in an array using sort method.
- **pop method** –> You can remove the last item of an array using a pop method.
- **shift method** –> You can remove the first item of an array using shift method.
- **push method** –> You can add a value as the last item of the array.

```html
<html>
<head>
<title>Arrays!!!</title>
<script type="text/javascript">
    var students = new Array("John", "Ann", "Aaron", "Edwin", "Elizabeth");
Array.prototype.displayItems=function(){
    for (i=0;i<this.length;i++){
document.write(this[i] + "<br />");
    }
  }
document.write("students array<br />");
students.displayItems();
document.write("<br />The number of items in students array is " + students.length + "<br />");
document.write("<br />The SORTED students array<br />");
students.sort();
students.displayItems();
document.write("<br />The REVERSED students array<br />");
students.reverse();
students.displayItems();
document.write("<br />THE students array after REMOVING the LAST item<br />");
students.pop();
students.displayItems();
                document.write("<br />THE students array after PUSH<br />");
students.push("New Stuff");
students.displayItems();
```

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

10. What a pop()method in JavaScript is?

The pop() method is similar to the shift() method, but the difference is that the Shift method works at the array's start. The pop() method takes the last element off of the given array and returns it. The array on which it is called is then altered.
Example:
var cloths = ["Shirt", "Pant", "TShirt"];
cloths.pop();
//Now cloth becomes Shirt,Pant

11. What is this [[[]]]?

This is a three-dimensional array.
var myArray = [[[]]];

12. What is the output of "10"+20+30 in JavaScript?

102030

because after a string all the + will be treated as string concatenation operator (not binary +).

```
function display()
{
 document.writeln("10"+20+30);
}
display();
```

13. How to create objects in JavaScript?

There are 3 ways to create an object in JavaScript.
1. By object literal
2. By creating an instance of Object
3. By Object Constructor

Let's see a simple code to create an object using object literal.
1. emp={id:102,name:"Rahul Kumar",salary:50000}

14. How to create an array in JavaScript?

There are 3 ways to create an array in JavaScript.
1. By array literal
2. By creating an instance of Array
3. By using an Array constructor