* Declare and initialize an empty array

We are calling Array.prototype.forEach with a callback function:

we can pass another function (the callback) to forEach as an argument.

We use the multi-dimensional array [[1, 2], [3, 4]] to call forEach

We use the multi-dimensional array [[],[]] to call Array.prototype.map with a callback function

Each inner array is passed to the callback, in turn, and assigned to the parameter arr.

We then use the element reference operator, [], to get the value at index 0 of the array.

On the first invocation of the callback, arr[0] returns 1, and on the second, it returns 3.

In each invocation, console.log outputs a string representation of the value returned by arr[0]

Since this is a single statement callback, the callback's return value is the return value of console.log(arr[0]), which is undefined.

forEach doesn't do anything with that returned value though

 no matter what the callback returns, forEach always returns undefined.

map uses the return value of the callback to perform a transformation.

IF NO RETURN VALUE OF THE CALLBACK IN A MAP METHOD, THEN THE RETURNED NEW ARRAY WILL HAVE UNDEFINED IN EACH ELEMENT – [1,2,3].map(elm => console.log(elm)); RETURNS [undefined, undefined]

slice() extracts a part of a string and returns the extracted part in a new string.

The **split()** method divides a [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) into an ordered list of substrings, puts these substrings into an array, and returns the array.  The division is done by searching for a pattern; where the pattern is provided as the first parameter in the method's call.

An object is a collection of properties, and a property is an association between a name (or *key*) and a value. A property's value can be a function, in which case the property is known as a method.

The **splice()** method changes the contents of an array by removing or replacing existing elements and/or adding new elements [in place](https://en.wikipedia.org/wiki/In-place_algorithm).  
It returns an array containing the deleted elements.

The reduce() method executes a reducer function (that you provide) on each element of the array, resulting in a **single output value**.

The find() method returns the value of the first element in the provided array that satisfies the provided testing function. If no values satisfy the testing function, [undefined](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/undefined) is returned.

he **some()** method tests whether at least one element in the array passes the test implemented by the provided function. It returns true if, in the array, it finds an element for which the provided function returns true; otherwise it returns false. It doesn't modify the array.

When breaking down the example, pay close attention to:

* The return value of the callback
* The return value of the method
* Any side-effects

we're explicitly returning the first element of each subarray with return

The callback's return value is then used by map to perform the transformation, replacing the inner array with a number. Finally, map returns a new array with two numbers in it.

 the callback returns undefined since the callback doesn't explicitly return anything

method call (console.log) Outputs a string representation of a Number

the two map invocations and the callbacks within each of the invocations.

 map, which returns a new array containing values transformed based on the callback's return value

map returns a New transformed array

Array.prototype.map

- called on an array

- takes a callback function as an argument

- returns a new array in which each element is equal to the return value of the callback function for the element in the original array

Array.prototype.filter

- higher order function that takes in a callback function as an argument

- parameters of the callback: the element, the index and the original array

- calls the callback function for each element, passing that element as an argument to the callback

- returns that particular element into a new array if the callback returns a truthy value

- returns a new array