**Assignment**

Write workable code snippet for all the array functions given below.

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| Method & Description | | |
| 1. | [concat()](https://www.tutorialspoint.com/typescript/typescript_array_concat.htm)  Returns a new array comprised of this array joined with other array(s) and/or value(s). | let animals1 : string[] = ["Fish", "Goat", "Cat"];  let animals2 : Array<string> = ["Chicken","Horse" ,"Moose"];  var animals =animals1.concat(animals2);  console.log(`Animals : ${animals}`);  **Output**: Animals : Fish,Goat,Cat,Chicken,Horse,Moose |
| 2. | [every()](https://www.tutorialspoint.com/typescript/typescript_array_every.htm)  Returns true if every element in this array satisfies the provided testing function. | let arr = [11, 12, 13, 14, 15]  console.log(arr.every(element => element > 11));  **Output**: false |
| 3. | [filter()](https://www.tutorialspoint.com/typescript/typescript_array_filter.htm)  Creates a new array with all of the elements of this array for which the provided filtering function returns true. | let arr = [11, 12, 13, 14, 15]  console.log(arr.filter(element => element > 13));  var passed = [12, 5, 8, 130, 44].filter(element =>{console.log("hi"); return element >=10});  console.log(passed );  **Output**: false  hi,hi,hi,hi,hi[12,130,44] |
| 4. | [forEach()](https://www.tutorialspoint.com/typescript/typescript_array_foreach.htm)  Calls a function for each element in the array. | var sum = 0;  var numbers = [65, 44, 12, 4];  numbers.forEach(item => sum += item);  console.log(sum);  **Output**: 125 |
| 5. | [indexOf()](https://www.tutorialspoint.com/typescript/typescript_array_indexof.htm)  Returns the first (least) index of an element within the array equal to the specified value, or -1 if none is found. | var index = ["cat", "dog", "cow", "owl", "dragon"]  var location1 = index.indexOf("fish");  console.log("index of fish is : " + location1 );  var location2 = index.indexOf("cow");  console.log(`index of cow is : ${location2}` );  **Output**: -1,2 |
| 6. | [join()](https://www.tutorialspoint.com/typescript/typescript_array_join.htm)  Joins all elements of an array into a string. | let unjoined : string[] = ["I", "am", "now","joined."];  var joined = unjoined.join(" ");  console.log(joined);  **Output**: I am now joined. |
| 7. | [lastIndexOf()](https://www.tutorialspoint.com/typescript/typescript_array_lastindexof.htm)  Returns the last (greatest) index of an element within the array equal to the specified value, or -1 if none is found. | let indexed : number[] = [1,2,3,4,5,3,2,1,1,4];  var result = indexed.lastindexof(1);  console.log(`The last index of 2 is ${result}.`);  **Output**: The last index of 2 is 8. |
| 8. | [map()](https://www.tutorialspoint.com/typescript/typescript_array_map.htm)  Creates a new array with the results of calling a provided function on every element in this array. | var singles = ["person","place","thing"];  function pluralize(item:string){  return item + "s";  }  var pluraled = singles.map(pluralize);  console.log("Pluralized words are : " + pluraled );  **Output**: persons,places,things |
| 9. | [pop()](https://www.tutorialspoint.com/typescript/typescript_array_pop.htm)  Removes the last element from an array and returns that element. | var myArray = [1, 2, 3];  console.log(`Pre-pop is : ${myArray}\nWe remove ${myArray.pop()}\nPost-pop is : ${myArray}`);  **Output**: Pre-pop is : 1,2,3  We remove 3  Post-pop is : 1,2 |
| 10. | [push()](https://www.tutorialspoint.com/typescript/typescript_array_push.htm)  Adds one or more elements to the end of an array and returns the new length of the array. | var myArray = [1, 2, 3];  console.log(`Pre-push is : ${myArray}\nWe Add ${20}\nPost-push length is : ${myArray.push(20)}\nPost-push is : ${myArray}`);  **Output**: Pre-push is : 1,2,3  We Add 20  Post-push length is : 4  Post-push is : 1,2,3,20 |
| 11. | [reduce()](https://www.tutorialspoint.com/typescript/typescript_array_reduce.htm)  Apply a function simultaneously against two values of the array (from left-to-right) as to reduce it to a single value. | var total = ["a", "b", "c", "d"].reduce(function(a, b){ return a + b; });  console.log(total );  **Output**:abcd |
| 12. | [reduceRight()](https://www.tutorialspoint.com/typescript/typescript_array_reduceright.htm)  Apply a function simultaneously against two values of the array (from right-to-left) as to reduce it to a single value. | var total = [0, 1, 2, 3].reduceRight(function(a, b){ return a + b;});  console.log("total is : " + total );  **Output**:6 |
| 13. | [reverse()](https://www.tutorialspoint.com/typescript/typescript_array_reverse.htm)  Reverses the order of the elements of an array -- the first becomes the last, and the last becomes the first. | var word = 'Reverse';  let newWord : string;  const leng = word.length;  console.log(word.length);  let arrayWord : string[] = new Array(leng);  for(let i = 0;i<leng;i++){  arrayWord[i]=word.charAt(i);  }  newWord = arrayWord.reverse().join("");  console.log(`The orginal word was ${word} and the new one is ${newWord}.`);  **Output**: The orginal word was Reverse and the new one is esreveR. |
| 14. | [shift()](https://www.tutorialspoint.com/typescript/typescript_array_shift.htm)  Removes the first element from an array and returns that element. | var lst1 =[1,2,3,4];  console.log(`Old list was ${lst1}`);  var lst2 = lst1.shift();  console.log(`But now shifted is ${lst1} minus the ${lst2}.`);  **Output**: Old list was 1,2,3,4  But now shifted is 2,3,4 minus the 1. |
| 15. | [slice()](https://www.tutorialspoint.com/typescript/typescript_array_slice.htm)  Extracts a section of an array and returns a new array. | var lst =[1,2,3,4];  console.log(`Slicing my array at sclice(0,1) gets me ${lst.slice(0,2)}.`);  console.log(`Slicing my array at sclice(2,3) gets me ${lst.slice(2,4)}.`);  **Output**: Slicing my array at sclice(0,1) gets me 1,2.  Slicing my array at sclice(2,3) gets me 3,4. |
| 16. | [some()](https://www.tutorialspoint.com/typescript/typescript_array_some.htm)  Returns true if at least one element in this array satisfies the provided testing function. | var retval = [2, 5, 8, 1, 4].some(element => {return element >= 10;});  console.log("Returned value is : " + retval );  **Output**: Returned value is : false |
| 17. | [sort()](https://www.tutorialspoint.com/typescript/typescript_array_sort.htm)  Sorts the elements of an array. | var mixNumbs = [2, 5, 8, 1, 4];  var mixWords = ["zebra","shark,","cat","aunt"];  console.log(`Mixed numbers[${mixNumbs}] is now [${mixNumbs.sort()}]!`);  console.log(`Mixed numbers[${mixWords}] is now [${mixWords.sort()}]!`);  **Output**: Mixed numbers[2,5,8,1,4] is now [1,2,4,5,8]!  Mixed numbers[zebra,shark,,cat,aunt] is now [aunt,cat,shark,,zebra]! |
| 18. | [splice()](https://www.tutorialspoint.com/typescript/typescript_array_splice.htm)  Adds and/or removes elements from an array. | var arr = ["in", "in", "out", "in"];  console.log(`Out is out so [${arr}] gets ${arr.splice(2, 1, "in")} out and in in now in in [${arr}]!`);    **Output**: Out is out so [in,in,out,in] gets out out and in in now in in [in,in,in,in]! |
| 19. | [toString()](https://www.tutorialspoint.com/typescript/typescript_array_tostring.htm)  Returns a string representing the array and its elements. | var arr = [1,2,3,4];  console.log(`What was once an array [${arr}], is not a happy string "${arr.toString()}!`);  **Output**: What was once an array [1,2,3,4], is not a happy string "1,2,3,4! |
| 20. | [unshift()](https://www.tutorialspoint.com/typescript/typescript_array_unshift.htm)  Adds one or more elements to the front of an array and returns the new length of the array. | var arr = [2,3,4,5];  console.log(`An array that was only 4 long and held [${arr}] wanted a new friend 1 to join, so it called its friend unshift.`);  console.log(`The new array was now ${arr.unshift(1)} long and now was fill of [${arr}]!`);    **Output**: An array that was only 4 long and held [2,3,4,5] wanted a new friend 1 to join, so it called its friend unshift.  The new array was now 5 long and now was fill of [1,2,3,4,5]! |