

Ace your JavaScript Interview. [Get my ebook](#). 100 solved Javascript, 20 solved React, & 2 frontend system design questions (**1160+ copies sold**). Get a [Free preview](#).



Advertisements

# Find the maximum sum of products of two arrays.

Posted on [January 27, 2019](#) | by [Prashant Yadav](#)

Posted in [Algorithms](#), [Arrays](#) | Tagged [Easy](#)

An algorithm to find the maximum sum of products of two [arrays](#).

We will implement a simple algorithm in javascript to find the maximum sum of products of given two arrays. Both the arrays will be of the same length.

## Example

### Input:

[1, 2, 3]

[5, 4, 3]

[4, 7, 5, 2]

[2, 3, 2, 1]

### Output:

26 = 5 \* 3 + 4 \* 2 + 3 \* 1

41 = 7 \* 3 + 5 \* 2 + 4 \* 2 + 2 \* 1

Copy

Practically  
prepare for  
your  
JavaScript  
interview

[JavaScript  
Revision](#)

[JavaScript-  
Concept Based  
Problems](#)

[Data Structures](#)

[Algorithms](#)

[Machine  
Coding](#)

[Web  
Fundamentals](#)

## Implementation

- We will first sort both the arrays in any order.
- Then we will find the product of the each elements and add them.
- Everything will be written in [ES6](#).

[Copy](#)

```
let productSum = (arr1, arr2) => {  
  //sort the arrays in ascending order  
  arr1.sort();  
  arr2.sort();  
  
  let sum = 0;  
  
  //calculate the sum of the products  
  for(let i = 0; i < arr1.length; i++){  
    sum += arr1[i] * arr2[i];  
  }  
  
  return sum;  
}
```

[Copy](#)

**Input:**  
console.log(productSum([1, 2, 3], [5, 4, 3]));  
console.log(productSum([4, 7, 5, 2], [2, 3, 2, 1]));

**Output:**  
26  
41

Time complexity:  $O(n \log n)$ ;

Space complexity:  $O(1)$ ;

## Time and Space complexity

- We are sorting both the arrays which will take  $O(n \log n)$  then we are calculating the sum of the products of each element which will take  $O(n)$ , so Time complexity is  $O(n \log n)$ .
- We are using constant space, so Space complexity is  $O(1)$ .

[Prepare for your JavaScript Interview practically on each Interview rounds and grab that job.](#)

[BEGIN LEARNING](#)

## Recommended Posts:

[Find the intersection point of two linked list](#)[Flatten binary tree to linked list](#)[Learn how to reverse a linked list](#)[Merge two sorted linked list](#)[Combination sum problem](#)[LRU cache in Javascript](#)[Convert Roman numeral to an integer](#)[Swap two numbers without temp variables](#)[Insertion sort algorithm in javascript](#)[Find Least Common Ancestor \(LCA\) of binary tree](#)[Prev](#)[Next](#)

# Comments

Vivek says:

[May 24, 2023 At 11:06 Pm](#)

Hey can you add some react machine coding questions which gets asked at start-ups.

[Reply](#)

[Prashant Yadav](#) says:

[May 25, 2023 At 11:03 Am](#)

Sure

[Reply](#)

Kevin says:

[April 28, 2019 At 11:47 Pm](#)

What is the maximum part?

Why sort?

[Reply](#)

[Prashant Yadav](#) says:

[April 29, 2019 At 9:46 Am](#)

We sort the arrays so that we should be able to multiply bigger numbers together and then add them to get the maximum sum.

[Reply](#)

## Leave a Reply

Your email address will not be published. Required fields are marked \*

Comment

Start typing...



Name\*

Name

Email\*

Email

POST COMMENT

Advertisements



[About Us](#)

[Contact Us](#)

[Privacy Policy](#)

[Advertise](#)



Handcrafted with  somewhere in **Mumbai**

© 2023 [LearnersBucket](#) | [Prashant Yadav](#)

