

Max Array Sum ★

[Problem](#)[Submissions](#)[Leaderboard](#)[Editorial](#)

RATE THIS CHALLENGE



Given an array of integers, find the subset of non-adjacent elements with the maximum sum. Calculate the sum of that subset. It is possible that the maximum sum is **0**, the case when all elements are negative.

Example

arr = [-2, 1, 3, -4, 5]

The following subsets with more than **1** element exist. These exclude the empty subset and single element subsets which are also valid.

Subset	Sum
[-2, 3, 5]	6
[-2, 3]	1
[-2, -4]	-6
[-2, 5]	3
[1, -4]	-3
[1, 5]	6
[3, 5]	8

The maximum subset sum is **8**. Note that any individual element is a subset as well.

arr = [-2, -3, -1]

In this case, it is best to choose no element: return **0**.

Function Description

Complete the ***maxSubsetSum*** function in the editor below.

maxSubsetSum has the following parameter(s):

- int arr[n]: an array of integers

Returns

- int: the maximum subset sum

Input Format

The first line contains an integer, ***n***.

The second line contains ***n*** space-separated integers ***arr[i]***.

Constraints

- $1 \leq n \leq 10^5$
- $-10^4 \leq arr[i] \leq 10^4$

Sample Input 0

```
5
3 7 4 6 5
```

Sample Output 0

```
13
```

Explanation 0

Our possible subsets are [3, 4, 5], [3, 4], [3, 6], [3, 5], [7, 6], [7, 5] and [4, 5]. The largest subset sum is **13** from subset [7, 6]

Sample Input 1

```
5
2 1 5 8 4
```

Sample Output 1

```
11
```

Explanation 1

Our subsets are [2, 5, 4], [2, 5], [2, 8], [2, 4], [1, 8], [1, 4] and [5, 4]. The maximum subset sum is **11** from the first subset listed.

Sample Input 2

```
5
3 5 -7 8 10
```

Sample Output 2

```
15
```

Explanation 2

Our subsets are [3, -7, 10], [3, 8], [3, 10], [5, 8], [5, 10] and [-7, 10]. The maximum subset sum is **15** from the fifth subset listed.

[Change Theme](#)

Language

C#



```
1 using System.CodeDom.Compiler;
2 using System.Collections.Generic;
3 using System.Collections;
4 using System.ComponentModel;
5 using System.Diagnostics.CodeAnalysis;
6 using System.Globalization;
7 using System.IO;
8 using System.Linq;
9 using System.Reflection;
10 using System.Runtime.Serialization;
11 using System.Text.RegularExpressions;
12 using System.Text;
13 using System;
14
15 class Solution {
16
17     // Complete the maxSubsetSum function below.
18     static int maxSubsetSum(int[] arr) {
19
20         var length = arr.Length;
21
22         var dp = new int[arr.Length];
23         dp[0] = Math.Max(0, arr[0]);
24         dp[1] = Math.Max(dp[0], arr[1]);
25
26         for (int i = 2; i < arr.Length; i++)
```

```
26     for (int i = 2; i < arr.Length; i++)
27     {
```

Line: 49 Col: 1

 Upload Code as File

☐ Test against custom input

Run Code

Submit Code

[Contest Calendar](#) | [Blog](#) | [Scoring](#) | [Environment](#) | [FAQ](#) | [About Us](#) | [Support](#) | [Careers](#) | [Terms Of Service](#) | [Privacy Policy](#) | [Request a Feature](#)