**Day 53 coding Statement :** Given an integer array of size N. Write Program to find maximum product subarray in a given array.

**Input :** Enter the Array length-5
       Enter the Array Elements -1 5 -7 5 3

**Output:** 15

Program:

```java
package com.talentbattle.codingchallenge;

import java.util.Scanner;

public class Max_product {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        Scanner scan = new Scanner(System.in);
        System.out.println("Enter the Array length");
        int n = scan.nextInt();
        int arr[] = new int[n];
        System.out.println("Enter the Array Elements");
        for(int i=0;i<n;i++) {
            arr[i]=scan.nextInt();
        }
        long max=arr[0];
        long min=arr[0];
        long res=arr[0];

        for(int i=0;i<n;i++) {
            if(arr[i]==0) {
                max=1;
                min=1;
                continue;
            }
            long temp1=arr[i]*max;
            long temp2=arr[i]*min;
            max=(temp1>temp2?temp1:temp2);
            max=(max>arr[i]?max:arr[i]);
            min=(temp1<temp2?temp1:temp2);
            min=(min<arr[i]?min:arr[i]);
            res=(res>max?res:max);
        }
        System.out.println(res);
    }

}
```

File   Edit   Source   Refactor   Navigate   Search   Project   Run   Window   Help

Project Explorer

```
v com.talentbattle.codingchallenge
  > alphabet_or_not.java
  > Anagram.java
  > Areaofcircle.java
  > Armstrong.java
  > Array_even_or_odd.java
  > Array_square.java
  > Array_type.java
  > ascii_output.java
  > Brackets_remove.java
  > Concatenate_string.java
  > Count_in_Strings.java
  > day1_vowel_consonant.java
  > days_in_a_month.java
  > Dot_product.java
  > Double_number.java
  > duplicate_element.java
  > Element_Array.java
  > Equal_arrays.java
  > factor.java
  > factorial.java
  > First_las_letter_captial.java
  > fraction.java
  > Frequency_string.java
  > Handshakes.java
  > Longest_palindrome.java
  > Max_product.java
  > No_repeating_char.java
  > Number_of_digits.java
  > odd_or_even.java
  > package-info.java
  > Palindrome.java
  > Perfect_Number.java
  > positive_or_negative.java
```

Max_product.java

src > com.talentbattle.codingchallenge > Max_product > main(String[]) : void

```java
 3  import java.util.Scanner;
 4
 5  public class Max_product {
 6
 7      public static void main(String[] args) {
 8          // TODO Auto-generated method stub
 9          Scanner scan = new Scanner(System.in);
10          System.out.println("Enter the Array length");
11          int n = scan.nextInt();
12          int arr[] = new int[n];
13          System.out.println("Enter the Array Elements");
14          for(int i=0;i<n;i++) {
15              arr[i]=scan.nextInt();
16          }
17          long max=arr[0];
18          long min=arr[0];
19          long res=arr[0];
20
21          for(int i=0;i<n;i++) {
22              if(arr[i]==0) {
23                  max=1;
24                  min=1;
25                  continue;
26              }
27              long temp1=arr[i]*max;
28              long temp2=arr[i]*min;
29              max=(temp1>temp2?temp1:temp2);
30              max=(max>arr[i]?max:arr[i]);
31              min=(temp1<temp2?temp1:temp2);
32              min=(min<arr[i]?min:arr[i]);
33              res=(res>max?res:max);
34          }
35          System.out.println(res);
36      }
37
38  }
39
```

Console

```
<terminated> Max_product [Java Application] C:\Program Files\Java\jdk-
Enter the Array length
5
Enter the Array Elements
1
5
-7
5
3
15
```

Type here to search      20°C  Partly sunny      8:55 AM  1/9/2023