DP-S009 (E033)

Solved Challenges **0/1**

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Selling Wine Bottles

ID:11129 **Solved By 558 Users**

There are **N** wine bottles packed and arranged in a row from left to right. The wine bottles can be sold only one per year with a condition that only the leftmost or the rightmost wine bottle can be sold. The price of a wine bottle **P(i)** where 1 <= i <= N (which has not been sold yet) increases by it's initial price P(i) every year. Find the maximum revenue that can be obtained by selling the wine bottles based on the above conditions.

Boundary Condition(s):
1 <= N <= 10^6
1 <= P(i) <= 100

Input Format:
The first line contains N.
The second line contains N integers representing the price of the wine bottles separated by a space.

Output Format:
The first line contains the maximum revenue that can be obtained by selling the wine bottles based on the above conditions.

Example Input/Output 1:
Input:
4
1 4 2 3

Output:
29

Explanation:
Max revenue = **1***1 + **3***2 + **2***3 + **4***4 = 29

Example Input/Output 2:
Input:
5
3 5 7 3 6

Output:
79

Max Execution Time Limit: 500 millisecs

Ambiance

C (gcc 8.x)

Reset

```
#include<stdio.h>
#include<stdlib.h>
#include<math.h>
int N;

int maxRevenue(int prices[],int max[][N],int left,int right,in
{
    if(max[left][right] !=0) // Memoization
        return (max[left][right]);

    if(left==right)
        return (prices[left]*year);

    int leftRevenue = prices[left]*year +
                      maxRevenue(prices,max,left+1,right,year+

    int rightRevenue = prices[right]*year +
                       maxRevenue(prices,max,left,right-1,year

    max[left][right] = (leftRevenue>rightRevenue)?leftRevenue:

    return (max[left][right]);
}

int main()
{
    scanf("%d",&N);
    int prices[N];
    int max[N][N];
    for(int i=0;i<N;i++)
    {
        scanf("%d",&prices[i]);
    }
    for(int i=0;i<N;i++)
        for(int j=0;j<N;j++)
            max[i][j] = 0;

    printf("%d",maxRevenue(prices,max,0,N-1,1));


}
```

Close

SkillRack Message : Selling Wine Bottles

```
#include<stdio.h>
#include<stdlib.h>
#include<math.h>
int N;

int maxRevenue(int prices[],int max[][N],int left,int right,int year)
{
if(max[left][right] !=0) // Memoization
return (max[left][right]);

if(left==right)
return (prices[left]*year);

int leftRevenue = prices[left]*year +
maxRevenue(prices,max,left+1,right,year+1);

int rightRevenue = prices[right]*year +
maxRevenue(prices,max,left,right-1,year+1);

max[left][right] = (leftRevenue>rightRevenue)?leftRevenue:rightRevenue;

return (max[left][right]);
}

int main()
{
scanf("%d",&N);
int prices[N];
int max[N][N];
for(int i=0;i<N;i++)
{
scanf("%d",&prices[i]);
}
for(int i=0;i<N;i++)
for(int j=0;j<N;j++)
max[i][j] = 0;

printf("%d", maxRevenue(prices,max,0,N-1,1));


}
```

Please wait while we run the program ....

□ Run with a custom test case (Input/Output)