Python_002: Everyone loves wine

on December 14, 2017

Everyone loves wine

Hey friends,
Yesterday I found one interesting problem on Codechef. I really liked that, so I started solving it. After some mistakes finally I found. Please try to solve it. The programe is based on recursion.

Chef has brought **N** wines from French to sell in his restaurant. Chef sells one wine per day and wants to maximize the money he receives over a given period time. These wines are interesting for many reasons:

- The wines are numbered **1..N** and stored sequentially in a single file in a long box which is opened at both ends. On any day, the chef can retrieve one wine from either end of his stash of wines.
- The taste of wines improve with age and so he can sell it for the greater price. The wines are not uniform: some are better and made with finner ingredients. wine i has cost **c(i)**.
- The chef can sell the wine that has aged longer for the greater price: he can sell it for a price **c(i)*a** for a treat of age a.

  Given the costs **c(i)** of each of the wine lined up in order of the index i in their box, what is the maximum money chef can get for them if he orders their sale optimally?

  The first wine is sold on day 1 and has age a=1. Each subsequent day increases the age by 1.

  ### Input

  - The first line contains a single integer **N** denoting the number of wines in the stash
  - From line 2 to line N+1: Line i+1 contains a single integer denoting the cost of wine c(i).

Output

- The output is a single line containing the maximum money the chef can get if he sells them optimally.

Example

```
Input1:
4
10
1
10
9
Output:
79
```

CodeChef Link : click here

Try to solve it.

Here is my solution in python

```
#Function for finding maximum profit
def maxpro(plvar):
    l=len(plvar)
    d = N - len(plvar) + 1 #Count Day no
    fprice=plvar[0] #first price in list
    lprice = plvar[len(plvar)-1] #last price in list
    if(len(plvar)>1):
        f_rem_list=plvar[1:len(plvar)] #remaining list after removing
        l_rem_list=plvar[0:len(plvar)-1] #remaining list after removi
        return max(fprice*d + maxpro(f_rem_list),lprice*d + maxpro(l_
    else:
        return fprice*d #for last day-only one bottle will remain



#Function for finding minimum profit
def minpro(plvar):
    l=len(plvar)
    d = N - len(plvar) + 1
    fprice=plvar[0]
    lprice = plvar[len(plvar)-1]
    if(len(plvar)>1):
        f_rem_list=plvar[1:len(plvar)]
        l_rem_list=plvar[0:len(plvar)-1]
        return min(fprice*d + minpro(f_rem_list),lprice*d + minpro(l_
    else:
        return fprice*d


N = 8 #No. of bottle of wine
pl=[10,22,77,4,55,1,10,9]  #price list according to wine
print ("Wine : ",pl)
print("Maximum profit : ",maxpro(pl))
print("Minimum profit : ",minpro(pl))
```

Click here to download source code

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