Gems

ZPRAC-16-17-Lab11

Gems

[40 Marks]

ANNOUNCEMENT:

10% marks will be allotted for using dynamic memory allocation (using malloc)

Up to 20% marks will be allotted for good programming practice. These include
- Comments for non trivial code
- Indentation: align your code properly

K friends goes to a Gem stone dealer to buy N gems. Price of each gem is given as P=[p1,p2,..,pN]. The gem stone dealer is greedy and he increases the gem prices for repeat customers. If a customer has purchased x gems and wants to buy another gem, say the ith gem, then she/he will have to pay (1+x)*Pi amount of money to buy the ith gem.

Find and print the minimum amount of money required by the K friends to purchase all the N gems.

Input Format::
First line contains two integers N and K
The second line contains N space-separated positive integers describing the cost of each gem

Output Format::

Print the minimum cost for buying all the N gems.

Example::

Input--

3 2
2 5 6

Output--

15

Explanation:

There are 3 gems and 2 people in the group. The first person purchases the first 2 gems. The second person purchases the last gem. The optimal order of buying is as follows--

1st person buys the 2nd gem(cost=5) first at a price of (0+1)*5=5
1st person buys the 1st gem(cost=2) next at a price of (1+1)*2=4
2nd person buys the 3rd gem(cost=6) next at a price of (0+1)*6=6

Total Cost=15

Any other order of buying will not cost any less than 15