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Reg ID: CS(KS) / 01

Type: Implementation

Topic: Google Kick Start Competition 2020 (A)

Round (A) - Topic

"Allocation"

Discipline of learning:

• Computer Science

• Data Structure and Algorithms

Pre-Request

• Algorithms

• Data Structure (list, array)

• Programming (Python 3.x)



Content:

* This kind of "Knowledge" registrations will merge into the sub-directory.

Kick Start 2022 Round A Competition

In this question, participants should determine how many "houses" can buy within a given budget. User should input their several test cases, then how many houses are on market and how much budget they get.

In order to solve this problem in greedy algorithm and put it more simply. After the user input, all prices of the house and budget, sort the prices array from lowest to highest and turn it into an array of the queue.

In the main program of each test case, if the budget is greater than the first indexed item in the sorted queue, the item will dequeue, and deduct the budget, the of the brought house will increase by 1, to indicate "the house was brought".

After the above step was done, repeat the above step until you reach out of budget.

If the budget is less than the first indexed item of the queue, that meant you do not have enough budget to buy any house further, even the current possible cheapest house. The loop will end here, and print out the quantities of brought houses at each test case.

Start Competition

llars to buy. You have a budget of B dollars to spend.

s, T test cases follow. Each test case begins with a single line containing the two integers N and B. The cost of the i-th house.

eration result [] / print-per- each-loop.

x: y, where x is the test case number (starting from 1) and y is the maximum number of houses you can buy.

int.
↓
// (B)

length = (N)
N
213 | 416 | 5 | 76

1 2 3 4

A[4].length => 5

\$999

while {

H (\$ < sorted[A_i])

end loop ; ~~print result~~ ;

else

Select house

print-result ();

Print (A[i])

if (\$ > A[i]) {

buy ();

\$ -= \$cost

~~\$~~ cost

qty-buy += 1

at (qty-buy)

Case #1: 2
Case #2: 3
Case #3: 0

1 input

Sample Input

You can buy the 1st and 3rd houses for $20 + 40 = 60$ dollars.
You can buy the 1st, 3rd and 4th houses for $30 + 10 + 10 = 50$ dollars.
You cannot buy any houses (so the answer is 0).

Test sets are visible verdict test sets, meaning you receive instant feedback upon submission.

3 ← Test cases

4 ← N
100 ← B

House ['20', '90', '40', '90'].length ⇒ N ⇒ 4

Case #1:

↑
A_i
(A₀ ----- A₃)