

Percentile Scores

The candidates performance in GATE exam is measured in percentile scores.

Example: if you have secured a 70 percentile in GATE, which means that 70% of the candidates who appeared for GATE are below or at the same level as you are.

The result of a candidate is given as a tuple (p,q) where p and q are roll number and marks of the candidate respectively.

Write a program to compute percentile of each student and store it in a data structure.

Once the percentile scores are stored, the percentile of a student should be accessed in average constant time.

Formula to compute Percentile score of a student x:

$(100 * \text{number of students who scored below or same as } x) / \text{total number of students}$

Solve the problem with efficient complexity.

Explain the complexity of your algorithm

Sample Input:

6

31,78

12,56

43,90

74,79

16,90

23,35

4

23

12

74

43

Sample Output:

16.67

33.33

66.67

100.0

Input explanation:

First line of input contains an Integer (N) represents total number of students data

From second line to next N lines contains students data

Next line contains Integer(M) represents no. of student roll number queries

Next M line contains roll numbers of students where you need to print the percentile of those students.

Explanation:

For student marks 90,90,79,78,56 35 the following will be the percentile scores

$(100 \cdot 6/6 = 100.0)$, $(100 \cdot 6/6 = 100)$, $(100 \cdot 4/6 = 66.67)$, $(100 \cdot 3/6 = 50.0)$, $(100 \cdot 2/6 = 33.33)$, $(100 \cdot 1/6 = 16.67)$

Note: Round the output to 2 decimal points