Practice Arena

Practice problems aimed to improve your coding skills.

- PRACTICE-02_SCAN-PRINT
- PRACTICE-03_TYPES
- LAB-PRAC-02_SCAN-PRINT
- LAB-PRAC-01
- PRACTICE-04_COND
- BONUS-PRAC-02
- LAB-PRAC-03_TYPES
- PRACTICE-05_COND-LOOPS
- LAB-PRAC-04_COND
- LAB-PRAC-05_CONDLOOPS
- PRACTICE-07_LOOPS-ARR
- LAB-PRAC-06_LOOPS
- LAB-PRAC-07_LOOPS-ARR
- LABEXAM-PRAC-01_MIDSEM
- PRACTICE-09_PTR-MAT
- LAB-PRAC-08_ARR-STR
- PRACTICE-10_MAT-FUN
- LAB-PRAC-09_PTR-MAT
- LAB-PRAC-10_MAT-FUN
- PRACTICE-11_FUN-PTR
- LAB-PRAC-11_FUN-PTR
- LAB-PRAC-12_FUN-STRUC
- LABEXAM-PRAC-02_ENDSEM
- LAB-PRAC-13_STRUC-NUM
  - Too tired to create a story - part I
  - Too tired to create a story - part II
  - Too tired to create a story - part III
  - Point Proximity
  - The Bisection Method
  - The pace is too fast
  - A Question on Quadrilaterals
  - The Trapezoidal Technique
  - Constrained Candy Crush
  - Major Mobile Madness
  - The Newton Raphson Method
  - The Palindrome Decomposition
- LAB-PRAC-14_SORT-MISC

Major Mobile Madness

LAB-PRAC-13_STRUC-NUM

Major Mobile Madness [20 marks]

Problem Statement
All of Mr C's clones have the latest mobile phone in the market and he does not want to be left out. However, he is in a dilemma. Some phones have a better camera whereas others have better battery life. Moreover, Mr C's parents gave him only a limited budget to purchase a phone. Help Mr C choose a phone to purchase. Mr C has collected a list of phones available in the market including their costs and ratings in 5 different categories - Camera, Performance, Battery, Hardware and Design. Mr C wants to buy a phone within his budget with the highest average rating across the 5 categories.

The first line of the input will contain two strictly positive integer, n and b, separated by a space. n will denote the number of phones in the market and b will denote Mr C's budget. In the next n lines, we will give you the specifications of each of the phones. Each specification will consist of 2 integers and 5 floating point numbers as shown below. All numbers will be separated by a space. The phone id will be unique, i.e. no two phones will have the same id.
id price cam perf bat hard des

In your output, you have to print the id of the phone which has the highest average rating among phones that Mr C can buy, i.e. phones whose price is less than or equal to Mr C's budget. If there is no phone Mr C can buy, print -1 in your output. If there is more than one phone with highest average rating among those Mr C can buy, choose the phone with the lowest price. If there is more than one phone with lowest price and highest average rating among those Mr C can buy, choose the phone that appears earliest in the list of phones. Use a structure to maintain details about the phone to help simplify your code.

Caution

1. Phone ids will not be given to you in any particular order, nor will the phones be listed such that prices or ratings are in any particular order.
2. The price of a phone will be a non-negative integer but may be zero.
3. The ratings of a phone will be a non-negative floating point number but may be zero.
4. The id of a phone will be a strictly positive integer.
5. Be careful about extra/missing lines and extra/missing spaces in your output.

EXAMPLE:
INPUT
3 100
89 40 8.0 8.0 8.0 8.0 6.5
93 99 8.0 5.0 5.0 5.0 10.0
84 50 8.1 8.0 8.2 8.2 6.0

OUTPUT:
89

Explanation: All phones are affordable and phone ids 89 and 84 have equal average rating of 7.7. However, phone id 89 is cheaper.

Grading Scheme:
Total marks: **[20 Points]**

There will be no partial grading in this question. An exact match will receive full marks whereas an incomplete match will receive 0 points. Please be careful of missing/extra spaces and missing/lines (take help of visible test cases). Each visible test case is worth 1 point and each hidden test case is worth 2 points. There are 2 visible and 4 hidden test cases.

Start Solving! (/editor/practice/6264)