ECOO '17 R1 P2 - Chocolate Chewsday

Time limit: 30.0s **Memory limit:** 64M

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At the local candy factory, every Tuesday, there is a contest for whoever can come up with the best new chocolate. To make a decision on whether or not each chocolate is a winner, there is a panel of impartial judges that come in from the community. The judges are given the following criteria for judging:

- Packaging (P), up to 1 point
- Flavour (F), up to 2 points
- Minimal ingredients (G), up to 3 points

A score S is given to each chocolate from each judge assigned to that chocolate $(0 \leq S \leq 6)$. There will be a random number of judges J, assigned to each chocolate $(1 \leq J \leq 100)$.

Your task is to declare the winner based on the highest total score in the competition. If there is a tie for the highest total score, it can sometimes be broken using the total scores for P, F and G (try G first, then F, then P).

The competition is not really fair because some chocolates get more judges than others. But that's life at the candy factory.

Input Specification

The input will contain 10 competitions. The first line of each competition will contain a single integer N, to indicate the number of chocolates in the competition $(1 \leq N \leq 100)$. For each of the N chocolates, there will be $J + 1$ lines in the file. The 1^{st} line is the name of the chocolate (a single word with no spaces) and the next J lines will contain the judges' scores $(1 \leq J \leq 100)$. Each score will be contained on a single line, starting with the letter `J` followed by the 3 integers P, F, and G separated by spaces. Each competition ends with an asterisk `*` (ASCII 42).

Output Specification

Output the name of the winner. If there is more than one winner, print out all winners on a single line separated by commas (order does not matter — i.e., an output of `A,B` is the same as `B,A`).

Sample Input 1

```
2
C1
J 0 1 1
J 0 1 0
J 1 0 0
C2
J 1 2 3
*
```

Sample Output 1

```
C2
```

Note: Only 1 case is shown in this sample.

Sample Input 2

```
4
ChocolateOfChocolates
J 0 2 2
J 0 1 2
J 1 2 0
Choco-Fun
J 1 2 3
J 1 2 0
ChocolateHaven
J 1 2 0
J 0 2 3
J 1 0 1
ChocolatesRock
J 1 2 1
J 1 2 0
J 1 2 0
*
1
ChocolateFilledCandy
J 0 0 0
*
```

Sample Output 2

```
ChocolateOfChocolates
ChocolateFilledCandy
```

Note: Only 2 cases are shown in this sample.

Explanation of Sample 2

For the first competition, there is a tie between `ChocolateOfChocolates`, `ChocolateHaven`, and `ChocolatesRock`. We then had to look at the G values, which were tied for `ChocolateOfChocolates` and `ChocolateHaven`. Consequently, we had to then check the F value. At this point, `ChocolateOfChocolates` has the higher value.

ECOO 2017 Question Development Team

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