Problem 1

Make 'em Look Good

6 Points

Program Name: baseball.cpp **Input File: baseball.dat**

Introduction

You are the Jumbotron operator for ~~Enron Field~~ ~~Astros Field~~ Minute Maid Park. You have been told that when the Houston Astros are batting, you want to display their batting statistics in the best possible light. To do this you should display on the Jumbotron the batter's batting average X for the last Y games, where Y is the game in the last ten games for which X would be the highest. Batting averages are calculated by dividing the total number of batting attempts by the total number of hits and rounding to the nearest thousandths. For example, to calculate a batter's batting average for the last 3 games, you would divide the total number of batting attempts for the last 3 games by the total number of hits for the last 3 games, then round to the nearest thousandth.

Input

Input to this problem will consist of a (non-empty) series of up to 100 data sets. Each data set will be formatted according to the following description, and there will be **no blank lines** separating data sets.

A single data set has 3 components:

1. *Start line* - A single line, "START"
2. The next ten lines will represent the batter's performance for the last ten games. The first line will refer to the batter's last game, the second line to the batter's second-to-last game, and so on. Each line will be in the format, "A B", where:

   A : (0 <= A <= 9) is the number of hits the batter had that game.
   B : (3 <= B <= 9) is the number of batting attempts the batter had that game
   and, obviously, B >= A.
3. *End line* - A single line, "END"

Output

For each data set, there will be exactly one line of output. The output will be a single line in the format "BATTING X FOR THE LAST Y GAME(S)", where X and Y are calculated as described. If there are multiple values of Y that would result in the highest X, choose the value for Y that is the greatest. For example, if a batter were batting .500 for the last 3 games, 4 games, and 6 games, the value for Y would be 6. Display batting averages to three decimal places and do not display any leading zeroes, but display any leading ones.

Example: Input File

```
START
1 3
1 3
3 4
2 4
1 3
3 5
1 7
4 5
1 4
2 5
END
START
4 4
2 3
3 5
1 3
1 4
1 3
2 4
4 5
3 6
3 3
END
```

Output to screen

```
BATTING .500 FOR THE LAST 6 GAME(S)
BATTING 1.000 FOR THE LAST 1 GAME(S)
```