ACM International Collegiate Programming Contest 2005

South American Regional

November 11-12, 2005

Warmup Session

(This problem set contains 2 problems; pages are numbered from 1 to 3)

Contest Sites:

- Argentina

- Brazil

- Chile

- Colombia

- Peru

- Venezuela

Problem A
Head or Tail

Source file name: `headtail.c`, `headtail.cpp`, `headtail.java` *or* `headtail.pas`

John and Mary have been friends since nursery school. Since then, they have shared a playful routine: every time they meet, they play Head or Tail with a coin, and whoever wins has the privilege of deciding what they are going to play during the day. Mary always choose Head, and John always choose Tail.

Nowadays they are in college, but continue being truly good friends. Whenever they meet, they still play Head and Tail, and the winner decides which film to watch, or which restaurant to have dinner together, and so on.

Yesterday Mary confided to John that she has been keeping a record of the results of every play since they started, in nursery school. It came as a surprise to John! But since John is studying Computer Science, he decided it was a good opportunity to show Mary his skills in programming, by writing a program to determine the number of times each of them won the game over the years.

Input

The input contains several test cases. The first line of a test case contains a single integer N indicating the number of games played ($1 \leq N \leq 10000$). The following line contains N integers R_i, separated by space, describing the list of results. If $R_i = 0$ it means Mary won the ith game, if $R_i = 1$ it means John won the ith game ($1 \leq i \leq N$). The end of input is indicated by $N = 0$.

The input must be read from standard input.

Output

For each test case in the input your program should output a line containing the sentence "`Mary won X times and John won Y times`", where X ≥ 0 and Y ≥ 0.

The output must be written to standard output.

Sample Input	Output for the sample input
5	Mary won 3 times and John won 2 times
0 0 1 0 1	Mary won 5 times and John won 1 times
6	
0 0 0 0 0 1	
0	

Problem B
Soccer League

Source file name: `soccer.c`, `soccer.cpp`, `soccer.java` *or* `soccer.pas`

Soccer, or football, is today the biggest sport in the world. According to a study published in 2001, over 240 million people regularly play football in more than 200 countries in every part of the world.

You have been hired to provide IT support for the ACM Soccer League. The rules set for this year in the ACM Soccer League are:

- The winner Club of a League Match shall score three points. Each Club participating in a League Match which is drawn shall score one point.

- The results of League Matches shall be recorded in a Table containing, in respect of each Club, the number of points scored in that Season.

- The position of Clubs in the table shall be determined by the number of points scored in that Season, the Club having scored the highest number of points being at the top of the table and the Club having scored the lowest number of points being at the bottom.

- If any two or more Clubs have scored the same number of points their position in the table shall be determined on goal difference, that is to say, the difference between the total number of goals scored by and against a Club in League Matches in that Season, and the higher or highest placed Club shall be the Club with the larger or largest goal difference.

You will be given a list of match results from the ACM Soccer League, and must produce League Table, as defined by the rules above.

Input

The input contains several test cases. The first line of a test case contains a single integer N indicating the number of matches in the test ($1 \le N \le 1000$). Each of the following N lines describes the result of a match, in the format

```
Club1 X x Y Club2
```

where `Club1` and `Club2` are strings of at most 15 characters (from 'a' to 'z' and 'A' to 'Z'), `X` is the number of goals scored by `Club1` and `Y` is the number of goals scored by `Club2` ($0 \le X \le 10$ and $0 \le Y \le 10$). The end of input is indicated by $N = 0$.

The input must be read from standard input.

Output

For each test case in the input your program should output a League Table. Each line of the table must be in the format

```
P Club
```

where P is the number of points accumulated by the `Club`. The Clubs must appear in order of descending number of points. If two or more Clubs have the same number of points, the one with largest goal difference must appear first. If two or more teams have the same number of points and the same goal difference, you can choose to output them in any order. You must print a blank line after each table.

The output must be written to standard output.

Sample input	Example of output for the sample input
3	6 Sundance
Warriors 0 x 3 Sundance	1 Cats
Sundance 3 x 2 Cats	1 Warriors
Cats 2 x 2 Warriors	
6	3 Goalies
Goalies 1 x 1 Wallops	3 Wallops
Wallops 1 x 1 Guardian	3 Guardian
Guardian 1 x 1 Goalies	3 Artists
Artists 1 x 1 Goalies	
Artists 1 x 1 Guardian	
Wallops 1 x 1 Artists	
0	