ACM Pacific NW Region Programming Contest
9 November 2002

PROBLEM C

Poker Dice

Write a program that evaluates a set of poker dice "hands" and displays the ordered results.

Here are the evaluation rules, taken from **Hoyle's Rules of Games**, ed. by Albert H. Morehead and Geoffrey Mott−Smith (The New American Library of World Literature, 1963), pp. 227−28.

> Five dice are used. These . . . [are] standard dice, marked with numbers [1 through 6]. . . .
>
> Theoretically any number may play, but actually the game is played by groups of two to five people, usually in a restaurant or bar to decide which pays the check.
>
> Each player has three rolls. His object is to make the best possible poker hand, ranking: Five of a kind, high; four of a kind; full house; three of a kind; two pair; pair; high "card." Aces (1s) rank above sixes . . . Straights do not count.
>
> ?

Here are the evaluation rules for potentially ambiguous <u>poker hands</u>, taken from a playing card included in a "Mohawk"−brand deck of poker cards:

> Full house: three of a kind and two of a kind. Ex.: 8, 8, 8, and 6, 6. Hand with the highest three cards wins over any other full house.
>
> Two Pair: Ex.: Q, Q, and 10, 10. Hand with the highest pair wins. If there is a tie, hand with the highest remaining (or fifth) card wins.
>
> One Pair: if two are playing, hand with the highest value wins. Ex.: two 4's beats two 3's. Highest remaining card in−hand breaks a tie.

With poker dice it is possible for hands to tie. If multiple hands tie, they are given the *same* position number, and the position of the next lower hand shows a gap. If, for instance, there are three players and there is a tie for first, the final position vector would be { 1, 1, 3 }: there are two winners; there is no second−place player; and there is a third−place player.

Program input is read from a file that observes the following specifications:

- The first record contains the number of games, which is greater than or equal to 1. This record is followed by one or more blank lines.
- The rest of the records specify the details for each game, as follows:
- The first game record contains the number of players, which will be between 2 and 10 inclusive.
- Subsequent game records contain information on those individual hands; specifically:
  - five integers giving the face values of the five dice, separated by blanks
  - one *or more* blanks

- the remainder of the line contains the player's name, with an unspecified amount of embedded white space. *Warning*: the player's name must not *begin* with any white−space characters.

Program output will be a table of results for each game, labeled by game number, beginning at 1, formatted as seen below. Each line of results will begin with the player's position (right aligned in two spaces), followed by 6 spaces, followed by the face values of the dice (with one space between each value), followed by 3 spaces and the players name. Separate game tables by a blank line for readability. *Note:* While the sample output displays each hand's dice in input order, your output may list each hand's dice in any order.

Each game table is to be sorted by player position (from first place to last place). In case of ties, the entries are to be alphabetized by the players' names.

SAMPLE INPUT:

```
2

8
3 5 1 1 2  John Doe
3 2 2 2 3  Michelle Midlen
2 2 3 3 2  Jane Roe
1 3 4 5 6  Aaron Aardvark
3 4 4 4 1  Zoltan Zwingli
3 5 1 2 2  Jeffrey Walter
3 3 2 2 3  Al Gore Rythm
6 5 4 3 2  Macguiver
4
1 2 3 4 5  John Doe
2 2 2 2 4  Michelle Midlen
3 3 4 4 1  Jane Roe
6 6 3 3 2  Aaron Aardvark
```

SAMPLE OUTPUT:

```
Game #1:
 1      3 3 2 2 3   Al Gore Rythm
 2      2 2 3 3 2   Jane Roe
 2      3 2 2 2 3   Michelle Midlen
 4      3 4 4 4 1   Zoltan Zwingli
 5      3 5 1 1 2   John Doe
 6      3 5 1 2 2   Jeffrey Walter
 7      1 3 4 5 6   Aaron Aardvark
 8      6 5 4 3 2   Macguiver

Game #2:
 1      2 2 2 2 4   Michelle Midlen
 2      6 6 3 3 2   Aaron Aardvark
 3      3 3 4 4 1   Jane Roe
 4      1 2 3 4 5   John Doe
```