

Program Name: raffle.cpp

Input File: raffle.dat

Your high school is in desperate need of new computer equipment, and the Computer Club is hosting a raffle to raise money for this worthy cause. In an effort to maximize participation in the raffle, the Computer Club has come up with a clever way to give out the prizes. There are a set number of prizes to be given away. When a person buys a raffle ticket, they will submit a prioritized list of the items they want to win, starting with the prize they most want and ending with the prize they want the least. After the raffle is over, names will be drawn from a hat. The first person drawn will win the first prize on his/her list. The next person drawn will win the first prize on his/her list that has not already been won. This will continue until all of the prizes are handed out or all contestants have been drawn. This gives people a greater probability of winning something they want, thus increasing the number of raffle tickets sold. Your job as president of the Computer Club is to write a program that will determine, given the order in which the names are drawn, who wins each prize.

Input Description

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 5 components:

Start line - A single line, "START C P ", where C is the number of contestants ($1 \leq C \leq 10$) and P is the number of prizes in the raffle ($1 \leq P \leq 10$).

Prize List - The next P lines will consist of the prizes available to be won by the contestants.

Contestant Info - There will be C of these, each Contestant Info entry will consist of the contestant's name, followed by that contestant's prize priority list (each prize on a separate line). A contestant's prize priority list will list each prize from the *Prize List* exactly once.

Drawing Order - The next C lines will consist of all of the contestants' names in the order in which they were drawn.

End line - A single line, "END"

Note:

- Contestant and prize names may consist of multiple tokens (e.g. 'John Doe' and 'Sports Car').

Output Description

Each dataset's output will start with the following string:

Raffle #<NUMBER>:

Where <NUMBER> begins as 1 for the first data set and increments by 1 for each data set thereafter. The remaining output for each dataset will consist of the following string for each person who has won a prize from the prize list:

<CONTESTANT> Wins <PRIZE>!!

Note:

- The order in which the names were drawn is the order in which the winners should be listed.

Sample Input

```
START 3 5
Video Game
CD
Mouse Pad
Pocket Protector
Backpack
Jimmy
Backpack
Video Game
CD
Mouse Pad
Pocket Protector
Betty
CD
Video Game
Pocket Protector
Backpack
Mouse Pad
James
Video Game
CD
Mouse Pad
Pocket Protector
Backpack
James
Betty
Jimmy
END
START 1 1
Prize 1
Contestant 1
Prize 1
Contestant 1
END
```

Sample Output

```
Raffle #1:
James Wins Video Game!!
Betty Wins CD!!
Jimmy Wins Backpack!!
Raffle #2:
Contestant 1 Wins Prize 1!!
```