11490 - The Cat Society

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Description

Wild cats take care of each other in the wild. However, when winter comes, the preys are not enough to feed all the cats. Therefore, the cats dine according to the order of their occupations. The order is as follows:

1. elder
2. nursy
3. kitty
4. warrior
5. apprentice
6. medicent
7. deputy
8. leader

In the tradition of the cat society, three different cats serve as the medicent, the deputy, and the leader respectively. As for the other cats, except that the apprentices have the dining priority of the young over the old, for the other occupations, the old have higher priority. If the occupations and the ages of two or more cats are the same, they will dine in lexicographic order according to their names.

Input

There are multiple test cases.

The first line of each test case contains two integers N and M, indicating the number of cats and the portions of food respectively, where 0<N,M<=10000.

The next N lines are the information of each cat, including name, occupation, and age.
The length of the names will not exceed 30 letters and will contain no spaces.

Output

Please output the cats that could eat the food in order, each name a line.

Sample Input

Download (data:text/plain;charset=utf-8,3%203%0D%0ADovekit%20kitty%203%0D%0AMousefur%20elder%2040%0D%0AGraystripe%20warrior%2036%0D%0A5%2

```
3 3
Dovekit kitty 3
Mousefur elder 40
Graystripe warrior 36
5 3
Firestar leader 36
Dovekit kitty 3
Leafpool warrior 20
Mousefur elder 40
Graystripe warrior 36
```

Sample Output

Download (data:text/plain;charset=utf-8,Mousefur%0D%0ADovekit%0D%0AGraystripe%0D%0AMousefur%0D%0ADovekit%0D%0AGraystripe%0D%0A)

```
Mousefur
Dovekit
Graystripe
Mousefur
Dovekit
Graystripe
```

Discuss