

# Monitors

*Filename: monitors*

After saving up for months Alfred decided to build a new computer. Alfred has already figured out all of the parts he wants to get for the computer itself, but it has come time to decide on a monitor to buy. He compiled a list of all of the monitors that he is considering buying but he is having trouble picking one. He figured that it would be easier if they were arranged such that the larger monitors come first in his list, so he considers them first, because he wants a large screen. In the case that two screens have the same size he would like them to be arranged by minimum price. He wrote down all of the monitor ID codes and their price and realized it would be really annoying to look up all of the sizes and re-order the list by himself. So Alfred asked you for help! You remembered that there is always **exactly one** integer inside of the ID code of a monitor name that describes how large the monitor is (as the length along the diagonal). You realize this is enough information to re-order the list without having to look up the size of each monitor individually and now you just need to fix his list. Then Alfred sent you the list and it was **HUGE!** That is when you realized that you should figure out a way to automate the process.

## The Problem

Help Alfred re-arrange the list of monitors he is considering purchasing.

## The Input

The input will begin with a single positive integer,  $m$ , indicating the number of sets of monitors that Alfred wants you to re-arrange. Each set of monitors is then described as follows. First there will be a single integer,  $n$ , indicating the number of monitors that Alfred has compiled in his list.  $n$  will be between 1 and 1000. Following this will be  $n$  lines each containing the description of a monitor. The description of the monitor will contain a string indicating the ID code of the monitor and the price of the monitor, in dollars, specified to 2 decimal places, separated by a space. All ID codes consist of only uppercase letters and digits and are guaranteed to have exactly one integer embedded in them. It is guaranteed that all of the monitors of the same size have unique prices and that the prices are positive and less than 100,000, in dollars.

## The Output

For each set of monitors output  $n+1$  lines in the following format:

Monitor set # $d$ :

$L$

where  $d$  is the index of the monitor set, starting at 1. And  $L$  is the list of monitor ID codes, one per line, after they have been re-arranged.

Output a single blank line after each monitor set.

**Sample Input**

```
2
3
ASUS2650H 89.99
ACER2750G 100.99
LG2550Q 79.99
2
ASUS2650H 99.99
A2650CERQL 89.99
```

**Sample Output**

```
Monitor set #1:
ACER2750G
ASUS2650H
LG2550Q
```

```
Monitor set #2:
A2650CERQL
ASUS2650H
```