Problem CARDCOUNT: Card count

James Bond loves to go to the casino, and he has lately discovered that Auric Goldfinger cannot stand to lose when playing cards and might have been cheating, so he decides that would be a good idea to have a cheating detector device to expose the dirty guy. 007 is an expert on shooting, girls and drinking martinis, but he has no idea of programming. This is why he wants to hire you as a developer, but obviously you have to pass the interview first. To test your programming and engineering skills, he asks you to develop a card counting program. He tells you that they always represent the value of a card with a character v ($v \in \{2, ..., 9, T, J, Q, K, A\}$), where the special characters T, J, Q, K, A represent a card with a value of 10, 11, 12, 13, and 14, respectively. He also tells you that the suit (Diamonds, Clubs, Hearts or Spades) of a card is given by a character s ($s \in \{D, C, H, S\}$). Your card counting program should be able to tell the highest card that have not yet been drawn from a deck with 52 cards, given that the ordering of the cards is first by value and then by suit, where $D < C < H < S$.

Input

The first line contains the number of test cases t, ($1 \le t \le 100$). Then follows for each test case:

- A line containing an integer n ($1 \le n \le 50$), the number of cards that have already been drawn.

- Then follows n lines that represent the cards that have already been drawn. Each line contains a character v for the card value and a character s for the suit.

Only uppercase letters will appear in the file.

Output

For each test case, print on a separate line the highest card that have not yet been drawn using the same representation for the value and suit as in the input file.

Sample Input 1

```
2
15
K C
Q S
A D
7 C
T H
A C
K D
K H
A S
5 H
A H
4 C
3 H
8 D
K S
4
T C
Q C
3 H
4 S
```

Sample Output 1

```
Q H
A S
```