There is a group of teenager who like to play a game called, "**vut theke vute**". Suppose, this group consists of five teenagers, Kishor, Robin, Musa, Jina, and Raemon. One day, Kishor had a news to share. Therefore, he first called Raemon to share it and talked for 7 minutes. After that he called Musa and chatted for 9 minutes. Meanwhile, Raemon shared the news with Robin by talking for 5 minutes and after that Robin shared it with Jina through talking for 4 minutes. Therefore, when Kishor tried to share the news with Jina after Musa, Jina already knew about the event. It took only 16 minutes for them to share the news over the whole group. Can you write a program to estimate how much time it will require to propagate any news over the whole group?

Input

The input will contain several groups' scenarios. The first line of input gives the number of groups, G. G groups information then will follow. Each one starts with a line containing the number of teenagers in the group, T ($2 \leq T \leq 1000$). After that T lines will follow, one for each teenager. For each teenager, first his name will appear (you can assume that each name will contain only upper-case and lower-case alphabetical characters). Then an integer, m will specify the number of phone calls he made. After that there will be m pairs of a string and an integer, denoting the person who he/she called and the duration of the conversation. You can always assume that the person whose name appeared first among the T teenagers, is the first one to share the news. Also, you can assume that, there is no overlapping phone calls involving one person.

Output

For each group, print the minimum amount of time it will require to spread the news over the whole group. If the news can not be shared over the whole group print the line, **News not shared over the whole group**

Sample Input

```
2
5
Kishor 3 Raemon 7 Musa 9 Jina 2
Raemon 1 Robin 5
Robin 1 Jina 4
Musa 0
Jina 0
```

```
5
Kishor 2 Robin 5 Musa 4
Robin 1 Jina 3
Musa 1 Jina 1
Raemon 0
```

Sample Output

```
16
News not shared over the whole group
```