

Problem MONSTERTRAIN: Monsters on Train Trip

The monsters are superheros with a big organisation now. They have rescue operations all over the world. They like to travel to their site of operation by train. After some time they developed sympathy and antipathy to some other members. The sympathy/antipathy relations with certain members of the team and their presence in the same wagon affects their performance in superheroing. Every monster has some benefit for a operation. This benefit is influenced by the presence of other monsters while traveling. Some monsters are only influenced if a specific set of monsters is present in their wagon. For example small monsters get pissed, if two huge monsters talk all the time about problems being such huge.

Theoretically, one train wagon would be large enough to transport all monsters. However, they reserve up to three wagons to increase the benefit for the operation. Most important in the assignment of monsters to wagons is to increase the total benefit for the operation. The number of used wagons comes second (less is better). At least one monster must take part in every operation.

Input

The inputs starts with the number of operations (at most 10). Each operation is described as follows. It starts with the number N of monsters, which may take part in this operation, in the first line ($0 < N \leq 10$), followed by N monster descriptions. Every monster description starts with one line containing his name (at most 20 alphanumeric characters), its base benefit B ($-100 \leq B \leq 100$) for the operation, the number of antipathy/sympathy sets M ($0 \leq M \leq 10$). Each of the next M lines consist of one antipathy/sympathy set. A set consists of the benefit increase/decrease C ($-100 \leq C \leq 100$) by this set, followed by the number of involved monsters I ($0 < I < N$) and I names of monsters in this set. If every monster in this set is in the same wagon of the given monster, his benefit is increased/decreased by C . Multiple increases/decreases can be applied to one monster.

Output

For every operation, output the maximum benefit you can achieve choosing a set of monsters and the number of used wagons on one line.

Sample Input 1

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1
3
Ginormica 2 0
Insectosaurus 2 0
MissingLink 2 1
-2 2 Ginormica Insectosaurus
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Sample Output 1

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6 2
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