

Problem REMOTE: Remote Control

You just got a new flat tv with all the extras money can buy. Of course, everyone in our household wants to spend each spare minute sitting in front of this new device. As your interests and tastes are very different you have continuing arguments about the right channel.

It might happen that the first person, who snatches the remote control in the morning, could decide on the TV program for the whole day. This is obviously not fair, so you have a better idea:

You can rate each single telecast and valorize your favourites. Afterwards, you choose the composition, which optimizes the sums of our ratings. It's self-evident that you only want to watch whole telecasts.

Input

The input contains several testcases, each of them described below.

The first line of a testcase contains two integer numbers t and p , the number of telecasts and the number of persons in your household ($0 < t \leq 10000$, $0 < p \leq 1000$). The following t lines contain the descriptions of the telecasts. Each line contains two strings and two times. The first string is the description of the channel, the second string is the name of the telecast. Each string only consists of letters ('A' - 'Z', 'a' - 'z') and has less than 1000 characters, the name of each telecast is unique. The time is listed in 24-hour notation - see the sample case as below.

This information is followed by p sections with your ratings. The first line of this section contains the number of ratings n ($0 \leq n \leq t$). The following n lines contain the name of the telecast and one non-negative integer (less than 4711) which is the rating for this show. If anyone gives no rating for a telecast, you can assume that this rating is 0.

Two testcases are separated by a blank line. The input is ended by **EOF**.

Output

The output of each testcase is a single line containing the maximal sum of rating values which can be achieved.

Sample Input 1

```
5 2
DiscoveryChannel MythBusters 10.00 - 12.00
DiscoveryChannel DiveToBermudaTriangle 12.00 - 13.00
BBC AsiaToday 11.00 - 13.00
BBC News 09.00 - 09.15
MTV PimpMyRide 11.00 - 12.00
2
DiveToBermudaTriangle 120
AsiaToday 880
3
News 100
MythBusters 100
PimpMyRide 700
```

Sample Output 1

```
980
```