In ACM ICPC, teams are ranked according to the most problems solved. Teams who solve the same number of problems are ranked by least total time. The total time is the sum of the time consumed for each problem solved. The time consumed for a solved problem is the time elapsed from the beginning of the contest to the submittal of the accepted run plus 20 penalty minutes for every previously rejected run for that problem regardless of submittal time. There is no time consumed for a problem that is not solved.

Given the data of the contest, you have to build the final score

Input

The first line contains two integers **T** (1 <= T <= 20), number of teams, **P** (1<= P <= 10) number of problems.
The next **T** lines are the team's names (one word per name).
The next line contains an integer **S** (1 <= S <= 1000), number of solutions sent.
The next **S** lines contains: the team name, the name of the problem (A, B, C, …), the time when this solutions was sent and the judgment (A = Accepted, W = Wrong Solution).

Output

The final score see the format in the sample.

Sample Input

```
5 2
UNO
DOS
TRES
CUATRO
CINCO
7
TRES A 15 A
CUATRO A 18 W
CINCO B 20 A
CUATRO A 20 A
CINCO A 25 A
TRES B 32 A
DOS B 38 A
```

Sample Output

```
1 - CINCO 2 45
2 - TRES 2 47
3 - DOS 1 38
4 - CUATRO 1 40
5 - UNO 0 -
```