Problem A. Who Can Win

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	1024 megabytes

In ICPC contests, the scoreboard is frozen during the last hour. Submissions made during the freeze are shown with result `Unknown`.

You are given multiple submission logs from old ICPC contests. However, the results of submissions made after the freeze are hidden. For each contest, determine all teams that could possibly be the champion.

Rules

Each submission is represented as a tuple:

$$(\text{teamname}, \text{problemid}, \text{time}, \text{result})$$

- **teamname**: a string of at most 10 characters, consisting of uppercase or lowercase letters and digits. It identifies the team that made the submission.
- **problemid**: a single uppercase letter (A–Z) that identifies the problem being attempted.
- **time**: an integer between 0 and 299, inclusive, representing the number of minutes from the start of the contest.
- **result**: the outcome of the submission:
  - `Accepted`: the submission correctly solves the problem.
  - `Rejected`: the submission does not solve the problem.
  - `Unknown`: the submission result is unknown because it was made after the scoreboard was frozen.
  - **Note: a submission has result Unknown if and only if its time $\geq$ 240.**

For a contest where all results are known, a team's score is determined by:

1. **Solved problems**: the number of problems for which this team has at least one `Accepted` submission.
2. **Penalty time**: the total time consumed by all problems that the team solved (0 if none).
   - For each solved problem, calculate the time as follows:
     (a) Take the submission time of the team's first Accepted submission for that problem.
     (b) Add 20 minutes for each of the team's submissions to the same problem that **occurred earlier in time** and had result `Rejected`.
   - A submission is considered earlier than another if its submission time is smaller.
   - **Note: a team will never make more than one submission in the same minute.**

A **champion team** is one with the highest number of solved problems and, among them, the smallest penalty time. Multiple champion teams may exist if they have the same number of solved problems and the same penalty time.

Please determine all teams that could possibly be champions for any scenario where each Unknown submission is replaced independently by either Accepted or Rejected.

Input

The first line contains an integer T ($1 \le T \le 10000$) — the number of contests.

For each contest:

- The first line contains an integer s ($1 \le s \le 10^5$) — the number of submissions for this contest.
- Each of the next s lines describes a submission in the format:

  teamname problemid time result

It is guaranteed that:

- $T \le 10000$ and $\sum s \le 10^5$ over all contests.
- `teamname` consists of at most 10 uppercase/lowercase letters and digits.
- `problemid` is a single uppercase letter (A–Z).
- `time` is an integer between 0 and 299, inclusive.
- `result` is `Accepted`, `Rejected`, or `Unknown`.
- Each contest has at least one `Accepted` submission.
- A team will never make more than one submission in the same minute.

Output

Output T lines, one for each contest. Each line contains all team names that could possibly be champions for that contest, in **lexicographical order**, separated by spaces.

Example

standard input	standard output
3 4 ASYYPIbf7 D 268 Unknown 3NhYHv8w B 13 Accepted ASYYPIbf7 B 173 Accepted dnrkAsPqrA A 107 Accepted 6 T1 A 10 Rejected T1 A 241 Unknown T1 B 200 Accepted T2 A 100 Accepted T3 C 50 Accepted T4 D 250 Unknown 4 Alpha A 100 Accepted Beta B 100 Accepted Gamma C 240 Unknown Delta D 299 Unknown	3NhYHv8w ASYYPIbf7 T1 T3 Alpha Beta