

As college students know, a course may have prerequisite courses that are supposed to be taken prior to taking the course. In this program, we input a course catalog with specified prerequisites and a transcript of courses taken by a student, and determine what prerequisite violations occurred, if any.

Input Format

The input consists of a *course catalog* (one line per course), followed by a blank line, followed by a *transcript* (one line per quarter). Each line of the course catalog contains the name (strings of non-blank characters) of a course and its (zero or more) prerequisites, separated by one or more blanks. Each line of the transcript contains the names of courses taken during a quarter, separated by one or more blanks. The transcript quarters appear in chronological order.

Output Format

For each course appearing in the transcript, determine if a prerequisite violation occurred, i.e. if any of its prerequisite courses was not taken in a preceding quarter. If a prerequisite violation occurs, output the name of the course and prerequisite not taken, formatted as in the output sample below.

Input Sample

```
mat105
mat114    mat105
cs130    mat105
cs140    mat105
cs141    cs140 mat114
cs210    cs130
cs240    cs130 cs141
cs241    cs240
cs264    cs210 cs240
cs311    cs241 cs264

mat114 cs130
cs140 cs210 cs141
cs264 cs240
cs241 cs311
```

Output Sample

```
mat114 taken without prerequisite mat105
cs130 taken without prerequisite mat105
cs140 taken without prerequisite mat105
cs141 taken without prerequisite cs140
cs264 taken without prerequisite cs240
cs311 taken without prerequisite cs241
```