









Problem: Week 8 - Analyze Code Submission of a Programming Contest

Description

Data about submission of a programming contest consists a sequence of lines, each line has the following information:

<UserID> <ProblemID> <TimePoint> <Status> <Point>

in which the user <UserID> submits his/her code to solve the problem <ProblemID> at time-point <TimePoint>, and gets status <Status> and point <Point>

- <UserID>: string of length from 3 to 10
- <ProblemID>: string under the format Pxy where x, y are digits 0,1,...,9 (for example P03, P10)
- <TimePoint>: string representing time-point with the format HH:MM:SS (for example, 09:45:20 means the time-point 9 hour 45 minutes 20 seconds)
- <Status>: string with two cases (ERR, OK)
- <Point>: integer from {0, 1, 2, ..., 10}

A user can submit the code for solving each problem several time. The point that the user gets for a problem is the maximal point among the submissions for that problem.

Perform a sequence of queries of following types:

- ?total_number_submissions: return the number of submissions of the contest
- ?number_error_submision: return the number of submissions having status ERR
- ?number_error_submission_of_user <UserID>: return the number of submission having status ERR of user <UserID>
- ?total_point_of_user <UserID>: return the total point of user <UserID>
- ?number_submission_period <from_time_point> <to_time_point>: return the number of submissions in the period from <from_time_point> to <to_time_point> (inclusive)

Input

The input consists of two blocks of data:

- The first block is the operational data, which is a sequence of lines (number of lines can be up to 100000), each line contains the information of a submission with above format .The first block is terminated with a line containing the character #
- The second block is the query block, which is a sequence of lines (number of lines can be up to 100000), each line is a query described above. The second block is terminated with a line containing the character #

Output

Write in each line, the result of the corresponding query

Example

Input

U001 P01 10:30:20 ERR 0

U001 P01 10:35:20 OK 10

U001 P02 10:40:20 ERR 0

U001 P02 10:55:20 OK 7

U002 P01 10:40:20 ERR 0

U001 P01 11:35:20 OK 8

U002 P02 10:40:20 OK 10

#

?total_number_submissions

?number_error_submision

?number_error_submision_of_user U002

?total_point_of_user U001

?number_submission_period 10:00:00 11:30:45

#

Output

7

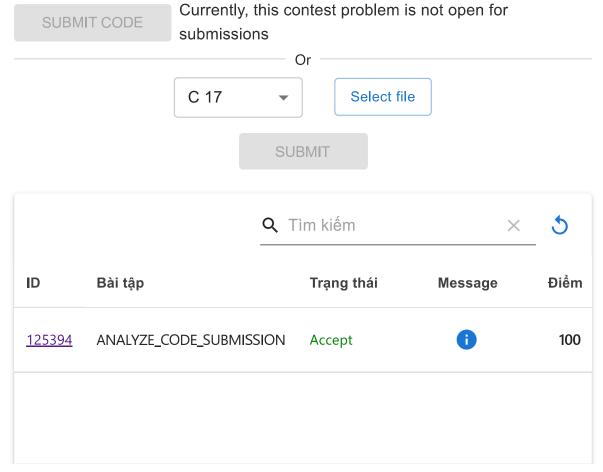
3

- 1

17

6

```
Sample TestCase
                                                   C 17
   1 Example
   2 Input
   3 U001 P01 10:30:20 ERR 0
   4 U001 P01 10:35:20 OK 10
   5 U001 P02 10:40:20 ERR 0
     U001 P02 10:55:20 OK 7
   7 U002 P01 10:40:20 ERR 0
   8 U001 P01 11:35:20 OK 8
     U002 P02 10:40:20 OK 10
  10
     #
  11 ?total_number_submissions
  12 ?number error submision
  13 ?number_error_submision_of_user U002
  14 ?total point of user U001
  15 ?number_submission_period 10:00:00 11:30:45
  16 #
  17
  18
  19 Output
  20 7
  21 3
  22 1
Source code
                                                   C 17
  1 //C
    #include <stdio.h>
    int main()
  5
  6
```



ID	Bài tập	Trạng thái	Message	Điểm