

1726 Automatic Cheater Detection

In recent times a very bad incident is happening repeatedly in Wonderland ((Poets Poets claim that she is the queen of all countries), questions of many public examination and admission tests are being leaked before the exam. The effect is less terrible when the exam involved is a written public exam, because still one has to go to exam halls and write things correctly. But if the exam involved has only MCQs (Multiple Choice Questions) the situation becomes grave — anyone who has a little bit of memorization power can get good marks if he gets MCQ questions with solution the day before the exam.



For technical reasons and added expenditure, such an MCQ based exam cannot always

be taken again. So you are given the responsibility of detecting cheaters of such an MCQ based exam. The details of this exam and cheater detection process is given below:

- (a) There are at most 50000 MCQ questions in the exam.
- (b) All questions have a difficulty, a status and a result associated with it. This difficulty is denoted with an integer d between 1 and 10 (Inclusive). The higher the value of d , the more difficult the question is. The status s can be either '1' (The question was leaked) or '0' (The question was not leaked). The result r is either 'c' (The answer given by the student is correct) or 'i' (The answer given by the student is incorrect). So a single MCQ question is denoted with two integers d , s and a character r .
- (c) A suspicious activity is counted when someone answers a leaked question with difficulty d_1 correctly but fails to answer a not leaked question with difficulty d_2 correctly and ($d_1 > d_2$).
- (d) Given the description of questions in a set (including the correctness of each question for a particular examinee) your job is to write a program to find the total number of suspicious activities for that examinee.

Input

First line of the input file contains a positive integer T ($T \leq 80$) which denotes the number of test cases. The description of each test case is given below:

Each test case starts with a positive integer Q ($1 \leq Q \leq 50000$) which denotes the number of questions in the exam and each of the next Q lines describes 1 MCQ question. Each of the line contains two integers d_i ($1 \leq d_i \leq 10$), s_i and a character r_i , here d_i denotes the difficulty, s_i denotes the status ('1' means it was leaked and '0' means that it was not leaked) and r_i denotes whether the examinee answered the question correctly (c) or incorrectly (i). In reality a day long MCQ exam does not have 50000 questions but this is just being given as input to test the efficiency of your algorithm as your program will be used to find cheaters among ten million students in a very short time.

Output

For each set of input produce one line of output. This line contains an integer which denotes the total number of suspicious activities for the given input.

Illustration of the Sample Input below:

In sample 1, one suspicious activity is that the first not leaked question was answered incorrectly but the second leaked question was answered correctly (Although first one had a higher difficulty). The other suspicious activity is that first not leaked question was answered incorrectly but the third leaked question was answered correctly (Although it had a higher difficulty). So the total no of suspicious activities is 2.

Similarly, in 2nd sample there are four suspicious activities with the answering of the following question pairs (Q2, Q1), (Q4, Q1), (Q2, Q3), (Q4, Q3)

Sample Input

```
2
4
2 0 i
3 1 c
4 1 c
5 1 i
4
2 0 i
4 1 c
3 0 i
5 1 c
```

Sample Output

```
2
4
```