# Problem 9 – Fast and Furious

You are given **records from traffic cameras** on the road. For each pair of cameras, you are given the distance and the speed limit between them. Each camera takes photos of car license plate numbers and **reports the numbers and the time of observation**. Find which cars are speeding.

A car travelling between two arbitrary points **A** and **B** on the road is speeding if its average speed is greater than the speed limit between these points. The average speed is calculated as follows:

## Input

* The input is read from the console.
* On the first line there is the single word **Roads:**
* The next few lines contain pairs of camera names, the distances between them and the maximum allowed speed (in km/h) between them. All camera names contain only letters and digits. The camera names and maximum speed are separated by a single space. Example:

**CameraA CameraB 100.23 50**

* On the next line there is the single word **Records:**
* The next few lines contain some camera records. Each record consist of a camera name, a license plate number and a time in 24-hour format (**hh:mm:ss**), separated by spaces. The license plate numbers contain **only letters and digits**. Example:

**CameraA CA1111AA 12:56:12**

* The last line contains the word **End** only.

## Output

* Print the license plate numbers of all speeding cars in alphabetical order, separated by new lines. Example:

**CA1111AA  
CA1212BB  
CHY0L042**

## Constraints

* The distances and speed limits are 32-bit floating point numbers with at most two digits after the decimal point.
* The number of cameras is in the interval [1; 10000].
* The number of records is in the interval [1; 100000].
* All data is collected in a single day.
* There will always be at least one speeding car.
* Time limit: **100 ms**. Allowed memory: **16 MB**.

## Sample Input and Output

|  |  |
| --- | --- |
| **Input** | **Output** |
| Roads:  Sofia Plovdiv 145.4 90  Plovdiv Varna 361.4 120.5  Varna Burgas 114.9 20  Burgas Plovdiv 252.9 42  Records:  CA1234AC Sofia 12:39:25  CA1234AC Plovdiv 13:40:12  CA1234AC Burgas 17:52:40  End | CA1234AC Plovdiv Burgas 48.56 15.62% |