

CSoD: Earliest Vehicle registration available

RTO office allocates numbers in an incremental order.

From area code 01

- 1) 01AA0001 is the number of the first vehicle registered.
- 2) 01AA0002 is the number of the second vehicle registered.
- 3) 01AB0001 is the number of the 10,000th vehicle registered.
- 4) 01BA0001 is the number of the 2,59,975th vehicle registered.

From area code 02

- 1) 02AA0001 is the number of the first vehicle registered.
- 2) 02AB0001 is the number of the 10,000th vehicle registered.

From area code 99

- 1) 99BA0001 is the number of the 2,59,975 vehicle registered.

You will be given the following details for each RTO office:

1. Last allocated registration number
2. List of all fancy numbers that are available before this last allocated registration number. These fancy numbers are reserved for users willing to pay more money.

And you will be given the above details for multiple RTO offices.

There is also a special provisioning for users to get a number containing a specific number pattern. Eg: The user could ask for a registration number containing "569".

When this input pattern is given, your task is to find the lowest possible registration number that contains this pattern from any of the RTO office. Note that the number could either be from the fancy number list or from the regular allocation.

Input Format

```

num_of_area_codes    input_number_pattern
area_code1 last_allocated_registration_number num_of_available_fancy_numbers
fancy_num1
fancy_num2
...
fancy_num_of_available_fancy_numbers
area_code2 last_allocated_registration_number_2 num_of_available_fancy_numbers_2
fancy_num1
fancy_num2
...
fancy_num_of_available_fancy_numbers_2

```

Constraints

None

Output Format

- Output the earliest vehicle registration number that contains the user specified pattern.
- If no such free vehicle registraion number is available, print the one that is available in the near future.
- If all such numbers are allocated, print "NOT FOUND"

Sample Input 0

```

3 0003
01 AA0009 3
AA0001
AA0003
AA0004
02 AB0019 5
AA0002
AA0004
AB0003
AB0004
AB0001
03 AA1000 2
AA0001
AA0012

```

Sample Output 0

```

01AA0003

```

Explanation 0

Earliest number that contains the user pattern of choice from area code 01 is AA0003

Earliest number that contains the user pattern of choice from area code 02 is AB0003

Earliest number that contains the user pattern of choice from area code 03 is AB0003

Earilest among these is 01 AA0003