

## Problem B: The Grand Social Gathering

Filename: *social*

Time limit: *4 seconds*

Welcome to The Grand Social Gathering! As the esteemed host, your duty is to orchestrate this magnificent affair flawlessly. You are tasked with managing the guest list, answering queries about attendees, and ensuring that the order of groups reflects the spirit of the gathering.

You'll guide guests through this enchanting experience, providing insights into the size of the group with a specified name and revealing about the next group's name in alphabetical order.

### The Problem:

Given a set of operations that involve adding, querying, and removing names. Your task is to efficiently manage the guest list, grouping people by name and sorting these groups alphabetically by the name.

### The Input:

The input comprises multiple scenarios, with the first line containing a positive integer,  $c$  ( $1 \leq c \leq 10$ ), representing the number of scenarios to be processed. Each scenario is outlined by the following lines:

- The first line has an integer  $n$  ( $1 \leq n \leq 10^5$ ), the number of operations to be performed.
- The next  $n$  lines detail the operations.
  - ``ADD name``: Welcome a new guest to the gathering.
  - ``QUERY name``: Inquire about the size of the group with the specified name.  
Additionally, provide information about the "next group" in alphabetical order, creating a sense of anticipation. If there is no other group after, print "None".
  - ``REMOVE name``: Bid farewell to an attendee with the specified name.
  - It is guaranteed that for QUERY and REMOVE there will be at least one person with the specified name.
  - Each **name** will consist of one uppercase letter followed by 0 to 19 lowercase letters, and none of the names will be "None"

### The Output:

For each ``QUERY`` operation, provide the count of people with the specified name and the name of the next group in alphabetical order. If there is no other group, print "None".

**Sample Input**

2  
6  
ADD Bob  
ADD Joe  
QUERY Bob  
QUERY Joe  
ADD Joe  
QUERY Joe  
17  
ADD Arun  
ADD Brennan  
ADD Austin  
ADD Austin  
QUERY Austin  
ADD Arun  
ADD Rahul  
REMOVE Arun  
ADD Brennan  
ADD Arun  
QUERY Brennan  
ADD Arun  
ADD Rahul  
QUERY Brennan  
REMOVE Brennan  
QUERY Arun  
QUERY Austin

**Sample Output**

1 Joe  
1 None  
2 None  
2 Brennan  
2 Rahul  
2 Rahul  
3 Austin  
2 Brennan