

Beli Eskrim



Di ITS University, mahasiswa sangat sibuk dengan tugas, proyek, praktikum, dan kegiatan anu. Karena itu, banyak mahasiswa sering datang ke kanpus di sela-sela kelas untuk membeli es-krim. Namun, mahasiswa di sini tidak suka menunggu terlalu lama dalam antrian biasa.

Setiap mahasiswa di ITS tergabung dalam satu dan hanya satu departemen, seperti Informatika, Teknik Elektro, Teknik Industri, atau Teknik Mesin. Jumlah mahasiswa dalam setiap departemen dapat berbeda-beda, dan setiap departemen dapat memiliki jumlah mahasiswa berapapun selama lebih dari nol. Karena mahasiswa dari departemen yang sama biasanya saling mengenal, mereka membuat aturan antrian khusus di kantin.

Jika seorang mahasiswa masuk ke antrian, ia terlebih dahulu mencari dari depan sampai belakang antrian untuk memeriksa apakah ada teman satu departemennya yang sudah berada di antrian. Jika ada, maka mahasiswa tersebut masuk tepat di belakang semua mahasiswa dari departemen yang sama. Jika tidak ada, maka ia masuk ke bagian paling belakang antrian dan menjadi orang terakhir.

Proses keluar dari antrian dilakukan seperti antrian biasa: mahasiswa dilayani dari depan ke belakang sesuai urutan mereka berada dalam antrian.

FORMAT INPUT

Baris pertama berisi sebuah bilangan bulat t , yaitu jumlah departemen di ITS University.

Untuk setiap departemen, input berisi satu baris. Setiap baris diawali dengan sebuah bilangan bulat n , yaitu jumlah mahasiswa dalam departemen tersebut, diikuti oleh n bilangan bulat yang merepresentasikan ID mahasiswa dari departemen tersebut.

Setiap perintah terdiri dari salah satu bentuk berikut:

ENQUEUE x

Mahasiswa dengan ID x masuk ke antrean kantin.

DEQUEUE

Mahasiswa yang berada di bagian paling depan antrean kantin dilayani dan keluar dari antrean.

FORMAT OUTPUT

Untuk setiap perintah DEQUEUE, cetak elemen yang dikeluarkan dari antrian pada satu baris.

CONSTRAINT

$1 \leq t \leq 1000$

$1 \leq n \leq 1000$

$0 \leq ID \leq 10^6$

CONTOH INPUT 1

```
2
3 1 2 3
3 4 5 6
ENQUEUE 1
ENQUEUE 4
ENQUEUE 2
ENQUEUE 5
ENQUEUE 6
ENQUEUE 3
DEQUEUE
DEQUEUE
DEQUEUE
DEQUEUE
DEQUEUE
```

CONTOH OUTPUT 1

```
1
2
3
4
5
6
```

CONTOH INPUT 2

```
3
3 11 12 13
3 24 25 26
3 47 48 49
ENQUEUE 11
ENQUEUE 47
ENQUEUE 48
ENQUEUE 12
ENQUEUE 24
ENQUEUE 49
DEQUEUE
DEQUEUE
DEQUEUE
ENQUEUE 13
DEQUEUE
DEQUEUE
DEQUEUE
```

CONTOH OUTPUT 2

```
11
12
47
48
49
24
```

Buy Ice Cream



In ITS University, students are very busy with assignments, projects, laboratories, and other activities. Because of that, many students like to visit the canteen between classes to buy some ice cream. However, ITS students do not like waiting in a normal queue for too long.

Every student in ITS belongs to one and only one department, such as Informatics, Electrical Engineering, Industrial Engineering, or Mechanical Engineering. The number of students in each department can be different, and each department can have any number of students as long as it has at least one student. Since students from the same department usually know each other, they make their own special queuing rule in the canteen.

If a student enters the queue, he first searches the queue from head to tail to check whether some of his department friends are already in the queue. If yes, he enters the queue right behind all students from the same department. If not, he enters the queue at the tail and becomes the new last element.

Dequeuing is done like in a normal queue: students are served from head to tail in the order they appear in the queue.

FORMAT INPUT

The first line contains an integer t , representing the number of departments in ITS University.

For each department, the input contains one line. Each line starts with an integer n , representing the number of students in that department, followed by n integers representing the student IDs of that department.

Each command consists of one of the following forms:

ENQUEUE x

A student with ID x enters the canteen queue.

DEQUEUE

The student at the front of the canteen queue is served and leaves the queue.

FORMAT OUTPUT

For each DEQUEUE command print the element which is dequeued on a single line.

CONSTRAINT

$1 \leq t \leq 1000$
 $1 \leq n \leq 1000$
 $0 \leq ID \leq 10^6$

CONTOH INPUT 1

```
2
3 1 2 3
3 4 5 6
ENQUEUE 1
ENQUEUE 4
ENQUEUE 2
ENQUEUE 5
ENQUEUE 6
ENQUEUE 3
DEQUEUE
DEQUEUE
DEQUEUE
DEQUEUE
DEQUEUE
DEQUEUE
```

CONTOH OUTPUT 1

```
1
2
3
4
5
6
```

CONTOH INPUT 2

```
3
3 11 12 13
3 24 25 26
3 47 48 49
ENQUEUE 11
ENQUEUE 47
ENQUEUE 48
ENQUEUE 12
ENQUEUE 24
ENQUEUE 49
DEQUEUE
DEQUEUE
DEQUEUE
ENQUEUE 13
DEQUEUE
DEQUEUE
DEQUEUE
```

CONTOH OUTPUT 2

```
11
12
47
48
49
24
```