

## 1. Applications of Linked List and Queue

Coco owns a theme park called "Istana Boneka" which uses boats to explore the ethnic cultures throughout Indonesia. **Each boat** can accommodate **4 visitors**. Coco sells 2 types of tickets, namely **FAST\_TRACK** and **REGULER**. The **FAST\_TRACK** ticket allows visitors to skip the **REGULER** queue and get priority. If visitors have the same type of ticket, the first one to register will be given priority (**First In First Serve**). To make it easier, Coco wants to create a queue program using the **priority queue concept** with a double linked list. The program has 3 main features:

**REGISTER**, used to add visitors. The REGISTER feature has the format **REGISTER N1**, where **N1** is the **number of visitors** who want to play. In the next line, program will ask you to enter **name visitor** and **ticket types** according to the number of N1. After successfully adding, the queue list will be displayed in the format "No Name Ticket".

**CALL**, used to call the **top 4 visitors** in the queue. After successfully called, the list of visitors who board the boat will be show in the format "**[list of visitors] got into the boat**" and **the remaining queue** in the format "**[total remaining queue] queues remaining**". If there **are less than 4 visitors in the queue**, only those visitors in the queue will be called.

**REMOVE**, used to remove visitors who did not show up. The **REMOVE** feature has the format **REMOVE N2**, where **N2** is the number of visitors who did not show up. In the next line, program will ask you enter names of visitors who did not show up according to the number of N2. After successfully removing, the queue list will be displayed in the format "No Name Ticket".

Constraints:

$1 \leq N1 \leq 1000$

$1 \leq N2 \leq 1000$

$1 \leq |\text{name of visitor}| \leq 10$

$1 \leq |\text{ticket types}| \leq 10$

$|\text{name of visitor}|$  is the length of the string (1 word)

$|\text{ticket types}|$  is the length of the string (1 word)

Sample:

Input	Output
REGISTER 7 Ani FAST_TRACK Bani REGULER Cani FAST_TRACK Dani REGULER Eni FAST_TRACK Fani REGULER Gani REGULER REMOVE 2 Bani Dani REGISTER 2 Ani FAST_TRACK Bani REGULER CALL CALL	<p>No Name      Ticket</p> <p>1    Ani      FAST_TRACK</p> <p>2    Cani     FAST_TRACK</p> <p>3    Eni      FAST_TRACK</p> <p>4    Bani     REGULER</p> <p>5    Dani     REGULER</p> <p>6    Fani     REGULER</p> <p>7    Gani     REGULER</p> <p>No Name      Ticket</p> <p>1    Ani      FAST_TRACK</p> <p>2    Cani     FAST_TRACK</p> <p>3    Eni      FAST_TRACK</p> <p>4    Fani     REGULER</p> <p>5    Gani     REGULER</p> <p>No Name      Ticket</p> <p>1    Ani      FAST_TRACK</p> <p>2    Cani     FAST_TRACK</p> <p>3    Eni      FAST_TRACK</p> <p>4    Ani      FAST_TRACK</p> <p>5    Fani     REGULER</p> <p>6    Gani     REGULER</p> <p>7    Bani     REGULER</p> <p>Ani Cani Eni Ani got into the boat. 3 queues remaining. Fani Gani Bani got into the boat. 0 queues remaining.</p>

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Fani REGULER
Gani REGULER
No  Name      Ticket
1   Ani       FAST_TRACK
2   Candi     FAST_TRACK
3   Eni       FAST_TRACK
4   Bani      REGULER
5   Dani      REGULER
6   Fani      REGULER
7   Gani      REGULER

REMOVE 2
Bani
Dani
No  Name      Ticket
1   Ani       FAST_TRACK
2   Candi     FAST_TRACK
3   Eni       FAST_TRACK
4   Fani      REGULER
5   Gani      REGULER

REGISTER 2
Ani FAST_TRACK
Bani REGULER
No  Name      Ticket
1   Ani       FAST_TRACK
2   Candi     FAST_TRACK
3   Eni       FAST_TRACK
4   Ani       FAST_TRACK
5   Fani      REGULER
6   Gani      REGULER
7   Bani      REGULER

CALL
Ani Candi Eni Ani got into the boat.
3 queues remaining.
CALL
Fani Gani Bani got into the boat.
0 queues remaining.

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\*Answer the case on Dev C++. The file extension to be uploaded is .c

-- Selamat Mengerjakan --