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FMBQUEUE

? Ask Doubt

Time-Limit: 1 sec Score: 0/100 Difficulty :

Memory: 256 MB Accepted Submissions: 100 Relevant For: AZ-201

Description

Design a queue that supports push and pop operations in the front, middle, and back.

Input Format

Implement the FrontMiddleBack class:

- FrontMiddleBack() : Initializes the queue.
- void pushFront(int val) : Adds val to the **front** of the queue.
- void pushMiddle(int val) : Adds val to the **middle** of the queue.
- void pushBack(int val) : Adds val to the **back** of the queue.
- int popFront() : Removes the **front** element of the queue and returns it. If the queue is empty, return -1.
- int popMiddle() : Removes the **middle** element of the queue and returns it. If the queue is empty, return -1.
- int popBack() : Removes the **back** element of the queue and returns it. If the queue is empty, return -1.

Note: When there are **two** middle position choices, the operation is performed on the **left** middle position choice. For example:

- Pushing 6 into the middle of [1, 2, 3, 4, 5] results in [1, 2, 6, 3, 4, 5].
- Popping the middle from [1, 2, 3, 4, 5, 6] returns 3 and results in [1, 2, 4, 5, 6].

Output Format

For every *pop* function, return the popped element.

Constraints

$1 \le val \le 10^9$

At most 10^5 calls will be made to pushFront, pushMiddle, pushBack, popFront, popMiddle, and popBack.

Sample Input 1

Copy

```
9
pushFront 1
pushBack 2
pushMiddle 3
pushMiddle 4
popFront
popMiddle
popMiddle
popBack
popFront
```

C++14[GCC]

Submit

```
1  #include <bits/stdc++.h>
2  using namespace std;
3
4  class FrontMiddleBackQueue
```