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Circular Deque

? Ask Doubt

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

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

Description

Design your implementation of the circular double-ended queue (deque).

Your implementation should support the following operations:

1. **MyCircularDeque(k)**: Constructor, set the size of the deque to be k.
2. **insertFront()**: Adds an item at the front of Deque. Return true if the operation is successful.
3. **insertLast()**: Adds an item at the rear of Deque. Return true if the operation is successful.
4. **deleteFront()**: Deletes an item from the front of Deque. Return true if the operation is successful.
5. **deleteLast()**: Deletes an item from the rear of Deque. Return true if the operation is successful.
6. **getFront()**: Gets the front item from the Deque. If the deque is empty, return -1.
7. **getRear()**: Gets the last item from Deque. If the deque is empty, return -1.
8. **isEmpty()**: Checks whether Deque is empty or not.
9. **isFull()**: Checks whether Deque is full or not.

Do it without using STL in C++. All operations should be O(1).

Input Format

The first line of input contains *Q* - the number of queries.
The second line contains *k.*
Each of the next lines contains queries of one of the types mentioned in the problem statement.

Constraints

$1 \le k, Q \le 10^6$

Sample Input 1

Copy

```
9
3
insertLast 1
insertLast 2
insertLast 3
insertLast 4
getRear
isFull
deleteLast
insertFront 4
getFront
```

C++14[GCC]

Submit

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