MinQueue

Min Queue uses the concept of linked list. It has the following functions:

1) Default constructor: initialize a queue list. It takes O(1) time.

```
create a queue.
Queue:
```

2) Destructor constructor: destroy a queue list. It takes O(N) time because it deletes one by one.
3) Enqueue(): insert an element to the back of the list. It uses insertLast() function from Linked List. It takes O(1) time because it accesses the trailer and put the element before trailer.

```
push 10 elements
Queue: 10 9 8 7 6 5 4 3 2 1
```

4) Dequeue(): delete an element of the front of the list. It uses removeFirst() function from Linked List. It takes O(1) time because it accesses the header and remove the element after header.

```
pop 2 elements
Queue: 8 7 6 5 4 3 2 1
```

5) printQueue(): print out all of the nodes. It uses operator << of the doubly linked list class. It takes O(N) time because it has to iterate through all nodes of list to print.
6) Size(): find the length of linked list. It uses DoublyLinkedListLength() function. It takes O(N) time because it has to iterate through all nodes of list to count the total.

```
Queue: 10 9 8 7 6 5 4 3 2 1
size: 10
```

7) isEmpty(): checks if the list is empty. It takes O(1) time.

```
create a queue.
Queue:
Queue is empty
```

8) min(): find the minimum element of the list. It takes O(N) time because it iterates through the whole queue to find the minimum object.

```
Queue: 8 7 6 5 4 3 2 1
size: 8
min: 1
```