DATA STRUCTURES HOMEWORK 3

The problem was to define a class that processes waiting list of customers using Deque ADT. Firstly, 4 classes are defined as RestaurantWaitList, Node, RestaurantWaitListQueueLinkedList and TestRestaurant. In the RestaurantWaitList class, required fields are determined and constructor is generated. In the Node class, fields that need for doubly linked list are determined. In the RestaurantWaitListQueueLinkedList, required fields and functions are determined. In the TestRestaurant class the program is tested under the desired conditions.

Program output:

{ Customer [number=c1, arrival time=3.0pm, waiting time=0.0, table number=1] }

{ Customer [number=c2, arrival time=3.0pm, waiting time=0.0, table number=2] }

{ Customer [number=c3, arrival time=3.0pm, waiting time=0.0, table number=3] }

{ Customer [number=c4, arrival time=3.0pm, waiting time=0.0, table number=4] }

{ Customer [number=c5, arrival time=3.0pm, waiting time=0.0, table number=5] }

{ Customer [number=c6, arrival time=3.0pm, waiting time=0.0, table number=1] }

{ Customer [number=c7, arrival time=3.0pm, waiting time=0.0, table number=2] }

{ Customer [number=c8, arrival time=3.0pm, waiting time=0.0, table number=3] }

{ Customer [number=c9, arrival time=3.1pm, waiting time=0.0, table number=4] }

{ Customer [number=c10, arrival time=3.2pm, waiting time=0.0, table number=5] }

{ Customer [number=c11, arrival time=3.3pm, waiting time=0.0, table number=1] }

{ Customer [number=c12, arrival time=3.4pm, waiting time=0.0, table number=2] }

{ Customer [number=c1, arrival time=3.0pm, waiting time=0.0, table number=1] }

{ Customer [number=c2, arrival time=3.0pm, waiting time=0.0, table number=5] }

{ Customer [number=c3, arrival time=3.0pm, waiting time=0.0, table number=3] }

{ Customer [number=c4, arrival time=3.0pm, waiting time=0.0, table number=4] }

{ Customer [number=c5, arrival time=3.0pm, waiting time=0.0, table number=5] }

{ Customer [number=c6, arrival time=3.0pm, waiting time=0.0, table number=1] }

{ Customer [number=c7, arrival time=3.0pm, waiting time=0.0, table number=2] }

{ Customer [number=c8, arrival time=3.0pm, waiting time=0.0, table number=3] }

{ Customer [number=c9, arrival time=3.1pm, waiting time=0.0, table number=4] }

{ Customer [number=c10, arrival time=3.2pm, waiting time=0.0, table number=5] }

{ Customer [number=c11, arrival time=3.3pm, waiting time=0.0, table number=1] }

{ Customer [number=c12, arrival time=3.4pm, waiting time=0.0, table number=2] }

Size: 12

Front: Customer [number=c1, arrival time=3.0pm, waiting time=0.0, table number=1]

Rear: Customer [number=c12, arrival time=3.4pm, waiting time=0.0, table number=2]

Removed Element: Customer [number=c1, arrival time=3.0pm, waiting time=0.0, table number=1]

Size: 11

Front: Customer [number=c2, arrival time=3.0pm, waiting time=0.0, table number=5]

Rear: Customer [number=c12, arrival time=3.4pm, waiting time=0.0, table number=2]

Size: 11

Front: Customer [number=c2, arrival time=3.0pm, waiting time=0.0, table number=5]

Rear: Customer [number=c12, arrival time=3.4pm, waiting time=0.0, table number=2]

Removed Element: Customer [number=c2, arrival time=3.0pm, waiting time=0.0, table number=5]

Size: 10

Front: Customer [number=c3, arrival time=3.0pm, waiting time=0.0, table number=3]

Rear: Customer [number=c12, arrival time=3.4pm, waiting time=0.0, table number=2]