152113022 VERİ YAPILARI LABORATUVARI LAB

LAB WORK 6

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Objectives:

- Queue using queue library

Question1:

This question, it is aimed to use the basic queue structure and control operations. The menu definition gathers all these processes under a single structure.

- Firstly, create a menu as shown below.
  "What Operation Do You Want to Perform? Select Option Number. Enter 0 to Exit."
  "1. Enqueue()"
  "2. Dequeue()"
  "3. IsEmpty()"
  "4. IsFull()"
  "5. Count()"
  "6. Display()"
  "7. Clear Screen"
- Define the required functions for each item in the menu using the queue data structure.
- Get a number from the user in the menu selection.
- Include the necessary control codes to prevent invalid menu selections.

Output:

```
What operation do you want to perform? Select Option number. Enter 0 to exit.
1. Enqueue()
2. Dequeue()
3. isEmpty()
4. isFull()
5. count()
6. display()
7. Clear Screen

1
Enqueue Operation
Enter an item to Enqueue in the Queue
9


What operation do you want to perform? Select Option number. Enter 0 to exit.
1. Enqueue()
2. Dequeue()
3. isEmpty()
4. isFull()
5. count()
6. display()
7. Clear Screen

3
Queue is not Empty


What operation do you want to perform? Select Option number. Enter 0 to exit.
1. Enqueue()
2. Dequeue()
3. isEmpty()
4. isFull()
5. count()
6. display()
7. Clear Screen

4
Queue is not Full
```

Question2:
A palindrome is a sentence, word, or number that can be read backwards as well.

- Write C++ code to determine whether a given string is a palindrome, with **stack** and **queue** structures.
- Assume that punctuation, capital letters, and spaces are omitted.

Output:

```
Bir ifade giriniz
Merhaba
Girdiginiz ifade palindrom degildir!
```

```
Bir ifade giriniz
784521125487
Girdiginiz ifade bir palindromdur!
```

Question3:
In this question, you are asked to sort in the queue data structure.

- First get the queue size from the user.
- Get numbers from the user as the size entered.
- Write the function that sorts the elements in the queue.
- Print the original and sorted queue to the screen.

Output:

```
Please Enter the number of elements : 5
Please enter element in queue
5
2
4
9
7
Original Queue
5 2 4 9 7
Sorted Queue
2 4 5 7 9
```

Good Luck!