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Data Structures and algorithm (CS09203)

Lab Report

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Experiment # 2

Data entry into array using Que

Objective

To understand How to Handle data into array using Que.

Software Tool

1. Ubuntu Linux
2. Sublime text
3. G++

1 Theory

In this experiment we learn how to handle our data in an array using The concept of Que, and learn the basics of Link listing in c++ using Que.

It has 2 rules:

1. Front should not be equal to rear.
2. Your data should not reach the max size of your array .

2 Task

2.1 Procedure: Task 1

In this We enter our data into an array which contains 3 numbers

2.2 Procedure: Task 2

```
#include<iostream>
#include<stdio.h>
#include <unistd.h>
#include<cstdlib>
```

```
noobster@noobster-VirtualBox: ~/Desktop/Labtasks/LAB2
Quee Main Menu

Press 1 to Enter Data
Press 2 to Display Data
Press 3 to Remove Data
Press 4 to Exit
Choose From above: █
```

Figure 1: Main menu of my program

```
noobster@noobster-VirtualBox: ~/Desktop/Labtasks/LAB2
Quee Current Data

22
11
90
123
2
Want to continue? y/n █
```

Figure 2: New entry into array using Que

```

#define SIZE 5
using namespace std;
int Data[SIZE];
int front=-1;
int rear=-1;
void Enter(int m) {
    if(rear>4) {
        cerr<<"Que_is_full!!\n";
        front=rear=-1;
    }else {
        Data[++rear]=m;
        cout<<"\nSucessfully Entered your data!!\n";
    }
}

void Delete() {
    if(front==rear) {
        cerr<<"Queue_is_Empty!!\n";
    }else {
        cout<<"Deleted_"<<Data[++front]<<endl;
    }
}

void display()
{
    if(rear==front)
    {
        cout <<"_queue_empty\n";
        return;
    }
    for(int i=front+1;i<=rear;i++)
        cout <<Data[i]<<"\n";
}

void list() {
    cout<<"\t\t\t\tQueue_Main_Menu\n\n";
    cout<<"Press_1_to_Enter_Data\n";
    cout<<"Press_2_to_Display_Data\n";
    cout<<"Press_3_to_Remove_Data\n";
    cout<<"Press_4_to_Exit\n";
}

```

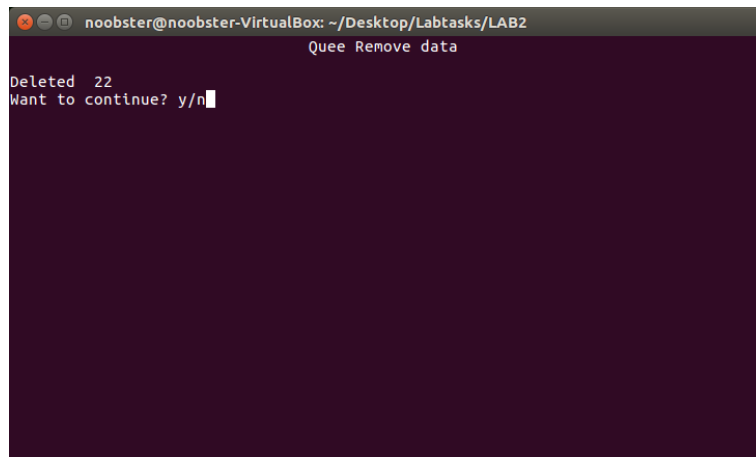
```

int choice;
string Ask="y";
int input;
int main()
{
    do {
system("clear");
list();
cout<<"Choose_From_above:_";
cin>>choice;
switch (choice){
    case 1:
    do {
        system("clear");
        cout<<"\t\t\t\tQueue_Data_Entry\n\n";
        cout<<"Enter_a_number:_";
        cin>>input;
        Enter(input);
        cout<<"Want_to_continue?_y/n";
        cin>>Ask;
        }while(Ask!="n");
    break;
    case 2:
    do {
        system("clear");
        cout<<"\t\t\t\tQueue_Current_Data\n\n";
        display();
        cout<<"Want_to_continue?_y/n";
        cin>>Ask;
        }while(Ask!="n");
    break;
    case 3:
    do {
        system("clear");
        cout<<"\t\t\t\tQueue_Remove_data\n\n";
        Delete();
        cout<<"Want_to_continue?_y/n";
        cin>>Ask;
        }while(Ask!="n");
    break;

```

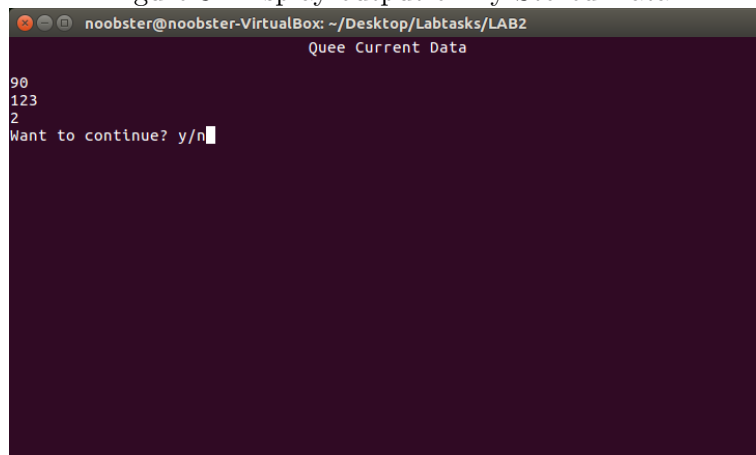
```
    }  
} while (choice != 4);  
return 0;  
}
```

3 Output:



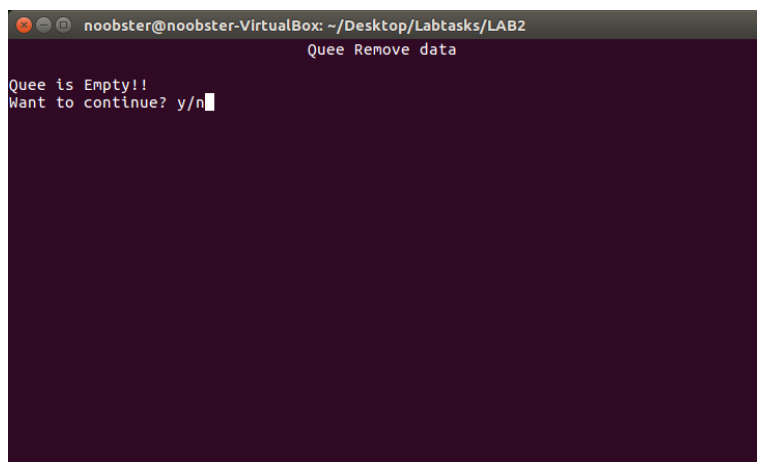
```
noobster@noobster-VirtualBox: ~/Desktop/Labtasks/LAB2
Quee Remove data
Deleted 22
Want to continue? y/n
```

Figure 3: Display output of my Stored Data



```
noobster@noobster-VirtualBox: ~/Desktop/Labtasks/LAB2
Quee Current Data
90
123
2
Want to continue? y/n
```

Figure 4: Replace no array loacation Bilal With Junaid

A terminal window with a dark purple background and a grey title bar. The title bar contains the text 'noobster@noobster-VirtualBox: ~/Desktop/Labtasks/LAB2'. The terminal displays the text 'Quee Remove data' on the first line. On the second line, it says 'Quee is Empty!!'. On the third line, it asks 'Want to continue? y/n' followed by a cursor. The rest of the terminal is empty.

```
noobster@noobster-VirtualBox: ~/Desktop/Labtasks/LAB2
Quee Remove data
Quee is Empty!!
Want to continue? y/n
```

Figure 5: Replaced Bilal with junaid in array location 2

4 Conclusion:

So In this Program we come to conclusion how to Handle our data into array using Que.

Concept of front and rear in Que the two way process