

DSA Lab

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Lab # 5

Priority Queue Implementation

LAB Journal

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Lab 5: Priority Queue Implementation

TASK:

Admin, Faculty, student

Lab Task GitHub Link:

[Link](#)

CODE:

```
#include<iostream>

using namespace std;

class DynamicQuene {
private:
    int* arr;
    int size;
    int currentSIZE;
    int front;
    int rear;
    int* value;

public:
    //s is the size of the array
    DynamicQuene(int s) {
        arr = new int[s];
        size = s; //size of the array
        currentSIZE = 0; //current size of the array
        front = -1;
        rear = -1;
        value = new int[s];
    }

    void insert(int value) {
        //when the quene capacity gets full
        if (currentSIZE == size) {
            cout << "Quene Overflow" << endl;
            return;
        }
        rear = (rear + 1) % size;
        arr[rear] = value;
        currentSIZE++;
        if (front == -1)
            front = rear;
    }
}
```

```

    }
    void remove() {
        value = &arr[front];
        front = (front + 1) % size;
        currentSIZE--;
    }
    void show() {
        for (int i = 0; i < currentSIZE ; i++)
        {
            int index = (front + i) % size;
            if (index > rear)
                return;
            cout << arr[index] << endl;
        }
    }
};

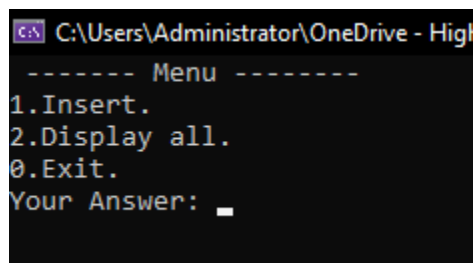
int main() {
    DynamicQuene s(5);
    cout << "Before Removing From Queue" << endl;
    s.insert(1);
    s.insert(2);
    s.insert(3);
    s.show();
    cout << "After Removing(1,2) From Queue" << endl;
    s.remove();
    s.remove();
    s.show();
    cout << "After Inserting Two Values in Queue." << endl;
    s.insert(1);
    s.insert(2);
    s.show();
    s.insert(6);

}

```

OUTPUT:

- MENU:



```

C:\Users\Administrator\OneDrive - High
----- Menu -----
1.Insert.
2.Display all.
0.Exit.
Your Answer: 

```

- Insert:

```
C:\Users\Administrator\OneDrive - Higher Education Commission\Documents>
Enter Username: Asim
Admin(A)
Faculty(F)
Student(S)
Enter Role:S
```

```
C:\Users\Administrator\OneDrive - Higher Education Commission\Documents>
Enter Username: Aamir
Admin(A)
Faculty(F)
Student(S)
Enter Role:A
Inserted!
Press any key to continue . . .
```

```
C:\Users\Administrator\OneDrive - Higher Education Commission\Documents>
Enter Username: Ahmed
Admin(A)
Faculty(F)
Student(S)
Enter Role:F
Inserted!
Press any key to continue . . .
```

- Display

```
C:\Users\Administrator\OneDrive - Higher Education Commission\Documents>
Aamir
Ahmed
Asim
Press any key to continue . . .
```