

ASSIGNMENT-DAY-7

Question 1

Write a program implementing insert, delete and display operation of Circular Queue.

```
#include <iostream>
using namespace std;
int cqueue[5];
int front = -1, rear = -1, n=5;
void insertCQ(int val) {
    if ((front == 0 && rear == n-1) || (front == rear+1)) {
        cout<<"Queue Overflow \n";
        return;
    }
    if (front == -1) {
        front = 0;
        rear = 0;
    }
    else {
        if (rear == n - 1)
            rear = 0;
        else
            rear = rear + 1;
    }
    cqueue[rear] = val ;
}
void deleteCQ() {
    if (front == -1) {
        cout<<"Queue Underflow\n";
        return ;
    }
    cout<<"Element deleted from queue is : "<<cqueue[front]<<endl;
    if (front == rear) {
        front = -1;
        rear = -1;
    }
    else {
        if (front == n - 1)
            front = 0;
        else
            front = front + 1;
    }
}
void displayCQ() {
    int f = front, r = rear;
    if (front == -1) {
        cout<<"Queue is empty"<<endl;
        return;
    }
    cout<<"Queue elements are :\n";
    if (f <= r) {
        while (f <= r){
            cout<<cqueue[f]<<" ";
            f++;
        }
    }
    else {
        while (f <= n - 1) {
            cout<<cqueue[f]<<" ";
            f++;
        }
        f = 0;
        while (f <= r) {
            cout<<cqueue[f]<<" ";
            f++;
        }
    }
    cout<<endl;
}
int main() {
    int ch, val;
    cout<<"1)Insert\n";
    cout<<"2)Delete\n";
    cout<<"3)Display\n";
    cout<<"4)Exit\n";
    do {
        cout<<"Enter choice : "<<endl;
```

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```
cin>>ch;
switch(ch) {
    case 1:
        cout<<"Input for insertion: "<<endl;
        cin>>val;
        insertCQ(val);
        break;
    case 2:
        deleteCQ();
        break;
    case 3:
        displayCQ();
        break;
    case 4:
        cout<<"Exit\n";
        break;
    default: cout<<"Incorrect!\n";
}
} while(ch != 4);
return 0;
}
```