```
/*
                        ASSIGNMENT NO. 3

    NAME- ABRAR SHAIKH                        ROLL NO. - 23570
                        TOPIC- Circular Queue
*/


#include <iostream>
#define MAXSIZE 3
using namespace std;
int queue[MAXSIZE], rear=-1,front=-1;
void display()
{
    cout<<endl;


    if(front==-1)
        cout<<endl<<"Queue is empty";


    else
    {
        for(int i=front; i<=rear; i++)
        {
            cout<<queue[i]<<" is present at "<<i<<endl;
        }
    }
}


void insert(int ele)
{
    if(front==(rear+1)%MAXSIZE)
        cout<<"Queue is full";
```

```cpp
        else
        {
              if(front==-1)
                    front=0;


              rear=(rear+1)%MAXSIZE;
              queue[rear]=ele;
        }
}


void del()
{
      int s;

      if(front==-1)
            cout<<endl<<"Queue is empty";


      else
      {
            if ((front == -1) || (front > rear))
            {
                  cout<<"Queue is Empty"<<endl;
            }
            else
            {
                  int element = queue[front];
                  front = (front + 1) % MAXSIZE;
                  cout<<"The element "<<element<<" has been deleted
from the queue"<<endl;
```
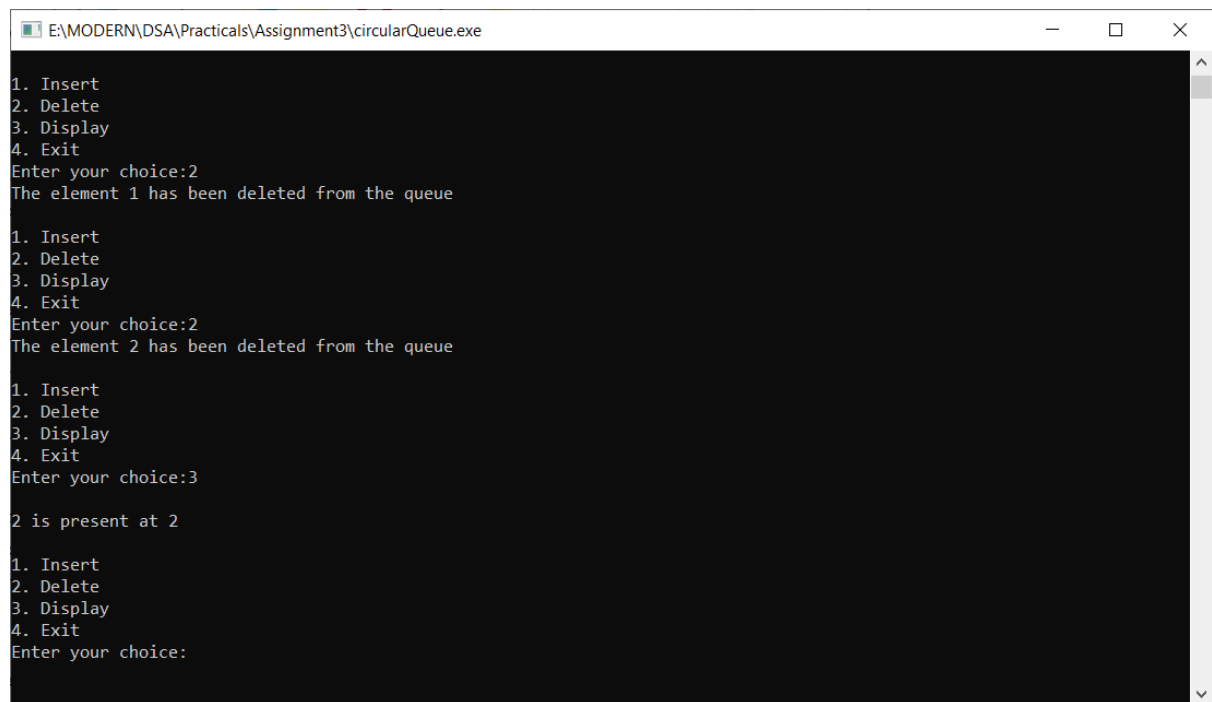
```cpp
                    if (rear == (MAXSIZE - 1) && (front == 0) || (front
> rear))
                    {
                            front = -1;
                            rear = -1;
                    }
            }
        }

}


int main()
{
    int ele,size,ch;

    do
    {
        cout<<endl<<"1. Insert \n2. Delete \n3. Display \n4.
Exit";
        cout<<endl<<"Enter your choice:";
        cin>>ch;

        switch(ch)
        {
            case 1:
                cout<<endl<<"Enter element:";
                cin>>ele;
                insert(ele);
                break;

            case 2:
```

```cpp
                del();
                break;

        case 3:
                display();
                break;

        case 4:
                return 0;

        default:
                cout<<endl<<"Invalid choice";
                break;
    }
}while(ch!=4);
return 0;
}
```

```
1. Insert
2. Delete
3. Display
4. Exit
Enter your choice:1

Enter element:1

1. Insert
2. Delete
3. Display
4. Exit
Enter your choice:3

1 is present at 0

1. Insert
2. Delete
3. Display
4. Exit
Enter your choice:1

Enter element:2

1. Insert
2. Delete
3. Display
4. Exit
Enter your choice:1
```

```
Enter your choice:1

Enter element:2

1. Insert
2. Delete
3. Display
4. Exit
Enter your choice:1

Enter element:3

1. Insert
2. Delete
3. Display
4. Exit
Enter your choice:3

1 is present at 0
2 is present at 1
3 is present at 2

1. Insert
2. Delete
3. Display
4. Exit
Enter your choice:
```

```
E:\MODERN\DSA\Practicals\Assignment3\circularQueue.exe                          —    □    ×

1. Insert
2. Delete
3. Display
4. Exit
Enter your choice:2
The element 1 has been deleted from the queue

1. Insert
2. Delete
3. Display
4. Exit
Enter your choice:2
The element 2 has been deleted from the queue

1. Insert
2. Delete
3. Display
4. Exit
Enter your choice:3

2 is present at 2

1. Insert
2. Delete
3. Display
4. Exit
Enter your choice:
```

Github Repo:

https://github.com/abssha/DSA.git