```cpp
/*
                            ASSIGNMENT NO. 2

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                            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:
```
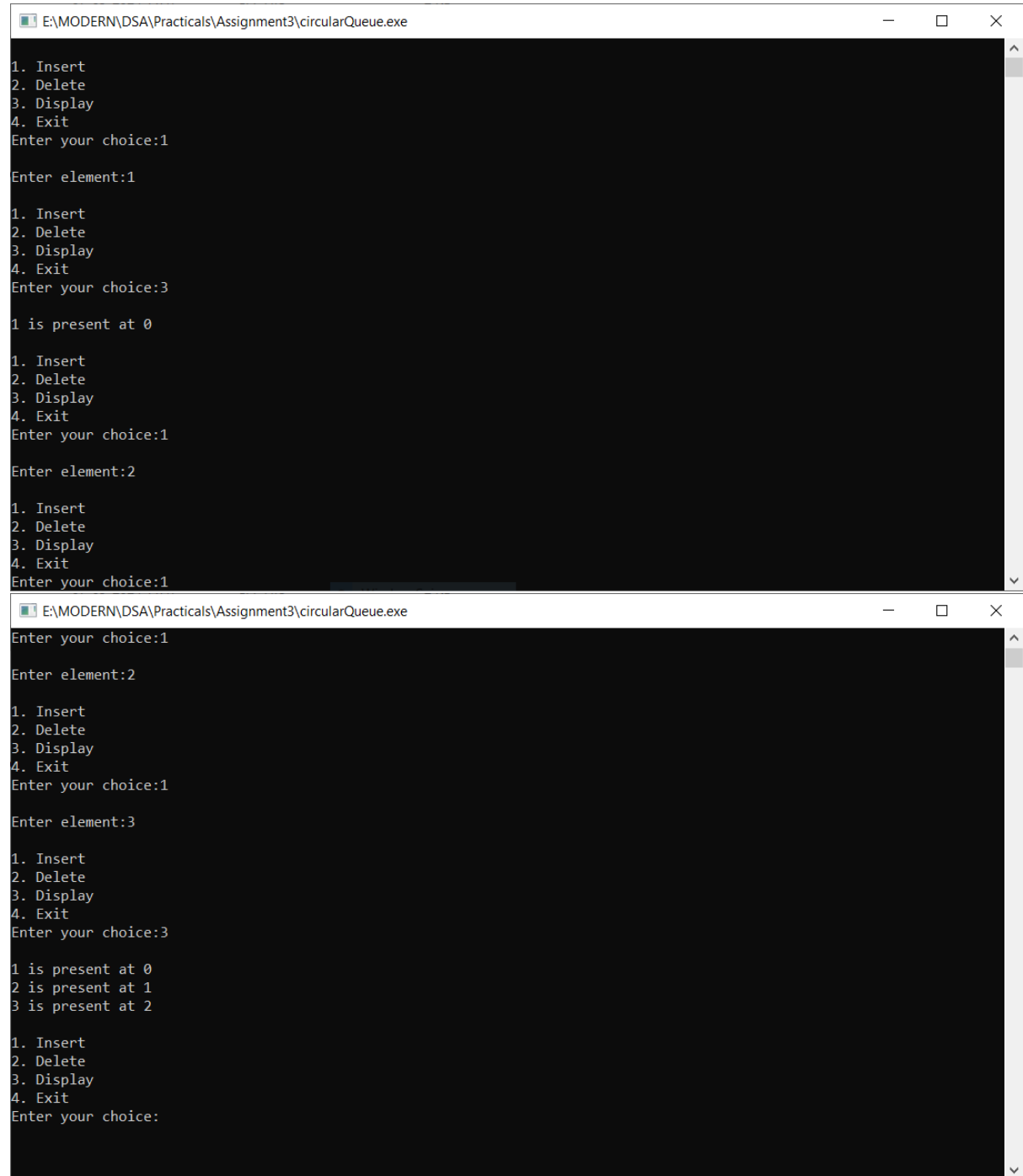
```cpp
                    del();
                    break;

            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
```
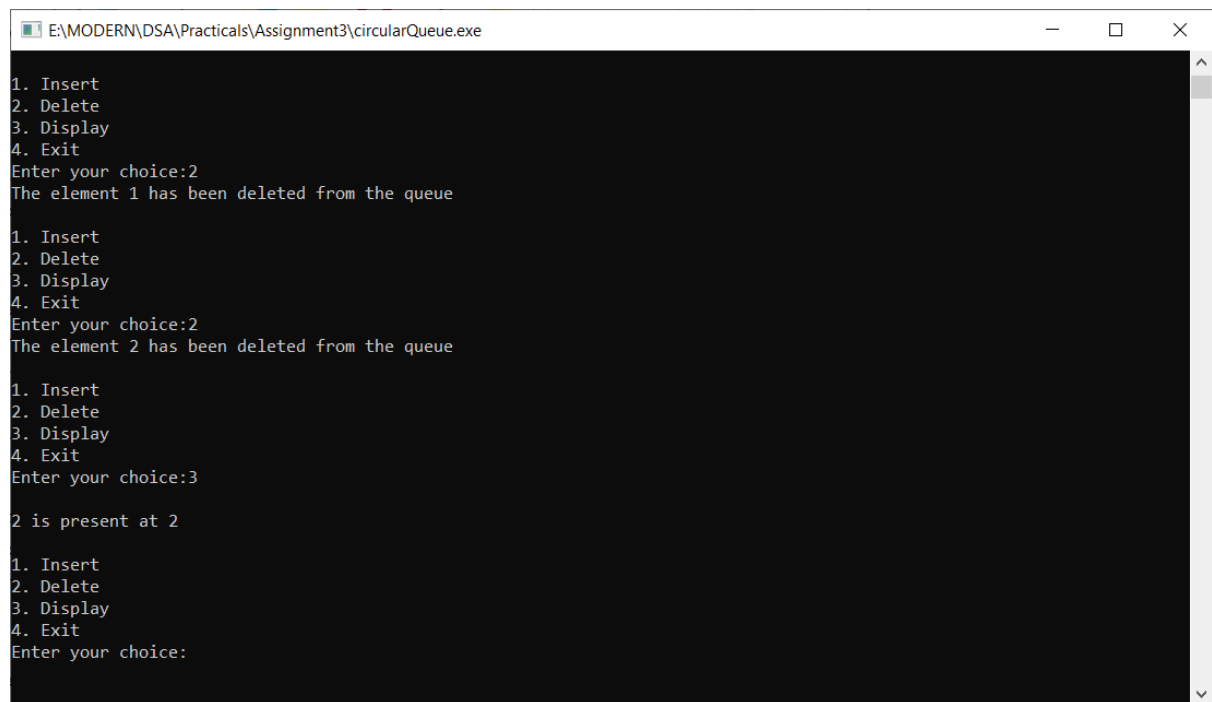
```
Enter your choice:1

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