```c
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>
#define max 20

int q[max], rear=-1, front=-1;
int isFull();
int isEmpty();
void insert (int element);
int delete();
void display();

void main()
{
    int choice, element;
    while(1)
{
    printf("Enter choice\n");
    printf("1.Insert\n2.Delete\n3.Display\n4.Exit\n\n");
    scanf("%d", &choice);
switch(choice)
{
    case 1:
    printf("Enter element to be inserted\n");
    scanf("%d", & element);
    insert(element);
    break;
    case 2:
    element=delete();
    break;
    case 3:
    display();
    break;
    case 4:
    exit(0); break;
    default:
    printf("Incorrect Input\n");
    break;
}
}
}

int isFull()
```

```
{
    if((front==rear+1)||(front==0 && rear==max-1))
        return 1;
    return 0;
}

int isEmpty()
{
    if(front==-1)
        return 1;
    return 0;
}

void insert(int element)
{
    if (isFull())
    {     printf("Overflow\n");
    }
    else
    {
        if(front==-1)
            front=0;
        rear=(rear+1)%max;
        q[rear]=element;
    }
}

int delete()
{
    int value;
    if (isEmpty())
    {
        printf("Underflow\n");
        return -1;
    }
    else{
        value=q[front];
        if(front==rear)
    {
    front==-1;
    rear==-1;
}
else
```

```
{
    front=(front+1)%max;
}
return(value);
}}

void display()
{
    int i;
    if(isEmpty())
        printf("Underflow\n");
    else{
        for(i=front;i!=rear;i=(i+1)%max)
            printf("%d\t",q[i]);
        printf("%d\t",q[i]);
        printf("\n");
        }
        }
```

```
PS C:\Users\kadab\OneDrive\Desktop\DS> gcc four.c
PS C:\Users\kadab\OneDrive\Desktop\DS> .\a.exe
Enter choice
1.Insert
2.Delete
3.Display
4.Exit

1
Enter element to be inserted
1
Enter choice
1.Insert
2.Delete
3.Display
4.Exit

1
Enter element to be inserted
2
Enter choice
1.Insert
2.Delete
3.Display
4.Exit

1
Enter element to be inserted
3
Enter choice
1.Insert
2.Delete
3.Display
4.Exit

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

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

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

4
PS C:\Users\kadab\OneDrive\Desktop\DS>
```

Both O/P seen

8/11/24