

Start here X Lab1stack.c X Lab3aLinearqueue.c X

```
1  #include<stdio.h>
2  # define MAX 5
3  int front=-1,rear=-1;
4  int queue[MAX];
5  void enqueue(){
6      int value;
7      if(rear==MAX-1)
8          printf("Queue Overflow! cannot insert into Queue");
9      else if(front==--1){
10         front=rear=0;
11         printf("Enter the element to insert:");
12         scanf("%d",&value);
13         queue[rear]=value;
14         printf("%d inserted into the Queue\n",value);
15     }
16     else{
17         printf("Enter the element to insert:");
18         scanf("%d",&value);
19         rear++;
20         queue[rear]=value;
21         printf("%d inserted into the Queue\n",value);
22     }
23 }
24 }
25
26 void dequeue(){
27     if(front==--1 && rear==--1)
28         printf("Queue Underflow! No Elements to delete.\n");
29     else if(front==rear)
30         front=rear=-1;
31     else{
32         printf("%d Deleted from the Queue\n",queue[front]);
33         front++;
34     }
35 }
36
37 void display(){
38     if(front==--1)
39         printf("Queue is empty\n");
40     else{
41         printf("Queue Elements are:");
```

```
31     else{
32         printf("%d Deleted from the Queue\n",queue[front]);
33         front++;
34     }
35 }
36
37 void display(){
38     if(front== -1)
39         printf("Queue is empty\n");
40     else{
41         printf("Queue Elements are:");
42         for(int i=front;i<=rear;i++){
43             printf("%d ",queue[i]);
44         }
45         printf("\n");
46     }
47 }
48
49 int main(){
50     int choice;
51     while(1){
52         printf("\n__Queue Operations__\n");
53         printf("1.Insert\n2.Delete\n3.Display\n4.Exit\n");
54         printf("Enter your Choice:");
55         scanf("%d",&choice);
56         switch(choice){
57             case 1:enqueue();
58                 break;
59             case 2:dequeue();
60                 break;
61             case 3:display();
62                 break;
63             case 4:printf("Exiting program!\n");
64                 return 0;
65             default:printf("Invalid choice!\n");
66         }
67     }
68     return 0;
69 }
70
```

```
D:\Coding\C\LAB\Lab3a\linea x + v
---Queue Operations---
1.Insert
2.Delete
3.Display
4.Exit
Enter your Choice:1
Enter the element to insert:7
7 inserted into the Queue

---Queue Operations---
1.Insert
2.Delete
3.Display
4.Exit
Enter your Choice:1
Enter the element to insert:9
9 inserted into the Queue

---Queue Operations---
1.Insert
2.Delete
3.Display
4.Exit
Enter your Choice:1
Enter the element to insert:6
6 inserted into the Queue

---Queue Operations---
1.Insert
2.Delete
3.Display
4.Exit
Enter your Choice:3
Queue Elements are:7 9 6

---Queue Operations---
1.Insert
2.Delete
3.Display
4.Exit
Enter your Choice:2
7 Deleted from the Queue
---Queue Operations---
1.Insert
2.Delete
3.Display
```

Start here X Lab1stack.c X Lab3aLinearqueue.c X Lab3bCircularqueue.c X

```
1  #include<stdio.h>
2  #define MAX 5
3  int queue[MAX];
4  int front=-1, rear=-1;
5
6  void enqueue(){
7      int item;
8      printf("Enter element to insert:");
9      scanf("%d",&item);
10     if(((rear+1)%MAX)==front){
11         printf("Queue Overflow!");
12         return ;
13     }
14     else if(front== -1 && rear== -1)
15         front=rear=0;
16     else
17         rear=(rear+1)%MAX;
18     queue[rear]=item;
19     printf("%d inserted into the Circular Queue\n",item);
20 }
21
22 void dequeue(){
23     if(front== -1 && rear== -1){
24         printf("Queue Underflow! No Elements to delete.\n");
25         return ;
26     }
27     printf("%d Deleted from the Circular Queue\n",queue[front]);
28     if(front==rear)
29         front=rear=-1;
30     else
31         front=(front+1)%MAX;
32 }
33
34 void display(){
35     int i=front;
36     if(front== -1 && rear== -1)
37         printf("Queue is empty\n");
```

Start here X Lab1stack.c X Lab3aLinearqueue.c X Lab3bCircularqueue.c X

```
34 void display(){
35     int i=front;
36     if(front== -1 && rear== -1)
37         printf("Queue is empty\n");
38     else{
39         printf("Queue Elements are:");
40         while(i!=rear){
41             printf("%d ",queue[i]);
42             i=(i+1)%MAX;
43         }
44         printf("%d",queue[rear]);
45     }
46 }
47
48 int main(){
49     int choice;
50     while(1){
51         printf("\n__Queue Operations__\n");
52         printf("1.Insert\n2.Delete\n3.Display\n4.Exit\n");
53         printf("Enter your Choice:");
54         scanf("%d",&choice);
55         switch(choice){
56             case 1:enqueue();
57                 break;
58             case 2:dequeue();
59                 break;
60             case 3:display();
61                 break;
62             case 4:printf("Exiting program!\n");
63                 return 0;
64             default:printf("Invalid choice!\n");
65         }
66     }
67     return 0;
68 }
69
```

```
D:\Coding\C\LAB\Lab3bCircu x + v
---Queue Operations---
1.Insert
2.Delete
3.Display
4.Exit
Enter your Choice:1
Enter element to insert:9
9 inserted into the Circular Queue

---Queue Operations---
1.Insert
2.Delete
3.Display
4.Exit
Enter your Choice:3
Queue Elements are:5 9
---Queue Operations---
1.Insert
2.Delete
3.Display
4.Exit
Enter your Choice:2
5 Deleted from the Circular Queue

---Queue Operations---
1.Insert
2.Delete
3.Display
4.Exit
Enter your Choice:3
Queue Elements are:9
---Queue Operations---
1.Insert
2.Delete
3.Display
4.Exit
Enter your Choice:4
Exiting program!

Process returned 0 (0x0)   execution time : 32.999 s
Press any key to continue.
```