

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("-----\n");
42         for(int i=front;i<=rear;i++)
43             printf("%d ",queue[i]);
44         printf("\n-----\n");
45     }
46 }
```

Start here X Lab1stack.c X Lab3aLinearqueue.c X

```
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 }
69 }
70 }
```

```
D:\Coding\C\LAB\Lab3aLines x + - x
____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");
38}
```

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\CLAB\Lab3bCircu X + v - o x
____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.
```