

```

1  #include <stdio.h>
2  #include<stdlib.h>
3  #define size 3
4  int queue[size],front=-1,rear=-1,val,num;
5  void enqueue(int num);
6  int dequeue();
7
8  void display();
9  void main()
10 {
11
12
13     while(1)
14     {
15         int option;
16         printf("\n1.insert\n2.delete\n3.display\n4.exit");
17         printf("\nenter your option");
18         scanf("%d",&option);
19         switch(option)
20         {
21             case 1:printf("\nenter number to be inserted");
22                 scanf("%d",&num);
23                 enqueue(num);
24                 break;
25             case 2:val=dequeue();
26                 if( val!=-1)
27                     printf("\n%d is deleted\n",val);
28                 break;
29
30
31             case 3:display();
32                 break;
33             case 4:exit(0);
34             default:printf("\ninvalid choice\n");
35         }
36     }
37 }
38
39 void enqueue(int num)
40 {
41     if(front==(rear+1)|| (front==0 && rear==size-1))
42     {
43         printf("\noverflow\n");
44         return;
45     }
46     else if(front==-1)
47     {

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44     return;
45 }
46 else if(front== -1)
47 {
48
49     rear=front=0;
50 }
51 else
52     rear=(rear+1)%size;
53 queue[rear]=num;
54 printf("\n%d is inserted\n",num);
55 }
56 int dequeue()
57 {
58     if( front == -1)
59     {printf("\nunderflow\n");
60     return -1;
61
62     }
63     else
64     {
65         val=queue[front];
66         if( front==rear)
67         {
68             front=-1;
69             rear=-1;
70         }
71         front=(front+1)%size;
72         return val;
73     }
74 }
75
76 void display()
77 {
78
79     int i;
80     if( front== -1)
81         printf("\nqueue is empty\n");
82     else
83     {
84         for( i=front;i!=rear;i=(i+1)%size)
85             printf("%d\t",queue[i]);
86             printf("%d\t",queue[i]);
87     }
88 }
89
90

```

```
"C:\Users\Admin\Desktop\circular queue.exe"

1.insert
2.delete
3.display
4.exit
enter your option1

enter number to be inserted1

1 is inserted

1.insert
2.delete
3.display
4.exit
enter your option1

enter number to be inserted2

2 is inserted

1.insert
2.delete
3.display
4.exit
enter your option1

enter number to be inserted3

3 is inserted

1.insert
2.delete
3.display
4.exit
enter your option1

enter number to be inserted4

overflow

1.insert
2.delete
3.display
4.exit
enter your option3
1      2      3
1.insert
2.delete
3.display
4.exit
enter your option2

1 is deleted

1.insert
2.delete
3.display
4.exit
enter your option3
2      3
1.insert
2.delete
```

```
"C:\Users\Admin\Desktop\circular queue.exe"
2.delete
3.display
4.exit
enter your option3
2 3
1.insert
2.delete
3.display
4.exit
enter your option1
enter number to be inserted4
4 is inserted
1.insert
2.delete
3.display
4.exit
enter your option1
enter number to be inserted5
overflow
1.insert
2.delete
3.display
4.exit
enter your option3
2 3 4
1.insert
2.delete
3.display
4.exit
enter your option
```



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