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1  # include<stdio.h>
2  # define MAX 5
3
4  int cqueue_arr[MAX];
5  int front = -1;
6  int rear = -1;
7
8  /*Begin of insert*/
9  void insert(int item)
10 {
11     if((front == 0 && rear == MAX-1) || (front == rear+1))
12     {
13         printf("Queue Overflow \n");
14         return;
15     }
16     if (front == -1) /*If queue is empty */
17     {
18         front = 0;
19         rear = 0;
20     }
21     else
22     {
23         if(rear == MAX-1) /*rear is at last position of queue */
24             rear = 0;
25         else
26             rear = rear+1;
27     }
28     cqueue_arr[rear] = item ;
29 }
30 /*End of insert*/
31
32 /*Begin of del*/
33 void del()
34 {
35     if (front == -1)
36     {
37         printf("Queue Underflow\n");
38         return ;
39     }
40     printf("Element deleted from queue is : %d\n",cqueue_arr[front]);
41     if(front == rear) /* queue has only one element */
42     {
43         front = -1;
44         rear=-1;
45     }
46     else
47     {
48         if(front == MAX-1)
49             front = 0;
50         else
51             front = front+1;
52     }
53 }
54 /*End of del() */
55
56 /*Begin of display*/
57 void display()
58 {
59     int front_pos = front, rear_pos = rear;
60     if(front == -1)
61     {
62         printf("Queue is empty\n");
63         return;
64     }
65     printf("Queue elements :\n");
66     if( front_pos <= rear_pos )

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67     while(front_pos <= rear_pos)
68     {
69         printf("%d ",cqueue_arr[front_pos]);
70         front_pos++;
71     }
72     else
73     {
74         while(front_pos <= MAX-1)
75         {
76             printf("%d ",cqueue_arr[front_pos]);
77             front_pos++;
78         }
79         front_pos = 0;
80         while(front_pos <= rear_pos)
81         {
82             printf("%d ",cqueue_arr[front_pos]);
83             front_pos++;
84         }
85     }
86     printf("\n");
87 }
88 /*End of display*/
89
90 /*Begin of main*/
91 int main()
92 {
93     int choice,item;
94     do
95     {
96         printf("1.Insert\n");
97         printf("2.Delete\n");
98         printf("3.Display\n");
99         printf("4.Quit\n");
100
101         printf("Enter your choice : ");
102         scanf("%d",&choice);
103
104         switch(choice)
105         {
106             case 1 :
107                 printf("Input the element for insertion in queue : ");
108                 scanf("%d", &item);
109
110                 insert(item);
111                 break;
112             case 2 :
113                 del();
114                 break;
115             case 3:
116                 display();
117                 break;
118             case 4:
119                 break;
120             default:
121                 printf("Wrong choice\n");
122         }
123     }while(choice!=4);
124
125     return 0;
126 }
127 /*End of main*/

```