

```
1  #include<stdlib. h>
2  #include<stdio. h>
3  #define max 5
4  int front=-1, rear=-1;
5  int CQueue[max];
6  void insert();
7  int delete();
8  void display();
9  void search();
10 int main()
11 {
12     int w, no;
13     for(;;)
14     {
15         printf("\n :: Menu :: \n");
16         printf("\n _____ \n");
17         printf("\n1. Insert");
18         printf("\n2. Delete");
19         printf("\n3. Display");
20         printf("\n4. Search");
21         printf("\n5. EXIT");
22         printf("\nEnter any option : \n");
23         scanf("%d", &w);
24         switch(w)
25         {
26             case 1:
27                 insert();
28                 break;
29             case 2:
30                 no=delete();
31                 break;
32             case 3:
33                 display();
34                 break;
35             case 4:
36                 search();
37             case 5:
38                 exit(0);
39             default:
40                 printf("\nInvalid Option!! \n");
41         }
42     }
43 }
44 void insert()
45 {
46     int no;
47     if((front == 0 && rear == max-1) || front == rear+1)
48     {
49         printf("\nCircular Queue Is Full ! \n");
50         return;
51     }
52     printf("\nEnter a number to Insert : \n");
53     scanf("%d", &no);
54     if(front == -1)
55         front = front + 1;
56     if(rear == max-1)
57         rear = 0;
58     else rear = rear + 1;
59     CQueue[rear] = no;
60 }
```



```
60 }
61 int delete()
62 {
63     int e;
64     if(front==-1)
65     {
66         printf("\nThe Circular Queue is Empty !! \n");
67     }
68     e=CQueue[front];
69     if(front==max-1)
70         front=0;
71     else if(front==rear)
72     {
73         front=-1;
74         rear=-1;
75     }
76     else front=front+1;
77     printf("\n%d was deleted ! \n", e);
78     return e;
79 }
80 void display()
81 {
82     int i;
83     if(front==-1)
84     {
85         printf("\nThe Circular Queue is Empty! . Nothing To Display !! \n");
86         return;
87     }
88     i=front;
89     if(front<=rear)
90     {
91         printf("\n\n");
92         while(i<=rear)
93             printf("%d ", CQueue[i++]);
94         printf("\n");
95     }
96     else
97     {
98         printf("\n\n");
99         while(i<=max-1)
100             printf("%d ", CQueue[i++]) ;
101         i=0;
102         while(i<=rear)
103             printf("%d ", CQueue[i++]);
104         printf("\n");
105     }
106 }
107 void search()
108 {
109     int item, i, c=0;
110     printf("\nEnter the element which is to be searched");
111     scanf("%d", &item);
112     for(i=front; i<=rear; i++)
113     {
114         if(item==CQueue[i])
115         {
116             printf("\nitem found at location %d ", i+1);
117             c++;
118         }
119     }
120     if(c==0)
121         printf("\nitem not found");
122 }
123 }
```





:: Menu ::

1. Insert
2. Delete
3. Display
4. Search
5. EXIT

Enter any option :

1

Enter a number to Insert :

3

:: Menu ::

1. Insert
2. Delete
3. Display
4. Search
5. EXIT

Enter any option :

1

Enter a number to Insert :

5

:: Menu ::

1. Insert
2. Delete
3. Display
4. Search
5. EXIT

Enter any option :

3

3 5

:: Menu ::

1. Insert
2. Delete
3. Display
4. Search
5. EXIT

Enter any option :

2

3 was deleted !

:: Menu ::

1. Insert
2. Delete
3. Display
4. Search
5. EXIT

Enter any option :

4

Enter the element which is to be searched5

item found at location 2

Process finished.

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