```c
#include<stdlib.h>
#include<stdio.h>
#define max 5
int front=-1,rear=-1;
int CQueue[max];
void insert();
int delete();
void display();
void search();
int main()
{
    int w,no;
    for(;;)
    {
        printf("\n:: Menu ::\n");
        printf("\n ________\n");
        printf("\n1. Insert");
        printf("\n2. Delete");
        printf("\n3. Display");
        printf("\n4. Search");
        printf("\n5. EXIT");
        printf("\nEnter any option : \n");
        scanf("%d",&w);
        switch(w)
        {
        case 1:
            insert();
            break;
        case 2:
            no=delete();
            break;
        case 3:
            display();
            break;
        case 4:
            search();
        case 5:
            exit(0);
        default:
            printf("\nInvalid Option!!\n");
        }
    }
```

```
43  }
44  void insert()
45  {
46      int no;
47      if((front ==0 && rear == max-1) || front ==
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  }
61  int delete()
62  {
63      int e;
64      if(front==-1)
65      {
66          printf("\nThe Circular Queue is Empty !
67
68      }
69      e=CQueue[front];
70      if(front==max-1)
71          front=0;
72      else if(front==rear)
73      {
74          front=-1;
75          rear=-1;
76      }
77      else front=front+1;
78      printf("\n%d was deleted !\n",e);
79      return e;
80  }
81  void display()
82  {
83      int i;
84      if(front==-1)
```

```
89      i=front;
90      if(front<=rear)
91      {
92          printf("\n\n");
93          while(i<=rear)
94              printf("%d ",CQueue[i++]);
95          printf("\n");
96      }
97      else
98      {
99          printf("\n\n");
100         while(i<=max-1)
101            printf("%d ",CQueue[i++]) ;
102         i=0;
103         while(i<=rear)
104             printf("%d ",CQueue[i++]);
105         printf("\n");
106     }
107  }
108  void search()
109  {
110  int item,i,c=0;
111 printf("Enter the element which is to be search
112 scanf("%d", &item);
113 for(i=front;i<=rear;i++)
114 {
115 if(item==CQueue[i])
116 {
117 printf("item found at location %d ",i+1);
118 c++;
119 }
120 }
121 if(c==0)
122 printf("item not found");
123 }
```

```
106     }
107  }
108  void search()
109  {
110  int item,i,c=0;
111 printf("Enter the element which is to be search
112 scanf("%d", &item);
113 for(i=front;i<=rear;i++)
114 {
115 if(item==CQueue[i])
116 {
117 printf("item found at location %d ",i+1);
118 c++;
119 }
120 }
121 if(c==0)
122 printf("item not found");
123 }
```

```
Output
+ gcc -w -Wall -std=gnu99 -O2 -o main.out m
+ ./main.out

:: Menu ::

 _________

1. Insert
2. Delete
3. Display
4. Search
5. EXIT
Enter any option :
1

Enter a number to Insert :
10

:: Menu ::

 _________

1. Insert
2. Delete
3. Display
4. Search
5. EXIT
Enter any option :
```

```
Output
3. Display
4. Search
5. EXIT
Enter any option :
1

Enter a number to Insert :
10

:: Menu ::

 _________

1. Insert
2. Delete
3. Display
4. Search
5. EXIT
Enter any option :
1

Enter a number to Insert :
20

:: Menu ::

 _________

1. Insert
2. Delete
3. Display
4. Search
5. EXIT
Enter any option :
```

```
2. Delete
3. Display
4. Search
5. EXIT
Enter any option :
1

Enter a number to Insert :
20

:: Menu ::

 _________

1. Insert
2. Delete
3. Display
4. Search
5. EXIT
Enter any option :
2

10 was deleted !

:: Menu ::

 _________

1. Insert
2. Delete
3. Display
4. Search
5. EXIT
Enter any option :
```

```
2. Delete
3. Display
4. Search
5. EXIT
Enter any option :
2

10 was deleted !

:: Menu ::

 _________

1. Insert
2. Delete
3. Display
4. Search
5. EXIT
Enter any option :
3


20

:: Menu ::

 _________

1. Insert
2. Delete
3. Display
4. Search
5. EXIT
Enter any option :
```

```
4. Search
5. EXIT
Enter any option :
2

10 was deleted !

:: Menu ::

 _________

1. Insert
2. Delete
3. Display
4. Search
5. EXIT
Enter any option :
3


20

:: Menu ::

 _________

1. Insert
2. Delete
3. Display
4. Search
5. EXIT
Enter any option :
4
Enter the element which is to be searched2
item found at location 2
```