Program of circular queue add elements, delete and search

```
#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");
        }
    }
}
void insert()
{
    int no;
    if((front ==0 && rear == max-1) || front == rear+1)
    {
        printf("\nCircular Queue Is Full !\n");
        return;
    }
    printf("\nEnter a number to Insert :\n");
    scanf("%d",&no);
    if(front==-1)
        front=front+1;
    if(rear==max-1)
        rear=0;
```

```
    else rear=rear+1;
        CQueue[rear]=no;
}
int delete()
{
    int e;
    if(front==-1)
    {
        printf("\nThe Circular Queue is Empty !!\n");

    }
    e=CQueue[front];
    if(front==max-1)
        front=0;
    else if(front==rear)
    {
        front=-1;
        rear=-1;
    }
    else front=front+1;
    printf("\n%d was deleted !\n",e);
    return e;
}
void display()
{
    int i;
    if(front==-1)
    {
        printf("\nThe Circular Queue is Empty!. Nothing To Display !!\n");
```

```
    return;
  }
  i=front;
  if(front<=rear)
  {
    printf("\n\n");
    while(i<=rear)
      printf("%d ",CQueue[i++]);
    printf("\n");
  }
  else
  {
    printf("\n\n");
    while(i<=max-1)
      printf("%d ",CQueue[i++]) ;
    i=0;
    while(i<=rear)
      printf("%d ",CQueue[i++]);
    printf("\n");
  }
}
 void search()
 {
 int item,i,c=0;
printf("Enter the element which is to be searched");
scanf("%d", &item);
for(i=front;i<=rear;i++)
{
if(item==CQueue[i])
```

```
{
printf("item found at location %d ",i+1);
c++;
}
}
if(c==0)
printf("item not found");
}
```

OUTPUT

```
:: Menu ::

 _________

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

Enter a number to Insert :
2

:: 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 :
3


2 3
```

```
:: 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 1
Process finished.
```