CIRCULAR QUEUE

```
#include <stdio.h>

int queue[6];
int front=-1;
int r=-1;
int i,item,c=0;

void insertion(int element)
{
   if(front==-1 && r==-1)
   {
      front=0;
      r=0;
      queue[r]=element;
   }
   else if((r+1)%6==front)
   {
      printf("Queue is overflow..");
   }
   else
   {
      r=(r+1)%6;
      queue[r]=element;
   }
}

void deletion()
```

```
{
    if((front==-1) && (r==-1))
    {
        printf("\nQueue is underflow..");
    }
 else if(front==r)
{
   printf("\nThe dequeued element is %d", queue[front]);
   front=-1;
   r=-1;
}
else
{
    printf("\nThe dequeued element is %d", queue[front]);
   front=(front+1)%6;
}
}



void display()
{
    int i=front;
    if(front==-1 && r==-1)
    {
        printf("\n Queue is empty..");
    }
    else
    {
        printf("\nElements in a Queue are :");
        while(i<=r)
        {
```

```
            printf("%d,", queue[i]);
            i=(i+1)%6;
        }
    }
}
void search()
{
printf("Enter the element you want to search: ");
scanf("%d", &item);
for(i=front;i<=r;i++)
{

if(item==queue[i])
{
printf("Element found at %d",i+1);
c++;
}
}
if(c==0)
{
printf("!!Element is not present in the queue!!");
}
else
{
printf("element found %d",c);
}
}

int main()
{
    int choice=1,x;
```

```
    while(choice<4 && choice!=0)
    {
    printf("\nPress 1: Insert an element");
    printf("\nPress 2: Delete an element");
    printf("\nPress 3: Display the element");
    printf("\nPress 4: search an element");

    printf("\nEnter your choice");
    scanf("%d", &choice);

    switch(choice)
    {

       case 1:

       printf("Enter the element which is to be inserted");
       scanf("%d", &x);
       insertion(x);
       break;
       case 2:
       deletion();
       break;
       case 3:
       display();
       case 4:
       search();

    }}
    return 0;
}
```

OUTPUT

```
Press 1: Insert an element

Press 2: Delete an element

Press 3: Display the element

Press 4: search an element

Enter your choice

1

Enter the element which is to be inserted

4


Press 1: Insert an element

Press 2: Delete an element

Press 3: Display the element

Press 4: search an element

Enter your choice

2


The dequeued element is 4

Press 1: Insert an element

Press 2: Delete an element

Press 3: Display the element

Press 4: search an element

Enter your choice

1

Enter the element which is to be inserted

5
```