CIRCULAR QUEUE

SOURCE CODE

```c
#include<stdlib.h>

#include<stdio.h>

#define SIZE 6

int front=-1,rear=-1;

int CQueue[SIZE];

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");
```

```c
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");

}
```

```c
    }
}
void insert()
{
  int no;
  if((front ==0 && rear == SIZE-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==SIZE-1)
      rear=0;
  else rear=rear+1;
      CQueue[rear]=no;
}
int delete()
{
  int e;
```

```c
        if(front==-1)

        {

            printf("\nThe Circular Queue is Empty !!\n");


        }

        e=CQueue[front];

        if(front==SIZE-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)

    {
```

```c
    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<=SIZE-1)

        printf("%d ",CQueue[i++]) ;

    i=0;

    while(i<=rear)

        printf("%d ",CQueue[i++]);

    printf("\n");

}
```

```c
}
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++;

}

}
```

```c
if(c==0)

printf("item not found");
}
```

Output

1. Insert

2. Delete

3. Display

4. Search

5. EXIT

Enter any option :

3

5

 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.