1.Circular Queue

```
#include <stdio.h>
int q[50],front=-1,rear=-1,size;
void display();
void enqueue();
void dequeue();
void main()
{
int ch;

printf("Enter no. of elements:");
scanf("%d",&size);
while(ch!=4)
{
printf("1.Insert 2.Delete 3.Display 4.Exit\n");
printf("Enter your choice:");
scanf("%d",&ch);
switch (ch)
{
case 1:
enqueue();
break;
case 2:
dequeue();
break;
case 3:
display();
break;
}
```

```
}
printf("Exited");
}
void enqueue()
{
int item;
if((front == rear+1)||(front==0 && rear==size-1))
printf("ueue is full\n");
else
{

if(front == -1)
front=0;
printf("Enter element:");
scanf("%d",&item);
rear=(rear + 1)%size;
q[rear] = item;
}
}
void dequeue()
{
int ele;
if(front==-1)
printf("Queue is empty\n");
else
{
ele = q[front];
if(front==rear)
{
```

```
front = -1;
rear = -1;
}
else
front = (front+1) % size;
printf("Deleted element = %d\n",ele);
}
}
void display()
{
int i;

if(front == -1)
printf("Queue is empty");
else
{
printf("Front = %d\t",front);
printf("Rear = %d\n",rear);
printf("Queue:");
for(i=front;i!=rear;i=(i+1)%size)
printf("%d",q[i]);
printf("%d\n",q[i]);
}
}
```

Output:

```
Enter no. of elements:4
1.Insert 2.Delete 3.Display 4.Exit
Enter your choice:1
Enter element:2
1.Insert 2.Delete 3.Display 4.Exit
Enter your choice:1
Enter element:3
1.Insert 2.Delete 3.Display 4.Exit
Enter your choice:3
Front = 0       Rear = 1
Queue:23
1.Insert 2.Delete 3.Display 4.Exit
Enter your choice:2
Deleted element = 2
1.Insert 2.Delete 3.Display 4.Exit
Enter your choice:3
Front = 1       Rear = 1
Queue:3
1.Insert 2.Delete 3.Display 4.Exit
Enter your choice:4
Exited

...Program finished with exit code 0
Press ENTER to exit console.
```