lab program 4

(4)
```
# include <stdio.h>
# define MAX 5
int cqueue_arr[MAX];
int front = -1;
int rear = -1;
void insert(int item)
{
if ((front==0 && rear == MAX-1)|| (front==rear+1))
{
printf("Queue Overflow\n");
return;
}
if (front==-1)
 {
 front=0;
 rear=0;
}
else
{
if (rear == MAX-1)
  rear=0;
 else
  rear = rear+1;
}
cqueue_arr[rear]=item;
}
void del()
{
if (front==-1)
{
printf("Queue underflow\n");
```

```
printf("Element deleted from queue is : %d\n",
  cqueue_arr[front]);
if (front == rear)
 {
  front = -1;
  rear = -1;
 }
else
 {
 if(front == MAX-1)
    front=0;
 else
  front = front + 1;
 }
}
void display()
{
int front_pos= front, rear_pos= rear;
if (front == -1)
 {
printf("Queue is empty\n");
 return;
}
printf("Queue element : \n");
if (front_pos <= rear_pos)
  while (front_pos <= rear_pos)
 {
printf("%d", cqueue_arr[front_pos]);
 front_pos++;
}
else
 {
 while (front_pos <= MAX-1)
```

```
{
printf("%d", cqueue_arr[front_pos]);
front_pos++;
}
front_pos=0;
while (front_pos <= rear_pos)
{
printf("%d", cqueue_arr[front_pos]);
front_pos++;
}
}
printf("\n");
}
int main()
{
int choice, item;
do
{
printf("1. Insert\n");
printf("2. Delete\n");
printf("3. display\n");
printf("4. Quit\n");
printf("Enter your choice: ");
scanf("%d", &choice);
switch(choice)
{
case 1:
printf("Input the element for insertion
        in queue: ");
scanf("%d", &item);
insert(item);
break;
case 2:
del()
```

```
break;
case 3:
    display();
    break;
case 4:
    break;
    default :
    printf("Wrong choice\n");
}
} while (choice != 4);
return 0;
}
```