LAB-5

Circular Queue

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Puffin

```
#include<stdio.h>
#define MAX 5
int cqueue[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;
 }
 else if(front==-1)
 {
  front=0;
  rear=0;
 }
 else
 {
  if(rear==MAX-1)
   rear=0;
  else
   rear=rear+1;
 }
 cqueue[rear]=item;
}
void delete()
{
  if(front==-1)
```

```
{
 printf ("Queue Underflow \n");
 return;
}
printf ("Element deleted from queue is %d \n", queue[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 empty \n");
 return;
}
printf("Queue elements: \n");
if (front_pos <= rear_pos)
    while (front_pos <= rear_pos)
```

```
{
printf("%d ", cqueue[front_pos]);
front_pos++;
}
else
{
while(front_pos<=MAX-1)
{
printf("%d ", cqueue[front_pos]);
front_pos++;
}
front_pos=0;
while(front_pos<=rear_pos)
{
printf("%d", cqueue[front_pos]);
front_pos++;
}
}
printf("\n");
}
int main()
{
int choice, item;
do
{
printf("1.Insert\n2.Delete\n3.Display\n4.Quit\n");
printf("Enter your choice: ");
scanf("%d", &choice);
switch(choice)
```

```
{
  case 1 :
    printf ("Element for insertion: ");
    scanf ("%d", &item);
    printf ("\n");
    insert(item);
    break;
  case 2:
    delete();
    break;
  case 3 :
    display();
    break;
  case 4:
    break;
  default:
    printf("Enter valid choice!! \n");
  }
}while (choice != 4);
return 0;
}
```