**Assignment Day 7 | 31st December 2020**

**Question-1:**

Write a program implementing insert, delete and display operation of Circular Queue.

**Answer-1:**

#include<stdio.h>

# define MAX 5

int cqueue\_arr[MAX];

int f = -1, r = -1;

**void insert(int i)**

{

if((f == 0 && r == MAX-1) || (f == r+1))

{

printf("Queue Overflow n");

return;

}

if (f == -1)

{

f = 0;

r = 0;

}

else

{

if(r == MAX-1)

r = 0;

else

r = r+1;

}

cqueue\_arr[r] = i ;

}

**void deletion()**

{

if(f == -1)

{

printf("Queue Underflow \n");

return ;

}

printf("Element deleted from queue is : %dn",cqueue\_arr[f]);

if(f == r)

{

f = -1;

r=-1;

}

else

{

if(f == MAX-1)

f = 0;

else

f = f+1;

}

}

**void display()**

{

int f\_pos = f, r\_pos = r;

if(f == -1)

{

printf("Queue is empty \n");

return;

}

printf("Queue elements :n");

if( f\_pos <= r\_pos )

while(f\_pos <= r\_pos)

{

printf("%d ",cqueue\_arr[f\_pos]);

f\_pos++;

}

else

{

while(f\_pos <= MAX-1)

{

printf("%d ",cqueue\_arr[f\_pos])

f\_pos++;

}

f\_pos = 0;

while(f\_pos <= r\_pos)

{

printf("%d ",cqueue\_arr[f\_pos]);

f\_pos++;

}

}

printf("n");

}

int main()

{

int c, i;

do

{

printf("1.Insert \n");

printf("2.Delete \n");

printf("3.Display \n");

printf("4.Quit \n");

printf("Enter your choice : ");

scanf("%d",&c);

switch(c)

{

case 1 :

printf("Input the element for insertion in queue : ");

scanf("%d", &i);

insert(i);

break;

case 2 :

deletion();

break;

case 3:

display();

break;

case 4:

break;

default:

printf ("Wrong choice \n");

}

}

while(c!=4);

return 0;

}