QUESTION 1 – Write a program implementing insert, delete and display operation of Circular Queue.

Ans –

#include<stdio.h>

#define size 5

int a[size],front=-1,rear=-1;

void main()

{

int ch;

void insert();

void deletee();

void display();

printf("1. Insert \n2. Delete\n3. Display\n4. Exit\n");

while(1)

{

printf("\nEnter Choice - ");

scanf("%d",&ch);

switch(ch)

{

case 1: insert();

break;

case 2: deletee();

break;

case 3: display();

break;

case 4: exit(0);

default: printf("\n Wrong Choice");

}

}

}

void insert()

{

int x;

if((front==0&&rear==size-1)||(rear+1==front))

printf("\nCircular Queue Overflow");

else

{

printf("\nEnter element - ");

scanf("%d",&x);

if(rear==-1)

front=0,rear=0;

else if(rear==size-1)

rear=0;

else

rear++;

a[rear]=x;

}

}

void deletee()

{

int z;

if(front==-1)

printf("\nCicular Queue Underflow");

else

{

z=a[front];

if(front==rear)

front=-1,rear=-1;

else if(front==size-1)

front=0;

else

front++;

printf("\nDeleted element is %d - ",z);

}

}

void display()

{

int i,j;

if(front==-1&&rear==-1)

printf("\nCicular Queue Underflow");

printf("\nCircular Queue Elements are - ");

if(front>rear)

{

for(i=front;i<size;i++)

printf("%d ",a[i]);

for(j=0;j<=size;j++)

printf("%d ",a[j]);

}

else

{

for(i=front;i<=rear;i++)

printf("%d ",a[i]);

}

printf("\n");

}

Output –



