**Question 1: Write a program implementing insert, delete and display operation of Circular Queue.**

**Ans:**

**#include<stdlib.h>**

**#include<stdio.h>**

**#define max 5**

**int** front=-1,rear=-1; // global variable

**int** CQueue[max];

**void** insert();

**int** delete();

**void** display();

**int** main()

{

**int** w,no;

**for**(;;)

{

printf("\n1. Insert");

printf("\n2. Delete");

printf("\n3. Display");

scanf("%d",&w);

**switch**(w)

{

**case** 1:

insert();

**break**;

**case** 2:

no=delete();

**break**;

**case** 3:

display();

**break**;

**case** 4:

exit(1);

**default**:

printf("\nInvalid Choice !!\n");

}

}

}

**void** insert()

{

**int** no;

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

{

printf("\nCircular Queue Is Full !\n");

**return**;

}

printf("\nEnter a number to Insert :");

scanf("%d",&no);

**if**(front==-1)

front=front+1;

**if**(rear==max-1)

rear=0;

**else** rear=rear+1;

CQueue[rear]=no;

}

**int** delete()

{

**int** e;

**if**(front==-1)

{

printf("\nThe Circular Queue is Empty !!\n");

}

e=CQueue[front];

**if**(front==max-1)

front=0;

**else** **if**(front==rear)

{

front=-1;

rear=-1;

}

**else** front=front+1;

printf("\n%d was deleted !\n",e);

**return** e;

}

**void** display()

{

**int** i;

**if**(front==-1)

{

printf("\nThe Circular Queue is Empty ! Nothing To Display !!\n");

**return**;

}

i=front;

**if**(front<=rear)

{

printf("\n\n");

**while**(i<=rear)

printf("%d ",CQueue[i++]);

printf("\n");

}

**else**

{

printf("\n\n");

**while**(i<=max-1)

printf("%d ",CQueue[i++]) ;

i=0;

**while**(i<=rear)

printf("%d ",CQueue[i++]);

printf("\n");

}

}