**INSERTION AND DELETION IN CIRCULAR QUEUE**

#include<iostream.h>

#include<stlib.h>

#include<process.h>

intinsert\_in\_cq(int[],int);

void display(int[],int.int);

intdel\_in\_cq(intcqueue[]);

constint size=7;

intcqueue[size],,front=-1;,rear=-1;

int main()

{ intite,res,ch;

do{cout<<"\t\t\t circular queue menu\n:";

cout<<"\t 1.insert\n";

cout<<"\t 2.delete\n";

cout<<"\t 3.display\n";

cout<<"\t 4. exit\n";

cout<<enter your choice(1-4)...";

cin>>ch;

switch(ch)

{ case 1:cout<<"\n enter item for the insertion:";

cin>>item;

res=insert\_in\_cq(cqueue,item);

if(res==-1)

cout<<"overflow!!!";

else{cout<<"\n now the cir\_queue is :\n";

display(cqueue,front,rear);}

break;

case 2:item=del\_in\_cq(cqueue);

cout<<"element deleted is:"<<item<<endl;

display(cqueue,front,rear);

break;

case 3:display(cqueue,front,rear);

break;

case 4:break;

default:cout<<"valid choices are 1..4 only\n:";

break;}}while(ch1=4);

return 0;}

int insert \_in\_cq(intcqueue[],intele)

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

return -1;

else if(rear==-1)

front=rear=0;

else if(rear==size-1)

rear=0;

else

rear++;

cqueue[rear]=ele;

return 0;}

void display(intcqueue[],intfront,int rear){

inti=0;

cout<<"\n cir\_queue is:\n:"<<"(front shown as>>>>,rear as<<<<and free space as-)\n)";

if(front==-1)

return;

if(rear>=front)

{for(i=0;i<front;i++)cout<<"-";

cout<<">>>";

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

cout<<cqueue[i]<<"<-";

cout<<cqueue[rear]<<"<<<"<<endl;}

else

{ for(i=0;i<rear;i++)

cout<<cqueue[i]<<"<-";

cout<<cqueue[rear]<<"<<<";

for(;i<front;i++)

cout<<"-";

cout<<">>>";

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

cout<<cqueue[i]<<"<-";

cout<<"\t...wrap around...";}}

intdel\_in\_cq(intcqueue[])

{ int ret;

if(front==-1)

return -1;

else{

ret=cqueue[front];

if(front==rear)

front=rear=-1;

else if(front==size-1)

front=0;

else front++;}

return ret;}

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*OUTPUT\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

