**Assignment No:1.4.1**

**Title:Implementation of Program based on Circular Queue.**

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**Roll No:48**

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#include<iostream.h>

#include<conio.h>

class QUEUE\_48

{

private:

int \*A,size,front,rear;

public:

QUEUE\_48(int par);

void QUEUE\_ADD\_48(int ele);

int QUEUE\_DEL\_48();

void LIST\_ALL\_48();

};

QUEUE\_48::QUEUE\_48(int par)

{

front=rear=0, size=par;

A=new int[size+1];

}

void QUEUE\_48::QUEUE\_ADD\_48(int ele)

{

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

{

cout<<"QUEUE is full";

return;

}

if(front==0)

{

front=1;

}

else

if(rear==size)

rear=0;

rear=rear+1;

A[rear]=ele;

}

int QUEUE\_48::QUEUE\_DEL\_48()

{

if(front==0)

{

cout<<"QUEUE is empty";

return NULL;

}

int ele=A[front];

if(front==rear)

front=rear=0;

else

{

if(front==size)

front = 0;

front = front+1;

}

cout<<"Element is deleted "<<ele;

return ele;

}

void QUEUE\_48 :: LIST\_ALL\_48()

{

cout<<"QUEUE element are: "<<endl;

if(front==0)

{

cout<<"QUEUE is Empty";

return;

}

if(front<=rear)

{

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

{

cout<<A[i]<<"\t";

}

}

else

{

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

cout<<A[i]<<"\t";

for(i=1;i<=rear;i++)

cout<<A[i]<<"\t";

}

}

void MENU()

{

int opt,ele,size;

cout<<"Enter size of List"<<endl;

cin>>size;

QUEUE\_48 obj(size);

do

{

cout<<"\n 1. Add ";

cout<<"\n 2. Delete";

cout<<"\n 3. LISTALL";

cout<<"\n 4. Exit \n";

cout<<"Enter your option: ";

cin>>opt;

switch(opt)

{

case 1:

cout<<"Enter element to add in QUEUE: ";

cin>>ele;

obj.QUEUE\_ADD\_48(ele);

break;

case 2:

ele= obj.QUEUE\_DEL\_48();

break;

case 3:

obj.LIST\_ALL\_48();

break;

case 4:

return;

default:

cout<<"Invalid Option";

}

}while(1);

}

void main()

{

clrscr();

MENU();

getch();

}