**ROLL NO:-45**

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**PRACTICAL NO:-**

**PRACTICAL NAME :- IMPLEMENTATION OF PRIORITY QUEUE**

#include "iostream.h"

#include "conio.h"

class ELE

{

public:

int data;

int prio;

};

class PQUE

{

int \*A,\*P,size, front,rear;

public:

PQUE(int);

void ADD(int,int);

int DEL();

void LIST();

int IS\_EMPTY();

};

PQUE::PQUE(int par)

{

size = par;

P= new int[size+1];

A= new int[size+1];

front =0;

rear = 0;

}

void PQUE::ADD(int ele, int prio)

{

if(rear == size)

{

cout<<endl<<"Queue is full";

return;

}

if(front==0)

{

front= 1;

rear = 1;

A[rear]=ele;

P[rear]=prio;

}

else

{

int i=rear;

while( i>=front && prio > P[i] )

{

A[i+1]=A[i];

P[i+1]=P[i];

i=i-1;

}

A[i+1]=ele;

P[i+1]=prio;

rear = rear +1;

}

}

int PQUE::IS\_EMPTY()

{

if(front==0)

{

cout<<endl<<"Queue is empty";

return 1;

}

else

return 0;

}

int PQUE::DEL()

{

int ele = A[front];

if(front == rear)

front = rear = 0;

else

front = front + 1;

return ele;

}

void PQUE::LIST()

{

if( ! IS\_EMPTY())

{

cout<<endl<<"List elements are : \n";

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

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

cout<<endl;

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

cout<<P[i]<<" ";

}

}

void MENU()

{

int ele,prio,n,opt;

cout<<endl<<"Enter the size of \_\_\_\_ : ";

cin>>n;

PQUE obj(n);

do

{

cout<<endl<<"1 ADD";

cout<<endl<<"2 DEL";

cout<<endl<<"3 LIST";

cout<<endl<<"4 EXIT";

cin>>opt;

switch(opt)

{

case 1:

cout<<endl<<"Enter ele";

cin>>ele;

cout<<endl<<"Enter priority";

cin>>prio;

obj.ADD(ele,prio);

obj.LIST();

break;

case 2:

if( ! obj.IS\_EMPTY())

{

ele = obj.DEL();

cout<<endl<<"Delted ele = "<<ele;

}

break;

case 3:

obj.LIST();

break;

case 4:

return;

default:

cout<<endl<<"invalid input";

}

}while(1);

}

void main()

{

clrscr();

MENU();

getch();

}