```
/*
ASSIGNMENT NAME:= implement priority queue as ADT  using singly link list for servising patient is an hospital with priorities as 1.serious, 2.medium illness, 3.normal  */

#include<iostream>
#include<string.h>
using namespace std;

struct node
{
        int data,prior;
        char pnm[10],name[10];
        struct node *next;
}*front,*rear;

class Queue
{
public:

        int isempty();
        void pq_insert(int prior,char name[10]);
   void display();
   void p_delete();

};
int Queue::isempty()
{
```

```
        if((rear=front)==NULL)
        {
                return 1;
        }
        return 0;
}

struct node *createnode(int prior,char name[10])
{
   struct node *temp;
   temp=new node;

   strcpy(temp->pnm,name);
   temp->prior=prior;

   temp->next=NULL;
   return temp;
}

 void Queue::pq_insert(int prior,char name[10])
 {
        int i;
        struct node *temp;
        temp=createnode(prior,name);
        if(isempty())
        {
                front=rear=temp;
```

```
        }
        else if(front->prior > temp->prior)
        {
    temp->next=front;
    front=temp;
        }
        else
        {
                rear=front;
                while(rear->next!=NULL && temp->prior >= rear->next->prior)
                {
                        rear=rear->next;
                }
                temp->next=rear->next;
                rear->next=temp;
    }
}
void Queue::display()
{
        struct node *temp;
        cout<<"priority  \t name \t\t  patient name"<<endl;
        for(temp=front;temp!='\0';temp=temp->next)
        {
                if(temp->prior==1)
                  cout<<temp->prior<<"\t \t serious\t\t"<<temp->pnm<<endl;

                if(temp->prior==2)
                  cout<<temp->prior<<"\t \t medium \t \t"<<temp->pnm<<endl;
```

```
                if(temp->prior==3)
                  cout<<temp->prior<<"\t \t normal \t \t"<<temp->pnm<<endl;
        }
}

void Queue::p_delete()
{
        struct node *temp;
        temp=front;
        front=front->next;
        temp->next=NULL;
        cout<<"\n"<<temp->pnm<<" patient checked successfully \n "<<endl;
        delete temp;
        display();
}
int main()
{
        int priority,i,ch,n;
        int ans,patient_no;
        char name[10];
        Queue q;
do
{
        cout<<"\n hospital history";
    cout<<"\n 1.enter the record u want";
    cout<<"\n 2.display";
    cout<<"\n 3.delete";
```

```
        cout<<"\n enter ur choice";
        cin>>ch;

switch(ch)
{
case 1:
            cout<<"\n 1.serious";
            cout<<"\n 2.medium";
                    cout<<"\n 3.normal";
                    cout<<"\n enter the no of patient";
                    cin>>n;
          for(i=0;i<n;i++)
          {
                    cout<<"\n enter severity=";
               cin>>priority;
         cout<<"\n enter patient name=";
                    cin>>name;

           q.pq_insert(priority,name);

          }
          break;

case 2:

          q.display();
          break;
case 3:
```

```
            q.p_delete();
            break;
case 4:
              cout<<"\n wrong choice";
    cin>>ch;
    break;
}

cout<<"\n is any patient=?";
cin>>ans;
}while(ans==1);

return 0;

 }

/*
OUTPUT:
 hospital history
 1.enter the record u want
 2.display
 3.delete
 enter ur choice1

 1.serious
 2.medium
 3.normal
 enter the no of patient3
```

enter severity=1

enter patient name=abc

enter severity=3

enter patient name=xyz

enter severity=2

enter patient name=pqr

is any patient=?1

hospital history

1.enter the record u want

2.display

3.delete

enter ur choice2

priority	name	patient name
1	serious	abc
2	medium	pqr
3	normal	xyz

is any patient=?1

hospital history

1.enter the record u want

2.display

3.delete

enter ur choice3

abc patient checked successfully

priority	name	patient name
2	medium	pqr
3	normal	xyz

is any patient=?

***/**