**Program No.08**

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*The ticket booking system of Cinemax theater has to be implemented using C++ program. There are 10 rows and 7 seats in each row. Doubly circular linked list has to be maintained to keep track of free seats at rows. Assume some random booking to start with. Use array to store pointers (Head pointer) to each row. On demand

1. The list of available seats is to be displayed
2. The seats are to be booked

The booking can be cancelled.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*#include<iostream>

#include<string>

using namespace std;

class node

{ public:

node \*prev;

int flag;

int seatno;

string moviename;

float price;

node \*next;

};

class cinemax

{ public :

node \*arr[10];

void create();

void show();

void book();

void cancel();

void available();

int fun();

cinemax()

{int i;

for(i=0;i<10;i++)

{

arr[i]=0;

}

}

};

void cinemax::create()

{

int i,f;

node \*p,\*t;

for(i=0;i<10;i++)

{

for(f=0;f<7;f++)

{

p=new node;

p->flag=0;

p->seatno=f+1;

p->moviename="KGF";

p->price=150;

p->next=p->prev=p;

if(arr[i]==NULL)

{

arr[i]=p;

t=p;

}

else{

t->next=p;

p->prev=t;

p->next=arr[i];

arr[i]->prev=p;

t=p;

}

}

}

}

void cinemax :: show()

{ node \*g;

int i,j;

for(i=0;i<10;i++)

{ g=arr[i];

cout<<"Row :"<<i+1<<"\n";

for(j=0;j<7;j++)

{

cout<<g->flag<<"|"<<g->seatno<<"|"<<g->moviename<<"|"<<g->price<<"|->";

g=g->next;

}

cout<<endl;

}

}

void cinemax::book()

{

int i=0,m,k,f;

node \*t;

cout<<"\nEnter Row Number :";

cin>>m;

if(m<=10)

{

cout<<"\nEnter Seat Number :";

cin>>k;

t=arr[m-1];

for(f=0;f<7;f++)

{

if(t->seatno==k)

{ if(t->flag==1)

{

cout<<"Seat is already Booked !";

i=1;

break;

}

else

{

t->flag=1;

cout<<"Seat Booked Successfully !";

i=1;

break;

}

}

t=t->next;

}

if(i==0)

{

cout<<"Enter valid seat number !";

}

}

else

{

cout<<"Enter valid row number !";

}

}

void cinemax :: cancel()

{

int i=0,m,k,f;

node \*t;

cout<<"\nEnter Row Number :";

cin>>m;

if(m<=10)

{

cout<<"\nEnter Seat Number :";

cin>>k;

t=arr[m-1];

for(f=0;f<7;f++)

{

if(t->seatno==k)

{ if(t->flag==0)

{

cout<<"Seat is already Empty !";

i=1;

break;

}

else

{

t->flag=0;

cout<<"Seat Cancelled Successfully !";

i=1;

break;

}

}

t=t->next;

}

if(i==0)

{

cout<<"Enter valid row number/seat number !";

}

}

else

{

cout<<"Enter valid row number !";

}

}

void cinemax :: available()

{

int i,j;

node \*t;

for(i=0;i<10;i++)

{cout<<"\nRow "<<i+1<<" :";

t=arr[i];

for(j=0;j<7;j++)

{

if(t->flag==0)

{

cout<<t->seatno<<"|";

}

t=t->next;

}

}

}

int cinemax :: fun()

{ int x;

cout<<"\nWELCOME TO CINEMAX THEATRE BOOKING PORTAL";

cout<<"\n1.Display list of available seats\n2.Book seat\n3.Cancel booked seat\n4.Exit\nEnter your choice :";

cin>>x;

if(x==1)

{

available();

fun();

}

else if(x==2)

{

book();

fun();

}

else if(x==3)

{

cancel();

fun();

}

else if(x==4)

{

return 0;

}

else

{

cout<<"Enter valid choice !";

fun();

}

}

int main()

{

cinemax c;

c.create();

c.show();

c.fun();

}