

## **Practical No. 08 (Group C)**

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Div : A

Batch : A-2

### **Problem Statement :**

Write a C++ program to make a ticket booking system of cinemax theatre has to be implemented. 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 starting with. Use array to store pointers to each rows, on demand.

- a) The list of available seats is to be displayed.
- b) The booking can be cancelled.
- c) The seats are to be booked.

### **Code :**

```
#include <iostream>
```

```
#include<stdlib.h>
```

```
using namespace std;
```

```
class node
```

```
{ public:
```

```
node* next;
```

```
node* prev;
```

```
int seat;

string id;

int status;

};

class cinemax

{

public:

node* head,* tail ,* temp;


cinemax()

{

head=NULL;

}

void create_list();

void display();

void book();

void cancel();

void avail();


};

void cinemax::create_list() {

int i=1;

temp=new node;

temp->seat=1;
```

```

temp->status=0;

temp->id="null";

tail=head=temp; for(int
i=2;i<=70;i++)

{

node *p;

p= new node;

p->seat=i;


p->status=0;

p->id="null";

tail->next=p;

p->prev=tail;

tail=p;

tail->next=head;

head->prev=tail;

}

}

void cinemax::display()

{

{ int r=1;

node* temp;

temp=head;

```

```

int count=0;

cout<<"\n----- --\n";

cout<<" Screen this way \n";

cout<<"-----\n";

while(temp->next!=head)
{
if(temp->seat/10==0)

cout<<"S0"<<temp->seat<<" :";

else

cout<<"S"<<temp->seat<<" :";

if(temp->status==0)

cout<<"|_| ";

else

cout<<"|_B_| ";

count++;

if(count%7==0)

{

cout<<endl;

r++;

}

temp=temp->next;

}

```

```
cout<<"S"<<temp->seat<<" :";
```

```
if(temp->status==0)
```

```
cout<<"|_|_| ";
```

```
else
```

```
cout<<"|_B_| ";
```

```
}
```

```
}
```

```
void cinemax::book()
```

```
{ int x;
```

```
string y;
```

```
label:
```

```
cout<<"\n\n\nEnter seat number to be booked\n"; cin>>x;
```

```
cout<<"Enter your ID number\n";
```

```
cin>>y;
```

```
if(x<1||x>70)
```

```
{
```

```
cout<<"Enter correct seat number to book (1-70)\n"; goto label;
```

```
}
```

```
node *temp;
```

```
temp=new node;
```

```
temp=head;
```

```
while(temp->seat!=x)
```

```
{
```

```
temp=temp->next;
```

```
}
```

```
if(temp->status==1)
```

```
cout<<"Seat already booked!\n";
```

```
else{
```

```
temp->status=1;
```

```
temp->id=y;
```

```
cout<<"Seat "<<x<<" booked!\n";
```

```
}
```

```
}
```

```
void cinemax::cancel()
```

```
{
```

```
int x;
```

```
string y;
```

```
label1:
```

```
cout<<"Enter seat number to cancel booking\n"; cin>>x;
```

```
cout<<"Enter you ID\n";
```

```
cin>>y;
```

```
if(x<1||x>70)
```

```
{
```

```
cout<<"Enter correct seat number to cancel (1-70)\n"; goto label1;
```

```

}

node *temp;

temp=new node;

temp=head;

while(temp->seat!=x)

{

temp=temp->next;

}

if(temp->status==0)

{

cout<<"Seat not booked yet!!\n"; }

else

{

if(temp->id==y)

{

temp->status=0;

cout<<"Seat Cancelled!\n"; }

else

cout<<"Wrong User ID !!! Seat cannot be cancelled!!!\n"; }

}

void cinemax::avail()

{

```

```

int r=1;

node* temp;

temp=head;

int count=0;

cout<<"\n\n\n\n";


cout<<"\n----- --\n";

cout<<" Screen this way \n";

cout<<"----- \n";

while(temp->next!=head)

{

{

if(temp->seat/10==0)

cout<<"S0"<<temp->seat<<" :";

else

cout<<"S"<<temp->seat<<" :";

if(temp->status==0)

cout<<"|_| ";

else if(temp->status==1)

cout<<" ";


count++;

if(count%7==0)

```



```

{

cout<<endl;

}

}

temp=temp->next;

}

if(temp->status==0)

{

cout<<"S"<<temp->seat<<" :";

if(temp->status==0)

cout<<"|___| ";

}

}

int main()

{ cinemax obj;

obj.create_list();

int ch;

char c='y';

while(c=='y')

```

```

{ obj.display();

cout<<"\n*****\n"; cout<<" CINEMAX
MOVIE THEATRE\n";

cout<<"*****\n";

cout<<"\nEnter Choice\n1.Current SeatStatus\n2.Book Seat \n3.Available
Seat\n4.CancelSeat\n";

cin>>ch;

switch(ch)
{
case 1:obj.display();

break;

case 2: obj.book();

break;

case 3:obj.avail();

break;

case 4: obj.cancel();

break;

default: cout<<"Wrong choice input\n";

}

cout<<"\nDo you want to perform any other operation : (y/n)\n"; cin>>c;

}

return 0;

}

```

Output :

```
user@user-VirtualBox: ~/S211045_Atharva
user@user-VirtualBox:~/S211045_Atharva$ g++ Practical8.cpp -o p
user@user-VirtualBox:~/S211045_Atharva$ ./p

-----
Screen this way
-----
S01 :|_| S02 :|_| S03 :|_| S04 :|_| S05 :|_| S06 :|_| S07 :|_|
S08 :|_| S09 :|_| S10 :|_| S11 :|_| S12 :|_| S13 :|_| S14 :|_|
S15 :|_| S16 :|_| S17 :|_| S18 :|_| S19 :|_| S20 :|_| S21 :|_|
S22 :|_| S23 :|_| S24 :|_| S25 :|_| S26 :|_| S27 :|_| S28 :|_|
S29 :|_| S30 :|_| S31 :|_| S32 :|_| S33 :|_| S34 :|_| S35 :|_|
S36 :|_| S37 :|_| S38 :|_| S39 :|_| S40 :|_| S41 :|_| S42 :|_|
S43 :|_| S44 :|_| S45 :|_| S46 :|_| S47 :|_| S48 :|_| S49 :|_|
S50 :|_| S51 :|_| S52 :|_| S53 :|_| S54 :|_| S55 :|_| S56 :|_|
S57 :|_| S58 :|_| S59 :|_| S60 :|_| S61 :|_| S62 :|_| S63 :|_|
S64 :|_| S65 :|_| S66 :|_| S67 :|_| S68 :|_| S69 :|_| S70 :|_|
*****
CINEMAX MOVIE THEATRE
*****

Enter Choice
1.Current SeatStatus
2.Book Seat
3.Available Seat
4.CancelSeat
2

Enter seat number to be booked
45
Enter your ID number
123
Seat 45 booked!

Do you want to perform any other operation : (y/n)
y

-----
Screen this way
-----
S01 :|_| S02 :|_| S03 :|_| S04 :|_| S05 :|_| S06 :|_| S07 :|_|
S08 :|_| S09 :|_| S10 :|_| S11 :|_| S12 :|_| S13 :|_| S14 :|_|
S15 :|_| S16 :|_| S17 :|_| S18 :|_| S19 :|_| S20 :|_| S21 :|_|
S22 :|_| S23 :|_| S24 :|_| S25 :|_| S26 :|_| S27 :|_| S28 :|_|
S29 :|_| S30 :|_| S31 :|_| S32 :|_| S33 :|_| S34 :|_| S35 :|_|
S36 :|_| S37 :|_| S38 :|_| S39 :|_| S40 :|_| S41 :|_| S42 :|_|
```

```

-----
S01 :|_| S02 :|_| S03 :|_| S04 :|_| S05 :|_| S06 :|_| S07 :|_|
S08 :|_| S09 :|_| S10 :|_| S11 :|_| S12 :|_| S13 :|_| S14 :|_|
S15 :|_| S16 :|_| S17 :|_| S18 :|_| S19 :|_| S20 :|_| S21 :|_|
S22 :|_| S23 :|_| S24 :|_| S25 :|_| S26 :|_| S27 :|_| S28 :|_|
S29 :|_| S30 :|_| S31 :|_| S32 :|_| S33 :|_| S34 :|_| S35 :|_|
S36 :|_| S37 :|_| S38 :|_| S39 :|_| S40 :|_| S41 :|_| S42 :|_|
S43 :|_| S44 :|_| S45 :|_B_| S46 :|_| S47 :|_| S48 :|_| S49 :|_|
S50 :|_| S51 :|_| S52 :|_| S53 :|_| S54 :|_| S55 :|_| S56 :|_|
S57 :|_| S58 :|_| S59 :|_| S60 :|_| S61 :|_| S62 :|_| S63 :|_|
S64 :|_| S65 :|_| S66 :|_| S67 :|_| S68 :|_| S69 :|_| S70 :|_|

```

\*\*\*\*\*

CINEMAX MOVIE THEATRE

\*\*\*\*\*

Enter Choice

1.Current SeatStatus

2.Book Seat

3.Available Seat

4.CancelSeat

2

Enter seat number to be booked

07

Enter your ID number

456

Seat 7 booked!

Do you want to perform any other operation : (y/n)

y

-----  
Screen this way

```

-----
S01 :|_| S02 :|_| S03 :|_| S04 :|_| S05 :|_| S06 :|_| S07 :|_B_|
S08 :|_| S09 :|_| S10 :|_| S11 :|_| S12 :|_| S13 :|_| S14 :|_|
S15 :|_| S16 :|_| S17 :|_| S18 :|_| S19 :|_| S20 :|_| S21 :|_|
S22 :|_| S23 :|_| S24 :|_| S25 :|_| S26 :|_| S27 :|_| S28 :|_|
S29 :|_| S30 :|_| S31 :|_| S32 :|_| S33 :|_| S34 :|_| S35 :|_|
S36 :|_| S37 :|_| S38 :|_| S39 :|_| S40 :|_| S41 :|_| S42 :|_|
S43 :|_| S44 :|_| S45 :|_B_| S46 :|_| S47 :|_| S48 :|_| S49 :|_|
S50 :|_| S51 :|_| S52 :|_| S53 :|_| S54 :|_| S55 :|_| S56 :|_|
S57 :|_| S58 :|_| S59 :|_| S60 :|_| S61 :|_| S62 :|_| S63 :|_|
S64 :|_| S65 :|_| S66 :|_| S67 :|_| S68 :|_| S69 :|_| S70 :|_|

```

\*\*\*\*\*

```

*****
CINEMAX MOVIE THEATRE
*****

```

Enter Choice

1.Current SeatStatus

2.Book Seat

3.Available Seat

4.CancelSeat

4

Enter seat number to cancel booking

07

Enter you ID

456

Seat Cancelled!

Do you want to perform any other operation : (y/n)

y

-----  
Screen this way

```

S01 :|_| S02 :|_| S03 :|_| S04 :|_| S05 :|_| S06 :|_| S07 :|_|
S08 :|_| S09 :|_| S10 :|_| S11 :|_| S12 :|_| S13 :|_| S14 :|_|
S15 :|_| S16 :|_| S17 :|_| S18 :|_| S19 :|_| S20 :|_| S21 :|_|
S22 :|_| S23 :|_| S24 :|_| S25 :|_| S26 :|_| S27 :|_| S28 :|_|
S29 :|_| S30 :|_| S31 :|_| S32 :|_| S33 :|_| S34 :|_| S35 :|_|
S36 :|_| S37 :|_| S38 :|_| S39 :|_| S40 :|_| S41 :|_| S42 :|_|
S43 :|_| S44 :|_| S45 :|_B_| S46 :|_| S47 :|_| S48 :|_| S49 :|_|
S50 :|_| S51 :|_| S52 :|_| S53 :|_| S54 :|_| S55 :|_| S56 :|_|
S57 :|_| S58 :|_| S59 :|_| S60 :|_| S61 :|_| S62 :|_| S63 :|_|
S64 :|_| S65 :|_| S66 :|_| S67 :|_| S68 :|_| S69 :|_| S70 :|_|

```

```

*****
CINEMAX MOVIE THEATRE
*****

```

Enter Choice

1.Current SeatStatus

2.Book Seat

3.Available Seat

4.CancelSeat

3

-----  
Screen this way

```

S01 :|_| S02 :|_| S03 :|_| S04 :|_| S05 :|_| S06 :|_| S07 :|_|
S08 :|_| S09 :|_| S10 :|_| S11 :|_| S12 :|_| S13 :|_| S14 :|_|
S15 :|_| S16 :|_| S17 :|_| S18 :|_| S19 :|_| S20 :|_| S21 :|_|
S22 :|_| S23 :|_| S24 :|_| S25 :|_| S26 :|_| S27 :|_| S28 :|_|
S29 :|_| S30 :|_| S31 :|_| S32 :|_| S33 :|_| S34 :|_| S35 :|_|
S36 :|_| S37 :|_| S38 :|_| S39 :|_| S40 :|_| S41 :|_| S42 :|_|
S43 :|_| S44 :|_| S45 :|_| S46 :|_| S47 :|_| S48 :|_| S49 :|_|
S50 :|_| S51 :|_| S52 :|_| S53 :|_| S54 :|_| S55 :|_| S56 :|_|
S57 :|_| S58 :|_| S59 :|_| S60 :|_| S61 :|_| S62 :|_| S63 :|_|
S64 :|_| S65 :|_| S66 :|_| S67 :|_| S68 :|_| S69 :|_| S70 :|_|

```

Do you want to perform any other operation : (y/n)

n

user@user-VirtualBox:~/S211045\_Atharva\$