#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 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";

    }

}

int main()

{

    cinemax obj;

    obj.create\_list();

    int ch;

    char c='y';

    while(c=='y')

    {

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

        cout<<" CINEMAX MOVIE THEATRE\n";

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

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

        cin>>ch;

        switch(ch)

        {

            case 1:obj.display();

            break;

            case 2: obj.book();

            break;

            case 3: 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:-

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

CINEMAX MOVIE THEATRE

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Enter Choice

1.Current SeatStatus

2.Book Seat

3.CancelSeat

2

Enter seat number to be booked

3

Enter your ID number

a

Seat 3 booked!

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

y

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CINEMAX MOVIE THEATRE

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Enter Choice

1.Current SeatStatus

2.Book Seat

3.CancelSeat

2

Enter seat number to be booked

4

Enter your ID number

b

Seat 4 booked!

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

y

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CINEMAX MOVIE THEATRE

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Enter Choice

1.Current SeatStatus

2.Book Seat

3.CancelSeat

1

------------------------------------------------------------------------------------

Screen this way

------------------------------------------------------------------------------------

S01 :|\_\_\_| S02 :|\_\_\_| S03 :|\_B\_| S04 :|\_B\_| 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)

y

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

CINEMAX MOVIE THEATRE

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Enter Choice

1.Current SeatStatus

2.Book Seat

3.CancelSeat

3

Enter seat number to cancel booking

3

Enter you ID

b

Wrong User ID !!! Seat cannot be cancelled!!!

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

y

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

CINEMAX MOVIE THEATRE

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Enter Choice

1.Current SeatStatus

2.Book Seat

3.CancelSeat

3

Enter seat number to cancel booking

3

Enter you ID

a

Seat Cancelled!

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

y

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

CINEMAX MOVIE THEATRE

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Enter Choice

1.Current SeatStatus

2.Book Seat

3.CancelSeat

1

------------------------------------------------------------------------------------

Screen this way

------------------------------------------------------------------------------------

S01 :|\_\_\_| S02 :|\_\_\_| S03 :|\_\_\_| S04 :|\_B\_| 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)