```cpp
/*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

a) The list of available seats is to be displayed

b) The seats are to be booked

c) The booking can be cancelled

*/



#include <iostream>

#include <stdlib.h>

using namespace std;



class node {

public:

    node* next;

    node* prev;

    int seat;

    string id;

    int status;

};



class cinemax {

public:
```

```cpp
    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;
```

```cpp
        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 << "|___| ";
```

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        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;
```

```cpp
    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";
```

```cpp
    cin >> x;

    cout << "Enter your 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() {
```

```cpp
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;

}
```

```cpp
        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 Seat Status\n2. Book Seat\n3. Available Seat\n4. Cancel
Seat\n";

        cin >> ch;

        switch (ch) {

            case 1: obj.display();

                    break;

            case 2: obj.book();

                    break;

            case 3: obj.avail();
```

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                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;

}
```