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Q batch Comp-2

Group C-20

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:

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";

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";

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')

{

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

cout << " CINEMAX MOVIE THEATRE\n";

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

obj.display();

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

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

PS C:\Users\MANASWI> cd "c:\C++ Codes\.vscode\" ; if ($?) { g++ c20.cpp -o c20 } ; if ($?) { .\c20 }

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CINEMAX MOVIE THEATRE

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

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 :|\_\_\_|

Menu

1.Current SeatStatus

2.Book Seat

3.Available Seat

4.CancelSeat

Enter Choice: 3

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

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)