```
/********************************LAB ASSIGNMENT_5**********************************
The ticket booking system of Cinemax theater has to be implemented. There are 10 rows
and 7 seats in each row. Doubly linked list has to be maintained to keep track of free seats
in rows. Assume some random booking to start with. Use an 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 <stdio.h>
#include <stdlib.h>
#include <string.h>


struct Node {
  int seat;
  int status;
  char id[20];
  struct Node* next;
  struct Node* prev;
};


struct Node* head = NULL;
struct Node* tail = NULL;


void create_list() {

  head = (struct Node*)malloc(sizeof(struct Node));

  head->seat = 1;
  head->status = 0;

  strcpy(head->id, "null");
  head->prev = NULL;
  head->next = NULL;
  tail = head;


  for (int i = 2; i <= 70; i++) {
     struct Node* p = (struct Node*)malloc(sizeof(struct Node));

     p->seat = i;
     p->status = 0;
     strcpy(p->id, "null");


     tail->next = p;
     p->prev = tail;
     tail = p;
     tail->next = head;
```

```c
        head->prev = tail;
    }
}


void display() {

    struct Node* temp = head;
    int count = 0;

    printf("\n\n*****************************Movie Tickets Screen*****************************\n\n");

    do {
        if (temp->seat < 10)
            printf("S0%d :", temp->seat);
        else
            printf("S%d :", temp->seat);


        if (temp->status == 0)
            printf("|___| ");
        else
            printf("|_B_| ");


        count++;
        if (count % 7 == 0) printf("\n");


        temp = temp->next;
    } while (temp != head);
}


void book() {
    int x;
    char y[20];
    label:
    printf("\nEnter seat number to be booked (1-70): ");
    scanf("%d", &x);
    printf("Enter your ID: ");
    scanf("%s", y);


    if (x < 1 || x > 70) {
        printf("Enter correct seat number to book (1-70)\n");
        goto label;
    }


    struct Node* temp = head;
```

```c
    while (temp->seat != x) {
        temp = temp->next;
    }


    if (temp->status == 1)
        printf("Seat already booked!\n");
    else {
        temp->status = 1;
        strcpy(temp->id, y);
        printf("Seat %d booked!\n", x);
    }
}


void cancel() {
    int x;
    char y[20];
    label1:
    printf("\nEnter seat number to cancel booking (1-70): ");
    scanf("%d", &x);
    printf("Enter your ID: ");
    scanf("%s", y);


    if (x < 1 || x > 70) {
        printf("Enter correct seat number to cancel (1-70)\n");
        goto label1;
    }


    struct Node* temp = head;
    while (temp->seat != x) {
        temp = temp->next;
    }


    if (temp->status == 0) {
        printf("Seat not booked yet!!\n");
    } else {
        if (strcmp(temp->id, y) == 0) {
            temp->status = 0;
            strcpy(temp->id, "null");
            printf("Seat Cancelled!\n");
        } else {
            printf("Wrong User ID !!! Seat cannot be cancelled!!!\n");
        }
    }
}


void avail() {
```

```c
    struct Node* temp = head;
    int count = 0;

    printf("\n\n*****************************Movie Tickets Screen*****************************\n\n");



    do {
        if (temp->seat < 10)
            printf("S0%d :", temp->seat);
        else
            printf("S%d :", temp->seat);


        if (temp->status == 0)
            printf("|___| ");
        else
            printf("      ");


        count++;
        if (count % 7 == 0) printf("\n");


        temp = temp->next;
    } while (temp != head);
}


int main() {
    create_list();
    int ch;
    char c = 'y';


    while (c == 'y') {
        display();

        printf("\n********************WELCOME TO CINEMAX MOVIE THEATRE********************\n");


        printf("\n1. Display Ticket Status\n2. Book your Seat\n3. Check available Seat\n4. Cancel your Seat\n5. Exit\n");
        printf("\nEnter your Choice:");
        scanf("%d", &ch);


        switch (ch) {
            case 1: display();
            break;
            case 2: book();
```

```c
                break;
                case 3: avail();
                break;
                case 4: cancel();
                break;
                case 5:
                break;
                default: printf("Wrong choice input\n");
        }


        printf("\nDo you want to perform any other operation? (y/n): ");
        scanf(" %c", &c);
    }


    return 0;
}
```

/*********************************OUTPUT*************************************
****************************Movie Tickets Screen*****************************


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 :|___|


*********************WELCOME TO CINEMAX MOVIE THEATRE***********************


1. Display Ticket Status
2. Book your Seat
3. Check available Seat
4. Cancel your Seat
5. Exit


Enter your Choice:2


Enter seat number to be booked (1-70): 39
Enter your ID: 741741741
Seat 39 booked!


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

***************************Movie Tickets Screen****************************

```
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 :|_B_| 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 :|___|
```

*********************WELCOME TO CINEMAX MOVIE THEATRE************************

1. Display Ticket Status
2. Book your Seat
3. Check available Seat
4. Cancel your Seat
5. Exit

Enter your Choice:2

Enter seat number to be booked (1-70): 40
Enter your ID: 741258963
Seat 40 booked!

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

*****************************Movie Tickets Screen****************************

```
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 :|_B_| S40 :|_B_| 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 :|___|
```

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*WELCOME TO CINEMAX MOVIE THEATRE\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1. Display Ticket Status
2. Book your Seat
3. Check available Seat
4. Cancel your Seat
5. Exit

Enter your Choice:2

Enter seat number to be booked (1-70): 46
Enter your ID: 789654778
Seat 46 booked!

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

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Movie Tickets Screen\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

```
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 :|_B_| S40 :|_B_| S41 :|___| S42 :|___|
S43 :|___| S44 :|___| S45 :|___| S46 :|_B_| S47 :|___| S48 :|___| S49 :|___|
S50 :|___| S51 :|___| S52 :|___| S53 :|___| S54 :|___| S55 :|___| S56 :|___|
S57 :|___| S58 :|___| S59 :|___| S60 :|___| S61 :|___| S62 :|___| S63 :|___|
S64 :|___| S65 :|___| S66 :|___| S67 :|___| S68 :|___| S69 :|___| S70 :|___|
```

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*WELCOME TO CINEMAX MOVIE THEATRE\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1. Display Ticket Status
2. Book your Seat
3. Check available Seat
4. Cancel your Seat
5. Exit

Enter your Choice:3

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Movie Tickets Screen\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

```
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): y

****************************Movie Tickets Screen****************************

```
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 :|_B_| S40 :|_B_| S41 :|___| S42 :|___|
S43 :|___| S44 :|___| S45 :|___| S46 :|_B_| S47 :|___| S48 :|___| S49 :|___|
S50 :|___| S51 :|___| S52 :|___| S53 :|___| S54 :|___| S55 :|___| S56 :|___|
S57 :|___| S58 :|___| S59 :|___| S60 :|___| S61 :|___| S62 :|___| S63 :|___|
S64 :|___| S65 :|___| S66 :|___| S67 :|___| S68 :|___| S69 :|___| S70 :|___|
```

********************WELCOME TO CINEMAX MOVIE THEATRE***********************

1. Display Ticket Status
2. Book your Seat
3. Check available Seat
4. Cancel your Seat
5. Exit

Enter your Choice:1

****************************Movie Tickets Screen****************************

```
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 :|_B_| S40 :|_B_| S41 :|___| S42 :|___|
S43 :|___| S44 :|___| S45 :|___| S46 :|_B_| 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

****************************Movie Tickets Screen****************************

```
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 :|_B_| S40 :|_B_| S41 :|___| S42 :|___|
S43 :|___| S44 :|___| S45 :|___| S46 :|_B_| S47 :|___| S48 :|___| S49 :|___|
S50 :|___| S51 :|___| S52 :|___| S53 :|___| S54 :|___| S55 :|___| S56 :|___|
S57 :|___| S58 :|___| S59 :|___| S60 :|___| S61 :|___| S62 :|___| S63 :|___|
S64 :|___| S65 :|___| S66 :|___| S67 :|___| S68 :|___| S69 :|___| S70 :|___|
```

*********************WELCOME TO CINEMAX MOVIE THEATRE*********************

1. Display Ticket Status
2. Book your Seat
3. Check available Seat
4. Cancel your Seat
5. Exit

Enter your Choice:4

Enter seat number to cancel booking (1-70): 46
Enter your ID: 789654778
Seat Cancelled!

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

****************************Movie Tickets Screen****************************

```
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 :|_B_| S40 :|_B_| 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 :|___|
```

*********************WELCOME TO CINEMAX MOVIE THEATRE************************

1. Display Ticket Status
2. Book your Seat
3. Check available Seat
4. Cancel your Seat
5. Exit

Enter your Choice:5

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