```c
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <ctype.h>

#define MAX_ATTEMPTS 3
#define WARNING_ATTEMPTS 2

#define RESERVATION_FILE "reservations.txt"

// Global variables declared.
int attempts = 0;
int loggedIn = 0;
char adm[20], pwd[20], cus[20];
int ticketPrice = 100;
int count = 0;
int id1 = 1000;



// Structure to store customer information.
struct Customer {
    char name[50];
    long long int phone;
    int seat;
    int id;
};

// Array of structures to store customer information.
struct Customer person[100];

//Memory allocation for seatnumber
int seats[4][101] = {0}; // 0: Available, 1: Reserved

// Function
Deceleration....................................................
int choice1();
                  //  90 to 108
int admin();
                 //  111 to 203
```

```
int user();
                //   210 to 307
int movie(void);
               //    310 to 336
void reservation();
               //    288 to 380
void seat_cancellation();
              //     383 to 419
void ticket1(int choice, char name[10], int id1, int price);
             //      428 to 441
void ticket2(int choice, char name[10], int id1, int price);
            //       443 to 456
void ticket3(int choice, char name[10], int id1, int price);
            //       458 to 471
void save_reservations(int selectedMovie);
          //        473 to 488
void view_reserved_seats();
         //

// Main Function Starts from
here.............................................................
int main()
{


    int choice;
    int userChoice;

    while (1)
    {
        choice = choice1();
        switch (choice)
        {
        case 1:
            system("cls");
            admin();
            break;
        case 2:
            system("cls");
            userChoice = user();


            break;
        case 3:


            exit(0);
            break;
        default:
            system("cls");
            printf("\nPlease select the correct menu.\n\n\n\n");
            system("PAUSE");

        }
         printf("-----------------------------------------------
----------------------------------------------------------------
--------\n");
    }

    return 0;
}

// Function to display the first interface and menu of the
program

int choice1()
{
    system("cls");
    int menu;

printf("\t\t\t\t||============================================||\n");

printf("\t\t\t\t||============================================||\n");
    printf("\t\t\t\t||
  || \n");
    printf("\t\t\t\t||   Welcome to Movie Ticket Booking System
  ||\n");
    printf("\t\t\t\t||
  ||\n");
```

```
printf("\t\t\t\t||============================================||\n");

printf("\t\t\t\t||============================================||\n");
    printf("\n\t\t\t\t\t\t1. Admin System\n");
    printf("\t\t\t\t\t\t2. User System\n");
    printf("\t\t\t\t\t\t3. Exit System\n\n");
    printf("Select the interface:  ");
    scanf("%d", &menu);
    while (getchar() != '\n');//clear input buffer
    return menu;
}

// Admin function for admin panel.
int admin()
{
    int use;
    int i;
    printf("Enter admin_name: ");
    scanf("%s", adm);
    fflush(stdin);
    printf("Enter password: ");
    scanf("%s", pwd);
    fflush(stdin);

    if (strcmp(adm, "citizen") == 0 && strcmp(pwd, "1234") == 0)
    {
        printf("Login Successful....\n");

        system("cls");


printf("\t\t\t\t||============================================||\n");

printf("\t\t\t\t||============================================||\n");
        printf("\t\t\t\t||
      || \n");
        printf("\t\t\t\t||          Welcome to Admin Panel
      ||\n");
```

```
        printf("\t\t\t\t||
      ||\n");

printf("\t\t\t\t||============================================||\n");

printf("\t\t\t\t||============================================||\n");
        printf("\n\t\t\t\t\t1. To view the reserved Seats\n");
        printf("\t\t\t\t\t2. To change the price of tickets\n");
        printf("\t\t\t\t\t3. Exit System\n\n");
        loggedIn = 1;
         for(i=1;i<4;i++)
        {
        printf("\nSelect the Menu: ");
        scanf("%d", &use);



         if (use < 1 || use > 3)
            {
                printf("Invalid menu selection. Please choose a
valid option.\n");

            }

              else
            {
                break;
            }
        }

        switch (use)
        {
        case 1:

             view_reserved_seats();
             system("PAUSE");
             break;
        case 2:

            printf("Enter new ticket price: ");
            scanf("%d", &ticketPrice);
            printf("Ticket price changed to: %d\n",
ticketPrice);
            break;
            break;

        case 3:


            exit(0);
            break;

        default:
            printf("Invalid selection.\n");
            system("PAUSE");
        }
    }

    else
    {
        attempts++;
        printf("\nWrong Password\n");
        printf("\nYou had %d time wrong attempt\n", attempts);

        if (attempts == WARNING_ATTEMPTS)
        {
            printf("\nWarning: You have %d attempt(s)
remaining.\n\n", MAX_ATTEMPTS - attempts);
        }
        if (attempts >= MAX_ATTEMPTS)
        {
            printf("Maximum login attempts exceeded.
Exiting...\n");


            exit(0);
        }
    }
    return use;
}


// User function for user panel.
int user()
{

    int use;
    int i;
    int selectedMovie;
    printf("Enter user_name: ");
    scanf("%s", cus);
    while (getchar() != '\n');
    printf("Enter password: ");
    scanf("%s", pwd);
    while (getchar() != '\n');

    if (strcmp(cus, "citizen") == 0 && strcmp(pwd, "1234") == 0)
    {
        printf("Login Successful....\n");

        system("cls");


printf("\t\t\t\t||============================================||\n");

printf("\t\t\t\t||============================================||\n");
        printf("\t\t\t\t||
      || \n");
        printf("\t\t\t\t||           Welcome to User Panel
      ||\n");
        printf("\t\t\t\t||
      ||\n");

printf("\t\t\t\t||============================================||\n");

printf("\t\t\t\t||============================================||\n");
```

```
        printf("\t\t\t\t\t\t1. To Purchase tickets\n");
        printf("\t\t\t\t\t\t2. To Cancel Seats\n");
        printf("\t\t\t\t\t\t3. Exit System\n\n");

        loggedIn = 1;


        for(i=1;i<4;i++)
        {
        printf("\nSelect the Menu: ");
        scanf("%d", &use);



         if (use < 1 || use > 3)
            {
                printf("Invalid menu selection. Please choose a valid option.\n");
                system("PAUSE");
            }

              else
            {
                break;
            }
        }

        switch (use)
        {
        case 1:
            system("cls");
            reservation();
            system("PAUSE");
            break;
        case 2:
            system("cls");
            seat_cancellation();

            system("PAUSE");
            break;
        case 3:


            exit(0);
            break;


        default:
            printf("Invalid selection.\n");
            system("PAUSE");
        }
    }
    else
    {
        attempts++;
        printf("\nWrong Password\n");
        printf("\nYou had %d time wrong attempt.\n\n\n",
attempts);

        if (attempts == WARNING_ATTEMPTS)
        {
            printf("Warning: You have %d attempt(s)
remaining.\n\n", MAX_ATTEMPTS - attempts);
        }
        if (attempts >= MAX_ATTEMPTS)
        {
            printf("Maximum login attempts exceeded.
Exiting...\n");

            exit(0);
        }
        system("PAUSE");
    }

    return use;
}

// Function to display available movies and get user's choice.
```

```
int movie()
{

    int i;

    do
    {
        system("cls");
        printf("\t\t\twhich movie you want to see?\n");
        printf("\t\t\t----------------------------\n\n");
        printf("\t\t\tpress 1 for Avengers: EndGame\n\n");
        printf("\t\t\tpress 2 for Captain Marvel\n\n");
        printf("\t\t\tpress 3 for Spider-Man: Far From Home\n");
        printf("Select the movie: ");
        scanf("%d", &i);

        if (i< 1 || i > 3)
        {
            printf("\nInvalid movie selection. Please choose a
valid option.\n");
            system("PAUSE");
        }

    } while (i < 1 || i > 3);

    system("cls");
    return i;
}

// Function to reserve a seat for the user.
void reservation()
{

    int selectedMovie = movie();
    int price = ticketPrice; // Sample price, you can change it
based on your requirements

    printf("\n\t\t\t\t\t\tAvailable seats:\n");
    printf("----------------------------------------------------
----------------------------------------------------------------
-\n");
```

```
    printf("\t\t\t\t\t Screen for Movie %d\n\n", selectedMovie);
    int i;

//for seaat

    for (i = 1; i <= 100; i++)
    {
        if (seats[selectedMovie][i] == 0)
            printf(" %d \t", i);
        else
            printf(" *\t ");

        if (i % 10 == 0)
            printf("\n\n");
    }
    printf("----------------------------------------------------
----------------------------------------------------------------
--\n");


    char name[50];
    long long int phone;
    int seatChoice;



   while (1) { // Infinite loop until a valid name is entered
        printf("Please enter your name: ");
        scanf(" %24[^\n]%*[^\n]", name); // Read the name (up
to 49 characters to leave space for the null terminator)

        // Loop through each character in the name
        for (i = 0; name[i] != '\0';i++) {
            // Check if the current character is not an
alphabetical character
            if (!isalpha(name[i])) {
                printf("Invalid input. Name should contain only
alphabetical characters.\n");
                break; // Exit the loop if invalid input is
detected
```

```
            }
        }

        // Check if the loop completed without finding invalid
characters
        if (name[i] == '\0') {
            // Valid name input, exit the loop
            break;
        }

    }
    while (1)
    {
        printf("Please enter your phone number: ");

        if (scanf("%lld", &phone)!= 1||0>phone)
        {
            printf("Invalid input. Please enter a valid phone
number.\n");
            while (getchar() != '\n'); // Clear input buffer
        }
        else
        {
            break;
        }
    }


    while (1)
    {
        printf("Which seat number you want? ");

        if (scanf("%d", &seatChoice) != 1 || seatChoice < 1 ||
seatChoice > 100)
        {
            printf("Invalid input. Please enter a valid seat
number.\n");
            while (getchar() != '\n'); // Clear input buffer
        }
        else if (seats[selectedMovie][seatChoice] == 1)
        {
            printf("Sorry, this seat is already booked! Please
choose another seat.\n");
        }
        else
        {
            seats[selectedMovie][seatChoice]=1;
            person[count].seat= seatChoice;

            id1++;


            break;
        }

    }


    // Update the reservation information
    strncpy(person[count].name, name,
sizeof(person[count].name) - 1);
    person[count].name[sizeof(person[count].name) - 1] = '\0';
// Ensure null-terminated
    person[count].phone = phone;
    person[count].seat = seatChoice;
    person[count].id = id1;


       if (selectedMovie == 1) {
                       ticket1(seatChoice, name, id1, price);
                    } else if (selectedMovie == 2) {
                        ticket2(seatChoice, name, id1, price);
                    } else if (selectedMovie == 3) {
                        ticket3(seatChoice, name, id1, price);
                    }
```

```
   count++;// total reservation made

    save_reservations(selectedMovie);
}

// Function to cancel a reserved seat.
void seat_cancellation()
{
      int selectedMovie = movie();
        if (selectedMovie == 1) {
                        printf("Avengers: EndGame)\n");
                    } else if (selectedMovie == 2) {
                        printf("Captain Marvel)\n");
                    } else if (selectedMovie == 3) {
                        printf("Spider-Man: Far From Home)\n");
                    }


    int i;
    char cancelName[50];
    int seatNumber;
    int id;
    int temp;

    printf("Enter your name: ");

    scanf("%s", cancelName);


    printf("Enter your booking id to cancel: ");

    scanf("%d", &id);


    printf("Enter your seat number to cancel: ");

    scanf("%d", &seatNumber);
    for (i=1;i<=3;i++){

    if (seatNumber < 1 || seatNumber > 100)
    {
        printf("Invalid seat number.\n");

           printf("Renter your seat number to cancel: ");

            scanf("%d", &seatNumber);
    }
    else
     break;
}
    if (seats[selectedMovie][seatNumber] == 0)
    {
        printf("This seat is not reserved.\n");
        return;
    }


    for (i = 0; i < count; i++)
    {
        if (strcmp(person[i].name, cancelName) == 0
&&person[i].id == id && person[i].seat == seatNumber)
        {
            seats[selectedMovie][seatNumber] = 0;
            printf("Seat reservation for %s (ID: %d) at seat %d
has been canceled.\n", person[i].name, person[i].id,
seatNumber);
            count--;
        }

            // Save reservations to file after canceling the
seat
          else{
           printf("No matching reservation found for %s,
booking id:%d at seat %d.\n", cancelName,id, seatNumber);

    }
```

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        }
        save_reservations(selectedMovie);
    }








// Function definitions for ticket1, ticket2, and
ticket3................................


void ticket1(int choice, char name[10], int id2, int price)
{
    system("cls");
    printf("\n-----------------THEATER BOOKING TICKET-----------
-----\n");
    printf(" Booking ID : %d \t\t\tShow Name : Avengers:
EndGame\n", id2);
    printf(" Customer   : %s\n", name);
    printf(" Date       : 15-07-2023\n");
    printf(" Time       : 09:00 pm\n");
    printf(" Hall       : 01\n");
    printf(" Seat No.   : %d\n", choice);
    printf(" Price      : %d\n", price);
    printf("----------------------------------------------------
--\n");
    system("PAUSE");
}
```

```
void ticket2(int choice, char name[10], int id2, int price)
{
    system("cls");
    printf("\n-----------------THEATER BOOKING TICKET-----------
-----\n");
    printf(" Booking ID : %d \t\t\tShow Name : Captain
Marvel\n", id2);
    printf(" Customer   : %s\n", name);
    printf(" Date       : 15-07-2023\n");
    printf(" Time       : 09:00 pm\n");
    printf(" Hall       : 02\n");
    printf(" Seat No.   : %d\n", choice);
    printf(" Price      : %d\n", price);
    printf("----------------------------------------------------
--\n");
    system("PAUSE");
}

void ticket3(int choice, char name[10], int id2, int price)
{
    system("cls");
    printf("\n-----------------THEATER BOOKING TICKET-----------
-----\n");
    printf(" Booking ID : %d \t\t\tShow Name : Spider-Man: Far
From Home\n", id2);
    printf(" Customer   : %s\n", name);
    printf(" Date       : 15-07-2023\n");
    printf(" Time       : 09:00 pm\n");
    printf(" Hall       : 03\n");
    printf(" Seat No.   : %d\n", choice);
    printf(" Price      : %d\n", price);
    printf("----------------------------------------------------
--\n");
    system("PAUSE");
}

// Function to save customer reservations to a file, FILE
HANDLING.
```

```
// Function to save customer reservations and ticket details to
a file.
void save_reservations(int selectedMovie) {

    char showName[30]; // Added to store show name for the
ticket
    if (selectedMovie == 1) {
        strcpy(showName, "Avengers: EndGame");
    } else if (selectedMovie == 2) {
        strcpy(showName, "Captain Marvel");
    } else if (selectedMovie == 3) {
        strcpy(showName, "Spider-Man: Far From Home");
    } else {
        printf("Invalid movie selection.\n");
        return;
    }

    FILE* reservedSeatsFile = fopen(RESERVATION_FILE, "a"); //
Use "a" mode to append to the file
    if (reservedSeatsFile == NULL) {
        printf("Error opening file for writing.\n");
        return;
    }

    fprintf(reservedSeatsFile, "\n\nReserved Seats for %s:\n",
showName);


    int i, j;




    // Save ticket information to the file
    for (i = 0; i < count; i++) {
        if (seats[selectedMovie][person[i].seat] == 1) {
            fprintf(reservedSeatsFile, "\n-----------------
THEATER BOOKING TICKET----------------\n");
            fprintf(reservedSeatsFile, " Booking ID : %d
\t\t\tShow Name : %s\n", person[i].id, showName);
```

```
            fprintf(reservedSeatsFile, " Customer   : %s\n",
person[i].name);
            fprintf(reservedSeatsFile, " Date       : 15-07-
2023\n");
            fprintf(reservedSeatsFile, " Time       : 09:00
pm\n");
            fprintf(reservedSeatsFile, " Hall       : %02d\n",
selectedMovie); // Assuming halls are numbered from 1 to 3
            fprintf(reservedSeatsFile, " Seat No.   : %d\n",
person[i].seat);
            fprintf(reservedSeatsFile, " Price      : %d\n",
ticketPrice);
            fprintf(reservedSeatsFile, "------------------------
------------------------------\n");

        }
    }


    fclose(reservedSeatsFile);

    printf("Reserved seat information and ticket details saved
for %s.\n", showName);
}




void view_reserved_seats() {
    int selectedMovie = movie();

    printf("\n\t\t\t\t\t\tReserved seats:\n");
    printf("----------------------------------------------------
----------------------------------------------------------------
-\n");

    int i, j;
    int bookedCount = 0; // Counter for booked seats

    for (i = 1; i <= 100; i++) {
        if (seats[selectedMovie][i] == 1) {
            for (j = 0; j < count; j++) {
                if (person[j].seat == i) {
                    bookedCount++;
                    printf(" Seat No. %d (Reserved by: %s,
Phone: %lld, Movie: ", i, person[j].name, person[j].phone);

                    if (selectedMovie == 1) {
                        printf("Avengers: EndGame)\n");
                    } else if (selectedMovie == 2) {
                        printf("Captain Marvel)\n");
                    } else if (selectedMovie == 3) {
                        printf("Spider-Man: Far From Home)\n");
                    }

                    break;
                }
            }
        }
    }

    if (bookedCount == 0) {
        printf("No seats have been booked for this movie
yet.\n");
    }

    printf("----------------------------------------------------
----------------------------------------------------------------
--\n");

    system("PAUSE");

}
```