Movie Ticket Booking System

Introduction:

Ticket booking has become a day to day activity in most of our life. People mostly book tickets for cinema and travel. This project mainly focuses on movie ticket booking, thus reducing the stress of theatre owners during peak time. It makes the task of maintaining records easy because of its user-friendly nature. The user has to just follow the instructions which are displayed on screen during ticket booking. This application helps the customers to book tickets and helps owners to easily manage their movie halls.

In this project, there are three major functions for all customers and four major functions for the administrators. In addition to that, there are many others functions which are being executed behind the screen to make the major functions to work properly. In this project, there are four structures out of which, two are self-referential structures and nested, and the remaining two contains the basic details.

Data Structures:

MOVIE structure has details of a particular movie like movie code (int), name (char [20]), cost (float) and total booked (int).

TRANSCATION structure is a nested structure consisting of different datatypes. It contains the details of the transaction done by a particular user. It stores details like name (char[30]), mobile (long long int), show (MOVIE), nseats (int), cost (float), food (float).

movie structure is a nested and a self-referential structure used to create a Linked List of different movies.

transaction structure is a nested and a self-referential structure used to create a Linked List of transactions made by different users.

Module description:

Administrator functions:

- addMovie() : Adds a new movie to the Linked list
- viewMovies() : Displays the list of all movies with the ticket cost and number of seats left out
- modifyExistingMovie() : Modifies the details of a particular movie. Can only be accessed by the administrator.
- deleteMovie() : Deletes a movie from the Linked list.
- printTransactions() : this module can be invoked as per the administrator's desire to create a readable and printable allTransactions.txt file from the administrator menu.
- viewTransactions() : Displays the list of all transactions taken place so far

Customer functions:

- bookTickets() : books a ticket for the customer
- findTicket() : searches for a particular transaction based on the customer's mobile number

File handling functions:

- importMovieList(): This module makes use of fread() and file pointers to read the list of movies as individual structures from movieList.dat file. Function call is made at the beginning of execution
- exportMovieList(): This module makes use of fwrite() and file pointers to write the list of movies as individual structures into movieList.dat file. Function call is made at the end of execution
- importTicketList(): This module makes use of fread() and file pointers to read the list of transactions as individual structures from ticketList.dat file. Function call is made at the beginning of execution
- exportTicketList(): This module makes use of fwrite() and file pointers to the write list of transactions as individual structures into ticketList.dat file. Function call is made at the end of execution.

Other functions:

- addToMovieList(): This is called from the importMovieList() module. It stitches together the individual structures read by importMovieList() function into a linked list of type movie*
- addToTicketList(): This is called from the importTicketList() module. It stitches together the individual structures read by importTicketList() function into a linked list. of type transaction*
- printMainMenu() : prints the main menu
- userMenu() : prints the menu showing various operations for the customer
- user() : calls the necessary function based on the customer's choice
- administratorMenu(): prints the menu showing various operations for the administrator
- administrator(): calls the necessary function based on the administrator's choice
- isuniquecode(): checks if the entered movie code is unique or not
- food(): probes the customer whether he/she needs refreshments during the movie or not
- enter(): utility function used to pause the output screen

Additional Features:

- The unique feature of this application is that it can be used by customers and the administrator as well.
- This application while executing prompts for password to keep the database safe and secure. It does not let any intruder to access the unauthorized data.
- The application uses the concept of file handling to save details of transaction in a separate external file (in this, DAT files are used). These files require a separate application to open. Even if these files are opened in Notepad, it is impossible for a normal human to decode it completely because the data are stored in ASCII values.
- There is an option for the administrator to print all the data stored in the DAT files into a normal human understandable text file.

Expandability:

This project can be further extended to train and air ticket booking with some minor modifications done in the existing code with added features. It can also be extended to handle some complex databases for some other ticket booking application. Space and time complexity can be further reduced by using different kind of data structures. Effective sorting and searching code can be added to reduce the time taken for searching a record in a huge database.

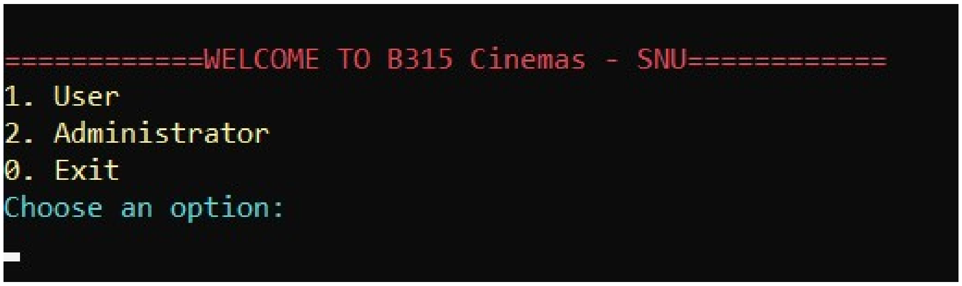
Complexity:

- Most of the functions developed in this project are executed with a time complexity of O(n)
- Few functions even have a time complexity of O(1)
- Dynamic memory allocation is done for all needs
- Space complexity of the code is O(n)

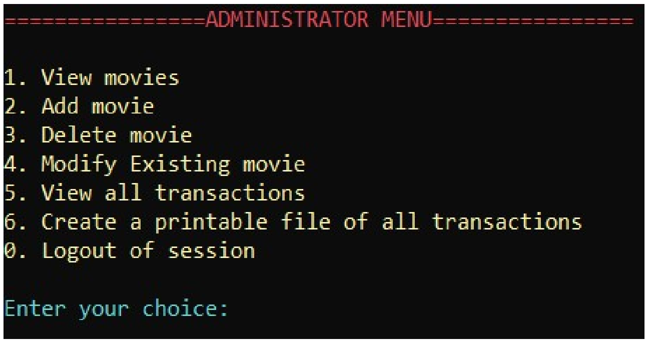
Acknowledgement:

We would like to thank our Professor, Mrs. Pooja Malik for guiding us throughout the project and giving us a chance to work on this interesting project. We finally thank our friends and colleagues who have directly or indirectly helped us bring this project to completion.

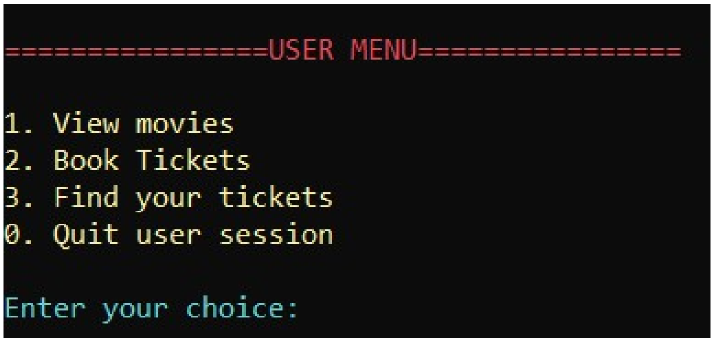
OUTPUT TERMINAL MODEL



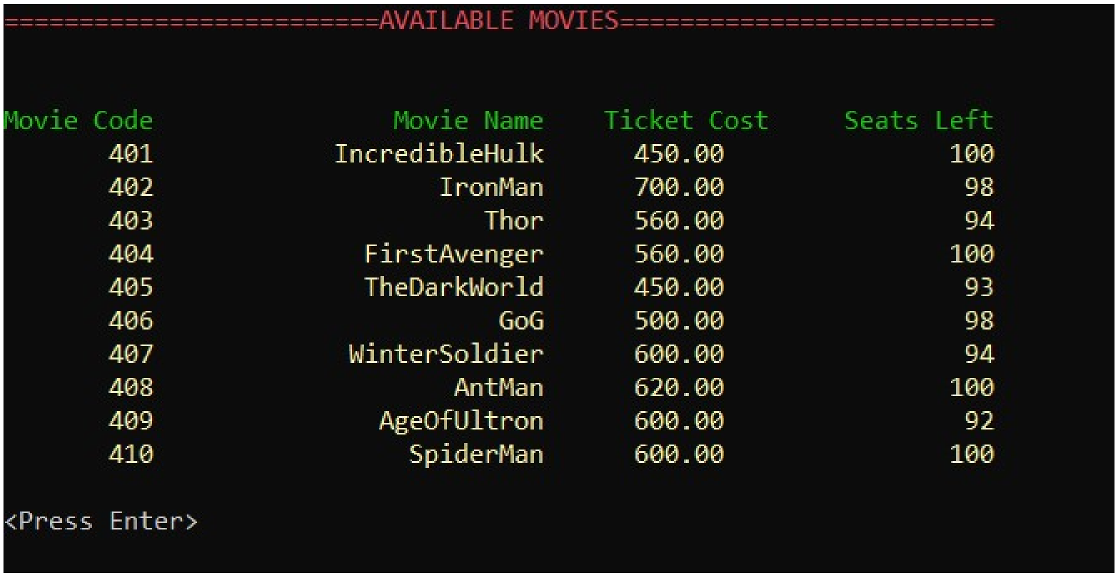
```
============WELCOME TO B315 Cinemas - SNU============
1. User
2. Administrator
0. Exit
Choose an option:
```



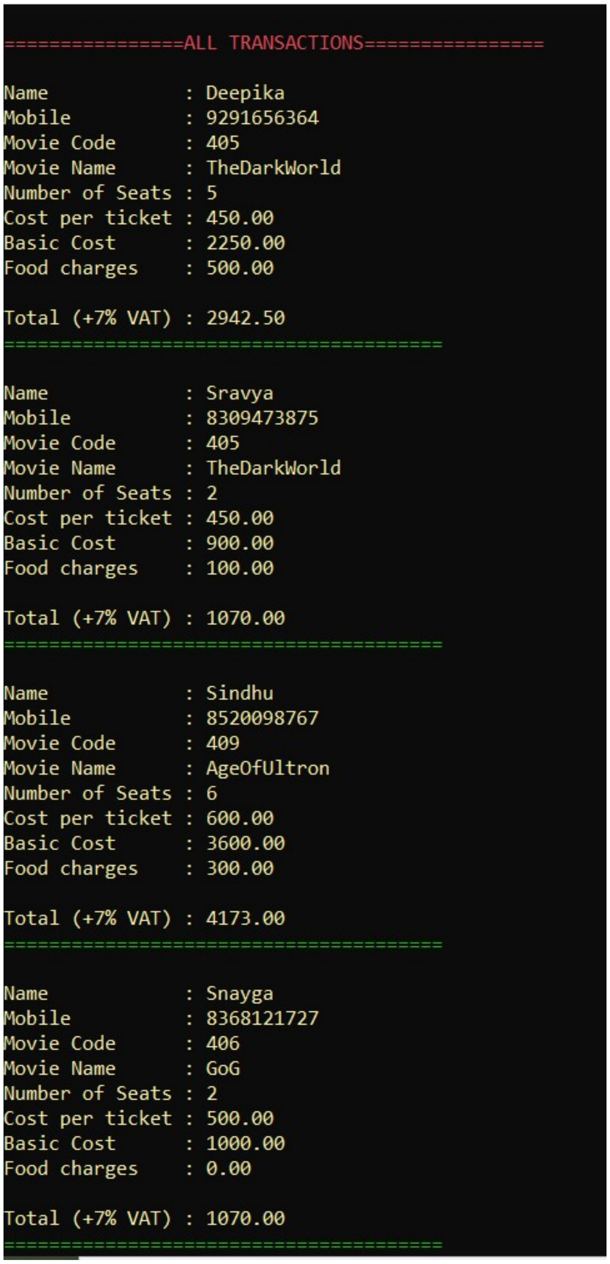
```
================ADMINISTRATOR MENU================

1. View movies
2. Add movie
3. Delete movie
4. Modify Existing movie
5. View all transactions
6. Create a printable file of all transactions
0. Logout of session

Enter your choice:
```



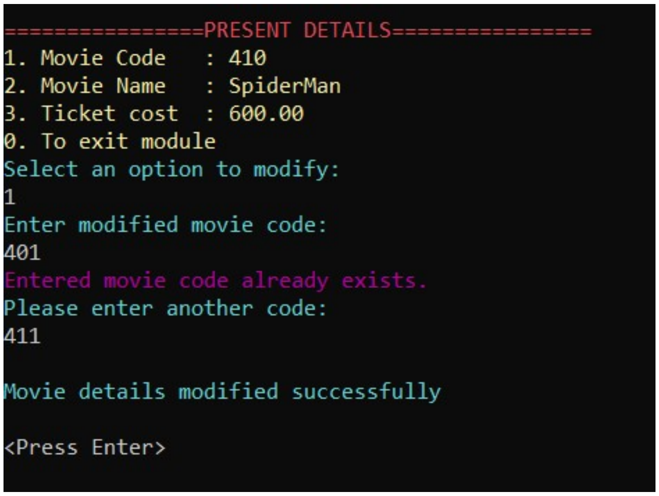
```
================USER MENU================

1. View movies
2. Book Tickets
3. Find your tickets
0. Quit user session

Enter your choice:
```



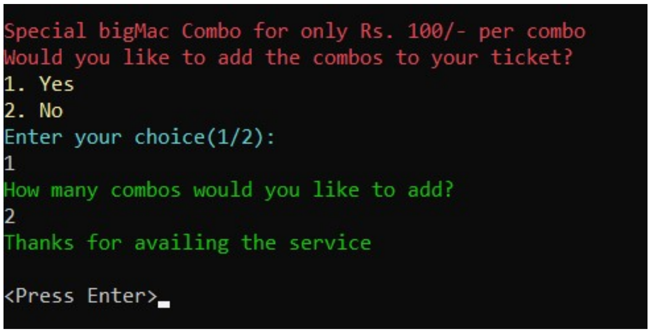
```
========================AVAILABLE MOVIES========================


Movie Code                Movie Name    Ticket Cost      Seats Left
       401             IncredibleHulk     450.00               100
       402                    IronMan     700.00                98
       403                       Thor     560.00                94
       404              FirstAvenger      560.00               100
       405               TheDarkWorld     450.00                93
       406                        GoG     500.00                98
       407              WinterSoldier     600.00                94
       408                    AntMan      620.00               100
       409                AgeOfUltron     600.00                92
       410                  SpiderMan     600.00               100

<Press Enter>
```



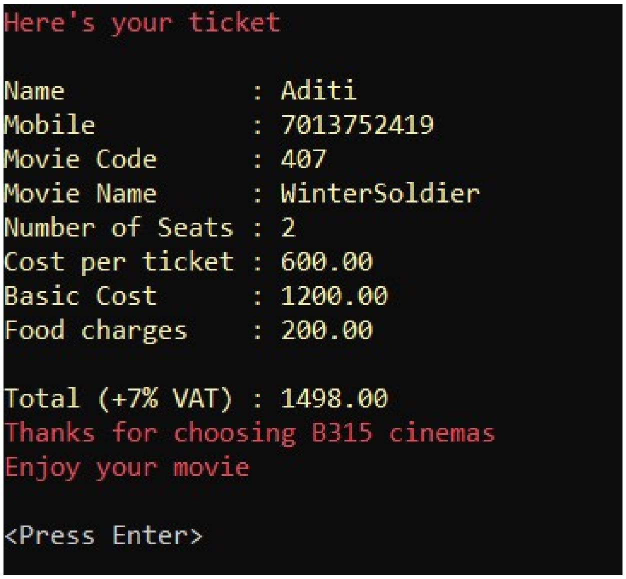
```
================ALL TRANSACTIONS================

Name            : Deepika
Mobile          : 9291656364
Movie Code      : 405
Movie Name      : TheDarkWorld
Number of Seats : 5
Cost per ticket : 450.00
Basic Cost      : 2250.00
Food charges    : 500.00

Total (+7% VAT) : 2942.50
=======================================

Name            : Sravya
Mobile          : 8309473875
Movie Code      : 405
Movie Name      : TheDarkWorld
Number of Seats : 2
Cost per ticket : 450.00
Basic Cost      : 900.00
Food charges    : 100.00

Total (+7% VAT) : 1070.00
=======================================

Name            : Sindhu
Mobile          : 8520098767
Movie Code      : 409
Movie Name      : AgeOfUltron
Number of Seats : 6
Cost per ticket : 600.00
Basic Cost      : 3600.00
Food charges    : 300.00

Total (+7% VAT) : 4173.00
=======================================

Name            : Snayga
Mobile          : 8368121727
Movie Code      : 406
Movie Name      : GoG
Number of Seats : 2
Cost per ticket : 500.00
Basic Cost      : 1000.00
Food charges    : 0.00

Total (+7% VAT) : 1070.00
=======================================
```



```
================PRESENT DETAILS================
1. Movie Code    : 410
2. Movie Name    : SpiderMan
3. Ticket cost   : 600.00
0. To exit module
Select an option to modify:
1
Enter modified movie code:
401
Entered movie code already exists.
Please enter another code:
411

Movie details modified successfully

<Press Enter>
```



```
Special bigMac Combo for only Rs. 100/- per combo
Would you like to add the combos to your ticket?
1. Yes
2. No
Enter your choice(1/2):
1
How many combos would you like to add?
2
Thanks for availing the service

<Press Enter>
```



```
Here's your ticket

Name            : Aditi
Mobile          : 7013752419
Movie Code      : 407
Movie Name      : WinterSoldier
Number of Seats : 2
Cost per ticket : 600.00
Basic Cost      : 1200.00
Food charges    : 200.00

Total (+7% VAT) : 1498.00
Thanks for choosing B315 cinemas
Enjoy your movie

<Press Enter>
```