

Department of Computing and Information System

Course Title: Structured Programming with Lab

**Course Code:**  CIS 122 & 122L

**Assignment:** Spring 2023

**Assignment Title: Start Journey Theater**

# Scenario

**Roushin** and **Nella** were the best of friends. Nella had just completed a course in **structured programming course** form Daffodil International University and she was now an expert in C programming. One day, Roushin told her about his father’s movie theater, **“Start Journey Theater”**, which still maintained a **manual process** to track tickets and other details. They wanted to automate the system, and Roushin recommended Nella’s name to his father.

Nella interviewed for the job and was hired by “Start Journey Theater” to develop a movie reservation system. The cinema had limited seats, and customers could reserve seats in advance for upcoming movies. Nella’s task was to develop a system that allowed customers to reserve seats and also allowed the cinema staff to manage the reservations.

The system should have the following functionalities:

* **Add new movies:** The system should allow the staff to add new movies to the system along with their name, description, start time, and duration.
* **Modify existing movies:** The system should allow the staff to modify the details of existing movies in the system.
* **Delete movies:** The system should allow the staff to delete movies from the system.
* **Reserve seats:** The system should allow customers to reserve seats for a specific movie. Each seat should have a unique identifier (e.g., A1, B2, C3), and customers should be able to select the seat they want to reserve.
* **Cancel reservations:** The system should allow customers to cancel their reservations.
* **Display all movies:** The system should display a list of all the movies in the system along with their details.
* **Display all reservations:** The system should display a list of all the reservations for a specific movie.
* **Revenue report.**

To implement this system, you need to use structures to represent the movies and reservations. Each movie should have a name, description, start time, duration, and a list of reserved seats. Each reservation should have the customer’s name, email address, and the seat they have reserved. You should also use file handling to store the movie and reservation data in separate files. The system should read the data from the files when it starts up, and write the data back to the files when the staff adds, modifies, or deletes movies, and when customers reserve or cancel seats.

You should also use functions to implement the different functionalities of the system. For example, you can create a function to add a new movie to the system, a function to modify an existing movie, a function to delete a movie, a function to reserve a seat, and so on.

Finally, you should create a user interface to make the system easy to use. You can use the command-line interface to get user input and display the results.

There will be two types of users’ admin and viewers.

Admin Panel:

* Add movie information
* Update movie information
* Delete information
* View all information
* Search all information
* View sales report

User Panel

* View movie information
* View all reservation
* Reserve a sit
* Cancel reservation
* Search for movies

Nella was excited about this project, and she got to work right away. She spent hours analyzing the requirements of the cinema and the customers, and after careful consideration, she designed an efficient system that would make the reservation process much simpler.

With Nella’s system, customers could easily select the movie they wanted to watch and reserve their seats from the comfort of their homes. They could also view the available seats and choose their preferred seats. The cinema staff could easily manage the reservations, and they could even view the details of all the reservations made so far.

Nella’s system was a huge success, and the “Start Journey Theater” saw an increase in their business. The customers were happy as they could now easily reserve seats for their favorite movies, and the cinema staff was happy as they could easily manage the reservations without any hassle. Roushin was also proud of his friend, and he knew that she had done an excellent job in developing the movie reservation system for his father's theater. **The friendship still remains same as before. Friendship is a precious thing; cheap people can't afford it.**

# **Theory Part** **Marks: 35**

## **Task – 1**

1. Draw a flowchart diagram and pseudo codes for admin panel. [8]
2. Draw a flowchart diagram and pseudo codes for user/viewer/customer panel. [6]

## **Task – 2**

1. What data structure you will use in the program to handle movie and reservation? Explain why to use that structure? [5]
2. Prepare a project plan that contains the requirements list for this project and your plan on how you will satisfy the requirements? [5]
3. Write Pseudocode that will be used to calculate the revenue generated from ticket sell.[5]

## **Task – 3**

1. Explain what you have learnt? And how could your system be improved or further developed? [6]

# **Lab Part** **Marks: 35**

You are expected to use a combination C programming language to create this application.

## **Task – 1**

Develop the administration system which require:

1. Password to access. [2]
2. Create movie information [3]
3. Store the information into a file [3]
4. Movie information [3]
5. Delete a movie [2]
6. Revenue report [2]

## **Task – 2**

Developing the viewers panel containing the following:

1. Search Movie [2]
2. Reserve a sit [3]
3. Cancel reservation [3]
4. Display all reservation [2]

# Submission Requirements

1. **Deadline:** 8th May 2023
2. You have to submit a Word document for theory part. And your document structure should be like:
   1. Introduction
   2. Your tasks
   3. Conclusion
   4. Please remember to cite if you collect information from any sources & include a reference.
3. You need to submit the c program file, object file and the executable file for the lab part.
4. Make a zip file including your theory part and lab part and upload it.
5. Your file must be named like this-> **ID\_Name\_SP\_Spring\_2023.** For example, **xxxxxxx\_Neela\_SP\_ Summer\_2021**
6. **Deadline is fixed no excuse will be considered if you missed the deadline.**
7. **Any kind of plagiarism will be severely penalized.**