****

**Mini Project**

**Group Number –**

TG/2021/1072:

TG/2021/1037:

TG/2021/1022:

TG/2021/:

TG/2020/:

ICT3222 – Advanced Database Management System Practicum

Level 3- Semester 2 | 2025

Lecturer: Mr. A.W.A.T. Dilhan.

Department of Information & Communication Technology

Faculty of Technology

University of Ruhuna, Sri Lanka

30th October 2025

Table of Contents

[1. Introduction 2](#_Toc212402388)

[1. Backend Solution 3](#_Toc212402389)

[2. ER Diagram 3](#_Toc212402390)

[3. Relational Mapping 3](#_Toc212402391)

[4. Table Structure 3](#_Toc212402392)

[5. Architecture of the backend 3](#_Toc212402393)

[6. Tools and Technologies 3](#_Toc212402394)

[7. Hosting Backend and reasons for the selection 3](#_Toc212402395)

[8. Security measures for protect the DB 3](#_Toc212402396)

[9. DB Accounts/Users and the reasons for creating such Account/Users 3](#_Toc212402397)

[10. Code of the DB connection 3](#_Toc212402398)

[11. Code snippets 3](#_Toc212402399)

[12. Problems faced during the development Solutions 3](#_Toc212402400)

[13. Preparing backend systems for cloud deployment 3](#_Toc212402401)

[14. Possibilities that have replaced relational DB backend with non – relational DB technology 3](#_Toc212402402)

**Table of Figures**

# Introduction

Our project is a Film Booking System that seeks to automate and centralize movie operations by combining scheduling of movies, user booking, and payment handling within one platform. The system will provide a seamless experience for administrators and customers alike, and make the management of movies efficient and booking of tickets easy.

The system has several required modules that handle different functionalities:

* Movie Management:

This module provides for addition, updating, and maintenance of movie details such as title, genre, length, and description. It also allows scheduling of movie shows and maintenance of slots available for each auditorium.

* Booking Management:

This module allows browsing through available movies, selecting showtimes, and reserving seats. It allows real-time monitoring of seat availability and maintains a unique record of bookings for each transaction.

* Hall and Location Management:

Administrators are able to manage cinema halls and their capacities, along with location details. This assists users in selecting the most accessible cinema location during ticket booking.

* Payment and Loyalty Management:

The module facilitates secure online payment and maintains records of reward points obtained by regular users. It maintains a record of all payments, refunds, and reward transactions for effective customer relationship management.

* User and Role Management

There are admin and user roles in the system, both of which are secured by registration and login. Admins can use all parts of the system, while users can browse, book, and manage bookings.

With the support of strong performance database features such as indexing, stored procedures, triggers, views, and transactions, the system operates with optimal performance, data consistency, and query optimization. Developed with SvelteKit on the front end and Spring Boot on the back end, the project also utilizes Hibernate ORM for easy integration with the relational database.

# Backend Solution

# ER Diagram

# Relational Mapping

# Table Structure

# Architecture of the backend

# Tools and Technologies

# Hosting Backend and reasons for the selection

# Security measures for protect the DB

# DB Accounts/Users and the reasons for creating such Account/Users

# Code of the DB connection

# Code snippets

# Problems faced during the development Solutions

# Preparing backend systems for cloud deployment

# Possibilities that have replaced relational DB backend with non – relational DB technology