

ChinePass

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MINI LAB PROJECT REPORT

This Report Presented in Partial Fulfillment of the course **CSE312**
Database Management System Lab in the Computer Science
and Engineering Department



DAFFODIL INTERNATIONAL UNIVERSITY
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DECLARATION

We hereby declare that this lab project has been done by us under the supervision of **Shadman Rabby, Lecturer**, Department of Computer Science and Engineering, Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere as lab projects.

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COURSE & PROGRAM OUTCOME

The following course have course outcomes as following:.

Table 1: Course Outcome Statements

CO's	Statements
CO1	Define and Relate classes, objects, members of the class, and relationships among them needed for solving specific problems
CO2	Formulate knowledge of object-oriented programming and Java in problem solving
CO3	Analyze Unified Modeling Language (UML) models to Present a specific problem
CO4	Develop solutions for real-world complex problems applying OOP concepts while evaluating their effectiveness based on industry standards.

Table 2: Mapping of CO, PO, Blooms, KP and CEP

CO	PO	Blooms	KP	CEP
CO1	PO1	C1, C2	KP3	EP1,EP3
CO2	PO2	C2	KP3	EP1,EP3
CO3	PO3	C4, A1	KP3	EP1,EP2
CO4	PO3	C3, C6, A3, P3	KP4	EP1,EP3

The mapping justification of this table is provided in section **4.3.1**, **4.3.2** and **4.3.3**.

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Chapter 1

Introduction

This chapter introduces the project, its background, motivation, objectives, feasibility, gaps addressed, and expected outcomes.

1.1 Introduction

Efficient ticket booking systems require streamlined database designs for managing bookings, user profiles, and movie details. The ChinePass database addresses challenges in handling these tasks effectively, ensuring consistent, scalable data management.

1.2 Motivation

The project was motivated by the increasing demand for efficient online ticket booking systems. Creating a dynamic and secure database not only benefits users but also enhances administrative workflows.

1.3 Objectives

- Develop a relational database with tables for users, movies, halls, and ticket bookings.
- Implement CRUD (Create, Read, Update, Delete) operations for seamless data management.
- Use SQL joins to integrate and display data from multiple tables effectively.

1.4 Feasibility Study

The system leverages MySQL, a widely-used relational database management system, ensuring compatibility and reliability. Similar systems, such as online movie ticket platforms, validate its feasibility. [1].

1.5 Gap Analysis

Existing ticket booking systems often lack real-time integration between bookings and hall details. The use of SQL joins in ChinePass bridges this gap, providing administrators and users with comprehensive data views.

1.6 Project Outcome

The project resulted in a robust, relational database for a fully functional ticket booking website, ensuring efficient management of user data, movie details, hall lists, and ticket bookings.

Chapter 2

Proposed Methodology/Architecture

This chapter explains the methodology and architecture of the database system for ChinePass.

2.1 Requirement Analysis & Design Specification

2.1.1 Overview

The database was designed to support core functionalities such as user registration, profile updates, ticket bookings, and hall management while allowing complex queries for administrative insights.

2.1.2 Proposed Methodology/ System Design

The ChinePass database schema includes the following tables:

- **signup:** Stores user registration information (e.g., ID, name, email, password).
- **userprofile:** Contains additional user details such as preferences and contact information.
- **movies:** Tracks movie details (e.g., movie ID, title, genre, duration).
- **halllist:** Stores details of available halls (e.g., hall ID, location, capacity).
- **bookticket:** Records ticket bookings (e.g., booking ID, user ID, hall ID, movie ID, date).

2.2 Overall Project Plan

The project follows these phases:

- **Requirement Gathering:** Identify database and website functionalities.
- **Database Design:** Develop normalized schemas for the database tables.
- **Website Integration:** Implement dynamic database interactions on the website.
- **Testing:** Test for performance and security in SQL queries and operations.
- **Deployment:** Deploy the website with database connectivity on a live server.

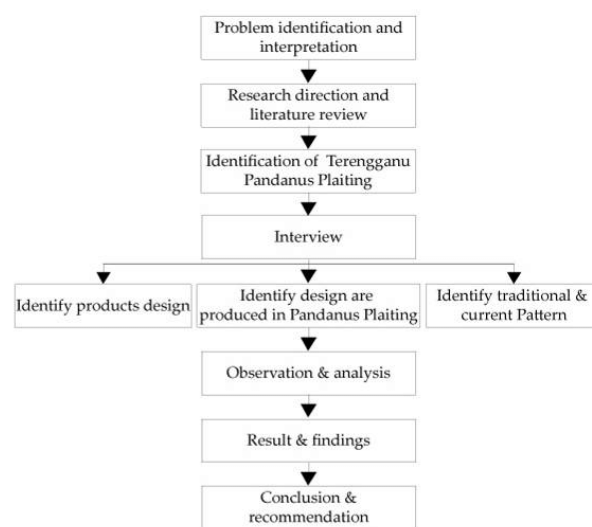


Figure 2.1: This is a sample diagram

Chapter 3

Implementation and Results

This chapter details the implementation of the database, performance analysis, and discussion of results.

3.1 Implementation

3.1.1 Database Tables:

- **signup:** Stores user sign-up details.
- **userprofile:** Stores additional user information for personalized services.
- **movies:** Contains information about movies available for booking.
- **halllist:** Includes details of cinema halls such as location, capacity, and availability.
- **bookticket:** Stores booking records, linking users, movies, and halls.

3.1.2 Operations Implemented:

Admin Panel:

- **Aggregate Functions:** Count total users, bookings, and hall availability.
- **Insert, Update, Delete:** Manage movies, hall information, and bookings.

Sign-Up Page:

- Inserts user data into the signup table.

Profile Page:

- **Log Analysis:** Inserts and updates user profile data in the userprofile table.

Ticket Booking Page:

- **Insert:** Creates new ticket bookings.
- **Delete:** Cancels bookings.
- **View:** Displays booking details using SQL joins between bookticket and halllist.

3.2 Performance Analysis

The use of normalized tables and SQL joins resulted in efficient data retrieval. Aggregate functions were executed with low latency, even for large datasets.

3.3 Discussion

3.3.1 Achievements:

- Real-time integration of booking and hall data using SQL joins.
- Streamlined data management across all functionalities.
- Scalable design for future enhancements.

3.3.2 Limitations:

- No advanced analytics for admin insights.
- Limited user feedback features on the interface.

Chapter 4

Engineering Standards and Mapping

This chapter evaluates the project's alignment with engineering standards, its societal and environmental impacts, ethical aspects, and sustainability. It also discusses project management, budget analysis, and how the tool addresses complex engineering problems through a structured framework.

4.1 Impact on Society, Environment and Sustainability

4.1.1 Impact on Life

The project enhances user convenience by simplifying the ticket booking process.

4.1.2 Impact on Society & Environment

Digitization of ticket bookings reduces paper waste and streamlines hall management.

4.1.3 Ethical Aspects

The project complies with ethical data management practices, ensuring user privacy.

4.1.4 Sustainability Plan

The database is designed to handle increasing user traffic and bookings without performance degradation.

4.2 Project Management and Team Work

4.2.1 Budget Analysis

- **Base Budget:** Development using open-source tools (MySQL, PHP, HTML). Approximate cost: 0.
- **Alternate Budget:** Enhancements like analytics dashboards and premium hosting. Approximate cost: \$500–\$1000.

4.2.2 Revenue Model

The system can generate revenue through ticket service fees, user subscriptions, or targeted ads.

4.2.3 Roles and Responsibilities

For the creation of the ChinePass database, the following roles and responsibilities were assigned among the five team members:

- **Database Architect:** Designed the overall database schema, including table structures, relationships, and normalization.
- **SQL Query Developer:** Wrote and tested SQL queries, including CRUD operations and advanced joins for the tables.
- **Data Analyst:** Ensured data consistency, optimized table design for scalability, and validated aggregate functions.
- **Integration Specialist:** Connected the database to the website back-end, ensuring seamless data flow between the two systems.
- **Tester:** Conducted rigorous testing to identify and resolve issues with table joins, data integrity, and query performance.

4.2.4 Project Timeline:

Phase.....	Description.....	Duration
Week 1.....	Requirement Gathering and Tool Setup	1 Week
Week 2.....	Individual Module Development.....	1 Week
Week 3.....	Integration and Testing Development.....	1 Week
Week 4.....	Documentation and Presentation Development.....	1 Week

4.3 Complex Engineering Problem

4.3.1 Mapping of Program Outcome

The problem and its solution align with key Program Outcomes (POs), as shown in Table 4.1.

Table 4.1: Justification of Program Outcomes

PO's	Justification
PO1	Designed and normalized database schema for real-world use.
PO2	Applied SQL joins to retrieve complex, multi-table data efficiently.
PO3	Demonstrated innovative query handling for integrated views of bookings.

4.3.2 Complex Problem Solving

The project addresses complex problem-solving categories as mapped in Table 4.2.

Table 4.2: Mapping with complex problem solving.

EP1 Department knowledge was applied to normalize database tables effectively.	EP2 Addressed conflicting requirements for managing user, admin, and booking data.	EP3 Conducted in-depth analysis to define relationships between database tables.	EP4 Resolved issues related to multi-table queries with efficient SQL joins.	EP5 Ensured adherence to database standards and best practices.	EP6 Actively involved stakeholders in refining the system requirements.	EP7 Demonstrated interdependence between web-site and database for real-time updates.
✓	✓	✓	✓	✓	✓	✓

4.3.3 Engineering Activities

The engineering activities are mapped to key aspects of the project as shown in Table 4.3.

Table 4.3: Mapping with complex engineering activities.

EA1 Utilized a wide range of open-source tools and database resources.	EA2 Required interactions between developers, database architects, and stakeholders.	EA3 Innovatively implemented SQL joins for integrated booking and hall data.	EA4 Assessed potential societal and environmental impacts of the system.	EA5 Enhanced familiarity with user needs and admin functionalities.
✓	✓	✓	✓	✓

Chapter 5

Conclusion

This chapter provides a summary of the project, highlights its limitations, and outlines potential directions for future enhancements.

5.1 Summary

The ChinePass database successfully integrates user management, profile updates, and ticket booking functionalities. SQL joins between the bookticket and halllist tables enhance data retrieval efficiency, making the system scalable and user-friendly.

5.2 Limitation

While the project achieved its primary objectives, a few limitations remain:

- Lack of advanced admin reporting tools.
- Basic UI design for user interaction.

5.3 Future Work

The project has significant potential for expansion, and future developments may include:

- **Advanced Admin Tools:** Add reporting dashboards with detailed analytics.
- **User Feedback System:** Adding automated notifications via email or SMS for critical events or thresholds.
- **Mobile App Integration:** Extend functionality to mobile platforms.
- **Payment Gateway Integration:** Include secure payment options for bookings.

References

- [1] Jon Kleinberg and Eva Tardos. *Algorithm design*. Pearson Education India, 2006.