UNIVERSITI TEKNOLOGI MALAYSIA

FACULTY OF COMPUTING, UTMJB

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PROJECT DATABASE

Phase 1 (P1) – Project Proposal & Database Requirement (5%)

SECD 2523 : DATABASE

SECTION 03

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1.0 Introduction

In the age of digitalization, the entertainment industry is undergoing a transformative shift towards seamless and efficient experiences for users. Recognizing the need for an advanced and user-friendly approach to cinema ticket booking, we propose the development of ticket booking process, enhancing user satisfaction, and provide cinema administrators with powerful tools for efficient management.

2.0 Background Study

The entertainment industry has evolved significantly over the years, with cinemas being a major source of recreation for people worldwide. Traditional ticket booking systems are often cumbersome, leading to inconvenience for users and operational challenges for cinema owners. The rise of online ticketing platforms has alleviated some of these issues, but there is still room for improvement in terms of user experience, efficiency, and feature-rich functionality. Our background study reveals a growing demand for a comprehensive Cinema Booking System that caters to the modern needs of both cinemagoers and cinema operators.

3.0 Problem Statement

Existing cinema booking systems face several challenges such as long waiting times, limited payment options, and outdated user interfaces. Additionally, the manual management of movie schedules and seat allocation, and customer data can result in errors and inefficiencies. The need for a solution that addresses these challenges is evident, and our proposed system aims to provide a robust and efficient remedy.

4.0 Proposed Solutions (include feasibility study)

4.1 System Overview

Our proposed Cinema Booking System will be an online platform that enables users to browse movie listings, select showtimes, choose seating preferences, and securely complete their bookings. Simultaneously, cinema administrators will have access to a comprehensive dashboard for managing movie schedules, seat allocations, and customer data.

4.2 Features:

- User-friendly Interface: Intuitive design for easy navigation.
- Online Booking: Seamless and secure online ticket booking for users.
- Seat Selection: Interactive seat maps for users to choose their preferred seats.
- Real-time Updates: Instant updates on movie schedules and seat availability.
- Payment Integration: Multiple payment options for user convenience.
- Admin Dashboard: Centralized management of movie schedules, seat allocations, and customer data.

4.3 Feasibility Study:

We will conduct a thorough feasibility study to assess the technical, economic, and operational viability of the proposed system. This study will include cost estimates, technology requirements, and an analysis of potential benefits such as increased revenue, improved customer satisfaction, and streamlined operations.

5.0 Objectives

The project's goal is to develop a streamlined, user-friendly platform that improves the entire booking process for movie theaters. This entails putting in place a real-time database system to provide precise updates on seat availability, making sure that customer data is protected by strong security measures, and integrating with well-known payment gateways to enable safe transactions. High user satisfaction is intended to be attained through an easy-to-use interface, and reporting and analytics are intended to offer insightful information. The system must also be scalable to handle an increase in the number of users, and staff training initiatives will be carried out to guarantee effective use. Feedback mechanisms will be used to drive continuous improvement, and regulatory compliance with data protection laws will be upheld.

6.0 Scope

This project aims to enhance customer experience by minimizing waiting times and expanding payment options. This will be achieved through the development of a more efficient ticket booking process and the integration of diverse payment methods. Additionally, the project includes the modernization of user interfaces, the implementation of automated scheduling and seat allocation, addressing the challenges posed by outdated systems, reducing errors linked to

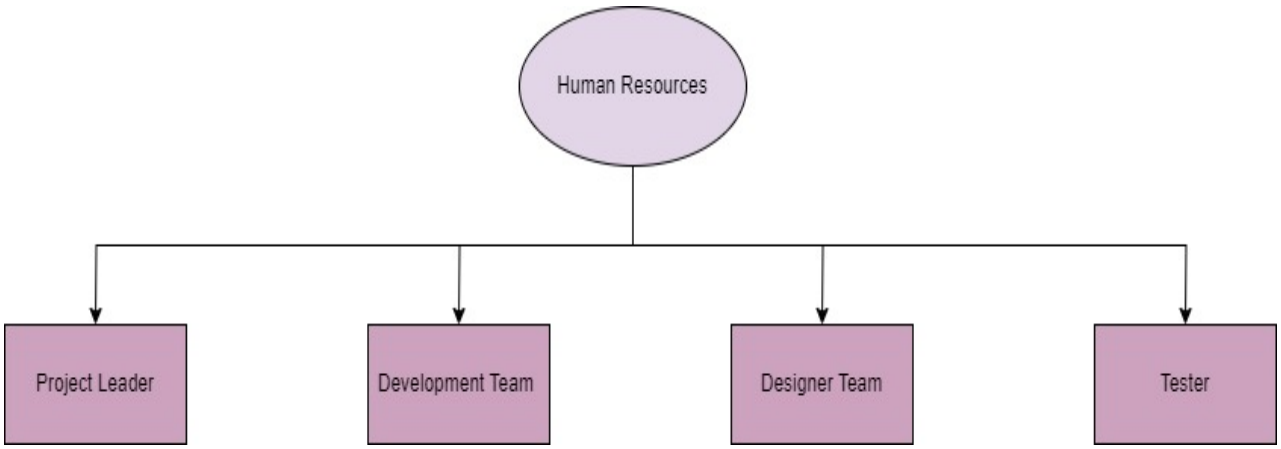
manual processes, and optimizing seat utilization. Finally, system efficiency will be improved by establishing a robust database system to automate the management of customer data, thus minimizing errors and inefficiencies associated with manual data handling.

7.0 Project Planning

Project planning is the process of establishing the goals, parameters, and strategy of a project as well as the assignments, materials, schedules, and financial constraints necessary to meet those goals. It's an important stage of project management that lays the groundwork for a project's effective completion. Project planning is essential because it facilitates effective resource allocation, understanding of the task scope by teams and stakeholders, and the anticipation and resolution of possible obstacles. The materials planned to see the process involved in project implementation are Human Resources, Work Breakdown Structures (WBS), and a Gantt chart that is included.

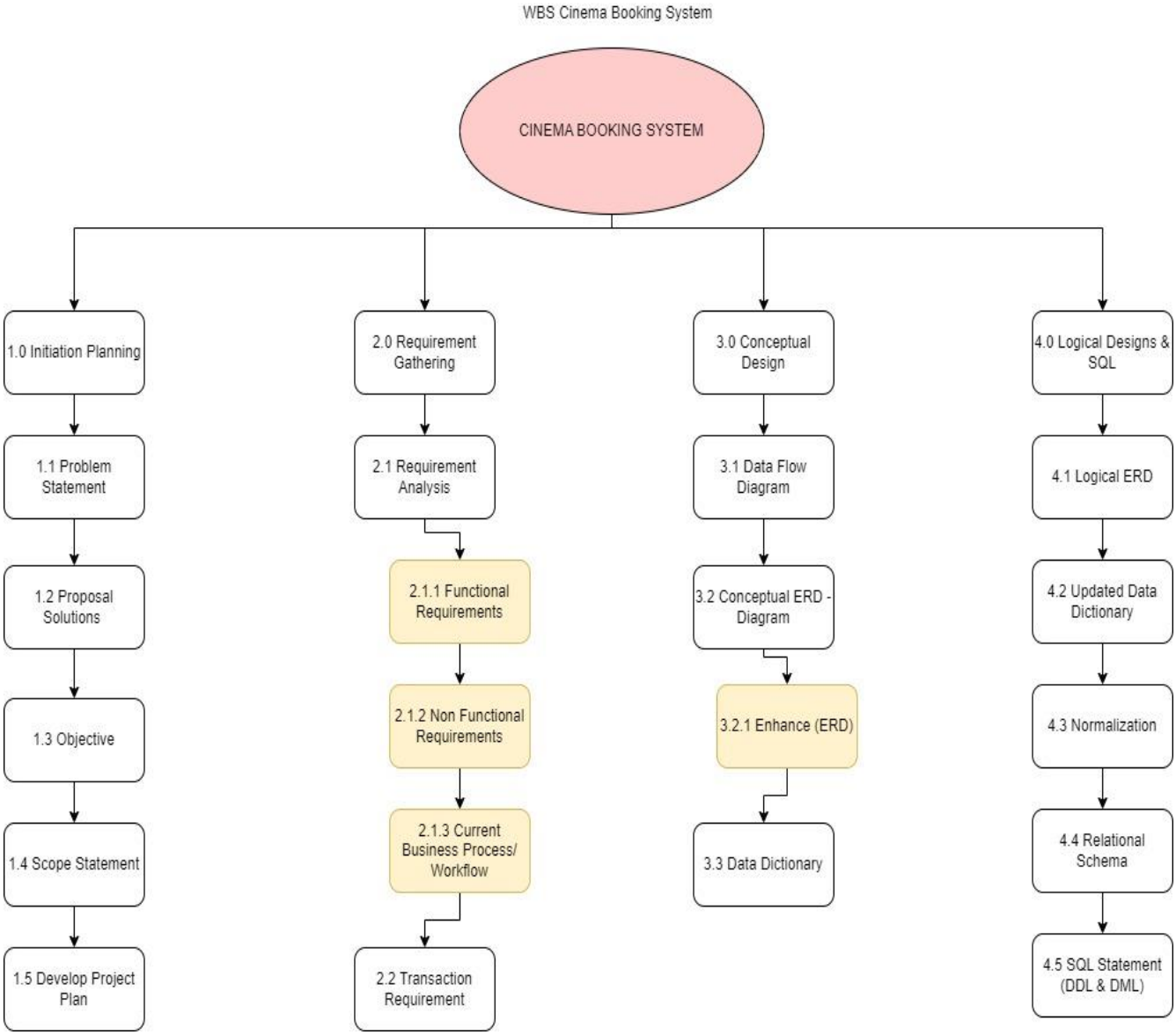
7.1 Human Resource

Based on the cinema booking system project, human resources project planning includes identifying, recruiting, and managing the necessary group members to develop, implement, and maintain the system. Here's the human resources project planning for a cinema booking system:



7.2 Work Breakdown Structure (WBS)

A project is broken down into smaller, easier-to-manage components using a hierarchical process called a Work Breakdown Structure (WBS). It is an ordered and visually appealing depiction of the jobs, activities, and deliverables needed to finish a project. Here's the Work Breakdown Structure (WBS) for a cinema booking system project:



7.3 Gantt Chart

An effective visual tool for project leaders and team members to comprehend the project's status, schedule, and forthcoming work is a Gantt chart. In the context of a cinema booking system project, a Gantt chart can be used to illustrate the project tasks and our dependencies, helping to minimize bottlenecks and assure timely completion of the project. Project leaders will effectively monitor the cinema booking system project by utilizing a Gantt chart, which helps us to make sure that all necessary actions are completed in order to get the desired result.

				Oct-23				Nov-23				Dec-23				Jan-24			
TASK NAME	DURATION	START	FINISH	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
1.0 Initation & Planning	2 WEEK	22/10/2023	04/11/2023																
1.2 Prolem Statement	3 DAYS	22/10/2023	24/10/2023																
1.2 Proposal Solutions	3 DAYS	25/10/2023	27/10/2023																
1.3 Objective	1 DAYS	28/10/2023	28/10/2023																
1.4 Scope Statement	3 DAYS	29/10/2023	31/10/2023																
1.5 Develop Project Plan	4 DAYS	01/11/2023	04/11/2023																
2.0 Requirement Gathering	12 DAYS	05/11/2023	16/11/2023																
2.1.1 Functional Requirements	3 DAYS	05/11/2023	07/11/2023																
2.1.2 Non-Functional Requirements	3 DAYS	08/11/2023	10/11/2023																
2.1.3 Current Business Process/ Workflow	3 DAYS	11/11/2023	13/11/2023																
2.2 Transaction Requirement	3 DAYS	14/11/2023	16/11/2023																
3.0 Conceptual Design	4 WEEK	18/11/2023	16/12/2023																
3.1 Data Flow Diagram (DFD)	1 WEEK	18/11/2023	24/11/2023																
3.2 Conceptual ERD	1 WEEK	25/11/2023	01/12/2023																
3.2.1 Enhance (ERD)	1 WEEK	02/12/2023	08/12/2023																
3.3 Data Dictionary	1 WEEK	09/12/2023	15/12/2023																
4.0 Logical Design & SQL	4 WEEK	16/12/2023	13/01/2024																
4.1 Logical ERD	4 DAYS	16/12/2023	19/12/2023																
4.2 Updated Data Dictionary	3 DAYS	20/12/2023	22/12/2023																
4.3 Normalization	1 WEEK	23/12/2023	29/12/2023																
4.4 Relational Schema	1 WEEK	30/12/2023	06/01/2024																
4.5 SQL Statement (DDL & DML)	1 WEEK	07/01/2024	13/01/2024																
PROJECT DEMONSTRATION	1 WEEK	14/01/2024	20/01/2024																

8.0 Requirement Analysis (based on AS-IS analysis)

As-is process analysis is a process management strategy that identifies and evaluates our Online Cinema Booking System. In the case of an online cinema booking system, the AS-IS analysis may reveal the functional requirements and non-functional requirements for the system. Based on this analysis, the following requirements can be identified:

Functional Requirements

1) **User Registration and Login** - Allow users to create personal accounts to access personalized features and preferences on the system.
2) **Movie Details** - Enable users to browse and select movie showtimes that suit their schedules.
3) **User Notifications** – User get a confirmation email for successful bookings, automatically remind for upcoming showtime.
4) **Payment Integration** - Integrate secure payment gateways to enable users to complete transactions smoothly.
5) **Reviews and Ratings** – Users can rate and provide reviews for movies they have watched, and the system can display the average ratings for each movie based on user reviews.

Non-Functional Requirements

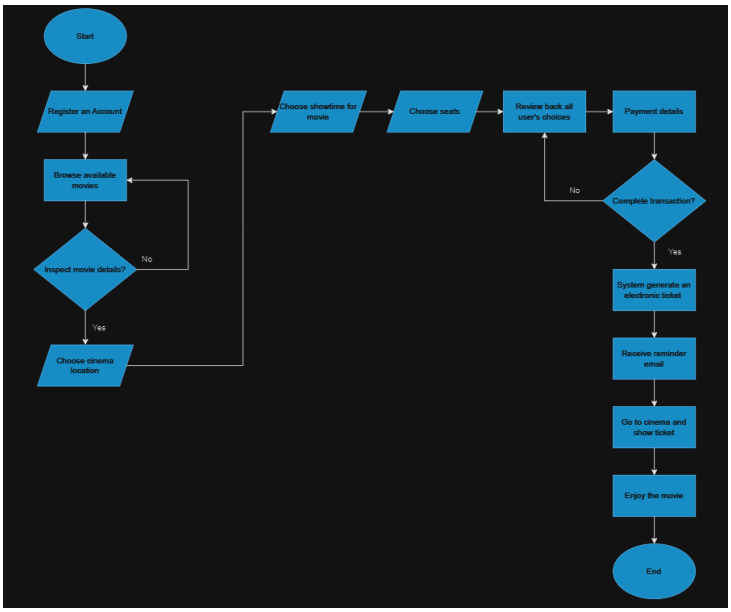
1) **Performance Testing -** Conduct load testing to ensure the system can handle peak loads without significant performance degradation.
2) **Disaster Recovery -** Regularly back up the system data and have procedures in place for quick data recovery in case of system failures or disasters.
3) **Compatibility** - Ensure the system works seamlessly across major web browsers and the system also should be compatible with various devices, including desktops, laptops, tablets, and smartphones.
4) **Usability -** The user interface should be responsive, providing a seamless experience across various devices and screen sizes.
5) **Performance -** The system should respond to user actions within a specified time frame and the system should be able to handle a certain number of transactions per minute or hour.

8.1 Current business process

Scenarios

The process flow of an Online Cinema Booking System involves several steps, from browsing movie listings to completing the ticket purchase. First, Users may need to register for an account or log in to the system. This step ensures that the booking system can identify and associate the user with their bookings. Then, users can browse the list of available movies, typically with details such as title, genre, rating, and release date. They can click on a specific movie to view additional details, including a synopsis, cast information, and trailers. Next, users will choose a cinema location and select a preferred showtime for the chosen movie. They will also be presented with an interactive seat map for the chosen cinema hall. They select their preferred seats for the selected showtime. Moreover, users can review the selected movie, showtime, and seats. They may have the option to add concessions or other extras. After that, users will get the payment details and complete the transaction. The system may integrate with a payment gateway for secure processing. After successful payment, the system generates an electronic ticket with details such as the movie title, showtime, seat numbers, and a barcode or QR code for validation. The user registered email will be notified of all the details of their booking, including a copy of the electronic ticket. Then, users may receive a reminder email or notification closer to the showtime. Lastly, users arrive at the cinema, present their electronic ticket (either printed or on a mobile device), and proceed to their selected seats and they can enjoy the movie at the chosen cinema.

Workflow



9.0 Transaction requirement (data entry, data update/delete, data queries)

Transaction requirements for an Online Cinema Booking System encompass the processes of data entry, data update/delete, and data queries. These transactions are crucial for maintaining an accurate and up-to-date database that supports the functionality of the system. Here are transaction requirements related to these processes:

Data Entry

- **Movie Listing:**
    - **Data Entry Requirement:** Allow administrators to add new movies to the system, including details such as title, genre, synopsis, rating, and release date.
- **Cinema Information:**
    - **Data Entry Requirement:** Provide a mechanism for administrators to add and update information about cinemas, including location, amenities, and contact details.
- **Showtime Configuration:**
    - **Data Entry Requirement:** Allow administrators to configure showtimes for each movie at different cinemas, specifying the date, time, and cinema hall.

Data Update/Delete

- **Update Movie Details:**
    - **Data Update Requirement:** Enable administrators to update movie details, including title, genre, synopsis, rating, and release date.
- **Edit Cinema Information:**
    - **Data Update Requirement:** Allow administrators to edit information about cinemas, such as location, amenities, and contact details.
- **Modify Showtime Details:**
    - **Data Update Requirement:** Provide the capability to modify showtime details, including date, time, and cinema hall.
- **Cancel Showtimes:**
    - **Data Delete Requirement:** Allow administrators to cancel or remove showtimes if necessary.
- **User Profile Updates:**

- **Data Update Requirement:** Enable users to update their profile information, including personal details and preferences.

Data Queries

- **Movie Search:**
  - **Data Query Requirement:** Allow users to search for movies based on criteria such as title, genre, or release date.
- **Showtime Availability:**
  - **Data Query Requirement:** Provide users with real-time information on showtime availability for a specific movie at a chosen cinema.
- **Seat Availability Check:**
  - **Data Query Requirement:** Ensure users can check the availability of seats for a specific showtime in real-time.
- **Booking History:**
  - **Data Query Requirement:** Allow users to view their booking history, including details of past and upcoming bookings.
- **Cinema Performance:**
  - **Data Query Requirement:** Allow administrators to assess the performance of each cinema by analyzing ticket sales and attendance.
- **Review and Rating Aggregation:**
  - **Data Query Requirement:** Aggregate user reviews and ratings to display average ratings for each movie.
- **Security Logs:**
  - **Data Query Requirement:** Maintain logs of security-related events, such as failed login attempts or suspicious activities.

These transaction requirements ensure that the Online Cinema Booking System can efficiently handle data entry, updates, deletions, and queries, supporting both user interactions and administrative tasks. Additionally, these transactions contribute to the overall functionality, security, and data integrity of the system.

10.0 Benefit and Summary of Proposed System

Benefit of proposed system:

1. Reduced Waiting Times:

The primary advantage of the proposed Online Cinema Booking System is the significant reduction in waiting times for customers. By implementing a streamlined ticket booking process, the system minimizes the time patrons spend in queues, ensuring a more efficient and rapid transaction experience. This enhancement directly contributes to a more positive and time-effective interaction with the cinema ticketing system.

2. Diversified Payment Options:

The integration of various payment methods stands as a pivotal feature, offering customers increased flexibility during the ticket purchase process. By providing a range of payment options, including credit cards, mobile wallets, and other electronic methods, the system caters to diverse customer preferences, enhancing overall convenience and accessibility.

3. Enhanced User Experience:

TThe proposed system places a strong emphasis on improving the user experience through the modernization of user interfaces. By adopting contemporary design principles and user-friendly interfaces, the system ensures a more intuitive and enjoyable experience for customers navigating through the ticket booking process. This contributes to heightened user satisfaction and engagement.

4. Automated Scheduling and Seat Allocation:

Automation in scheduling and seat allocation addresses issues related to manual errors and inefficiencies. The system's automated processes ensure accuracy in scheduling movie showtimes and allocating seats, optimizing the utilization of cinema seating. This not only reduces errors but also enhances the overall efficiency of the cinema's operations.

5. Improved System Efficiency:

A core benefit of the proposed system lies in its ability to enhance overall system efficiency. Through the implementation of a robust database system, the management of customer data is automated, significantly reducing errors and inefficiencies associated with manual data handling. This efficiency improvement extends to various aspects of the cinema ticketing process, providing a smoother and more reliable system for both users and cinema operators.

Summary of Proposed Online Cinema Booking System:

In summary, the proposed Online Cinema Booking System introduces numerous benefits to enhance the overall cinema ticketing experience. From reduced waiting times to diversified payment options and automated processes, the system aims to streamline operations, increase efficiency, and provide a satisfying and convenient service for both cinemas and customers. Real-time information updates and scalability further contribute to the system's effectiveness, while enhanced data security ensures the protection of user information, fostering trust and confidence in the system.

11.0 Summary

The objectives of the cinema booking system project encompass the streamlining of the booking process, incorporation of a real-time database, assurance of secure transactions, and provision of insightful analytics. Emphasizing user satisfaction, the system will employ an intuitive interface and recurrent staff training initiatives. Key priorities include scalability to accommodate growth and ongoing improvement informed by user feedback. Furthermore, strict adherence to data protection regulations remains a fundamental commitment.