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Introduction

In today's fast-paced IT industry, professionals are expected to continuously learn, upgrade their technical skills, and apply concepts in real-world scenarios. However, busy schedules, remote locations, and limited availability of convenient time slots often become major barriers to hands-on implementation. This challenge extends to students as well, especially in IT education, where technology evolves rapidly.

Fortunately, technology itself provides a solution!

At **Aptech**, we are committed to leveraging technology in our training model. To revolutionize the way students learn and apply concepts, we introduce **eProject**—a **structured, and interactive learning environment** designed to simulate real-world project implementation.

What is eProject?

eProject is a step-by-step, guided learning experience that mirrors classroom and lab-based training, allowing students to:

- ✓ **Practice progressively** using a ladder approach.
- ✓ **Build robust applications** from the ground up.
- ✓ **Utilize essential utilities** in user-designed applications.
- ✓ **Transform individual programs** into a unified, complete application.
- ✓ **Implement concepts in phases** for deeper understanding.
- ✓ **Enhance skills and add value** to their expertise.
- ✓ **Work on real-life projects** with practical relevance.
- ✓ **Develop complex and useful applications** based on real-world scenarios.
- ✓ **Receive mentoring and guidance** via email support.

How It Works

Students are required to complete their **eProject**, document their progress, and submit the source code within the allotted timeframe to the **eProjects Team**.

We look forward to your enthusiastic participation and a successful learning journey with **eProject**!

Objectives of the project

The primary objective of this program is to provide a **hands-on experience** in working on real-life projects. These applications serve as building blocks, helping students develop **larger and more robust applications**.

Rather than focusing on teaching specific software, this program aims to **present real-world scenarios** that enable students to create **practical applications** using the available tools.

Before starting the project, students are encouraged to **revise relevant topics** to ensure a strong foundation.

Guidelines for Execution

- Projects should be completed during **lab sessions**, with faculty assistance if needed.
- A **clear understanding of the subject matter** is essential for successful implementation.
- For any queries related to the project or its objectives, students should reach out to the **eProjects Team**.

We look forward to seeing your innovative applications come to life!

Problem Statement

Cinema continues to be one of the most popular forms of entertainment, with audiences frequently visiting theatres. However, traditional ticket booking often requires customers to stand in long queues, face last-minute unavailability of seats, or navigate multiple websites for trailers, reviews, and show timings.

The **CineBook** offers a unified platform where users can explore movies, check reviews and trailers, view real-time show schedules, and book tickets instantly. The platform is designed to cater to both casual moviegoers and regular cinema enthusiasts, while also providing administrators with powerful tools to manage screenings, pricing, and customer engagement.

Functional Requirements

The Web application will be designed with a set of forms/pages with menus representing choice of activities to be performed.

Following are the functional requirements of the application:

Home Page

The home page of the CineBook will serve as the primary entry point for users, designed to be visually engaging, user-friendly. It will highlight featured movies, provide quick booking access, and display relevant offers to enhance user convenience.

Key Features:

- 🎬 **Featured & Trending Movies** – showcase currently running and upcoming films with posters and trailers.
- 🔍 **Smart Search & Filters** – allow users to search by movie, theatre, city, or genre.
- 💡 **Promotions & Announcements** – display special offers, discounts, and festival updates.

1.1 User Registration and Authentication

- The system shall allow new users to register using **email, phone number**.
- The system shall allow registered users to log in securely with **password**.
- The system shall provide a **password recovery/password change mechanism**.
- The system shall allow users to update their personal profile (name, age, preferred language, preferred city).

1.2 Movie Browsing and Search

- The system shall display a **list of currently running and upcoming movies**.
- Users shall be able to **filter movies** by:
 - City
 - Genre (Action, Drama, Comedy, etc.)
 - Language (Vietnamese, English, Korean, etc.)
 - Rating
 - Date (current & future showtimes).
- The system shall provide a **search bar** to search movies by title, actor, or director.
- Each movie detail page shall display:
 - Trailer
 - Synopsis
 - Cast & crew
 - Reviews & ratings (with sorting by latest or highest rated).

1.3 Ticket Booking

- The system shall allow users to select:
 - Theater location
 - Movie
 - Show date & time
 - Seat category (Gold, Platinum, Box).
- The system shall display a **seat map** with availability.
- Users shall be able to select multiple seats in a single transaction.
- Booking shall be confirmed only after successful payment (dummy).

1.4 E-Ticketing & Confirmation

- After payment (dummy), the system shall generate an **e-ticket**.

- E-ticket shall include:
 - Movie name, theater, showtime
 - Seat number & category
 - Booking ID.
- Users shall be able to **view past and upcoming bookings** in their profile.

1.5 Reviews & Ratings

- Registered users shall be able to **rate movies (1–5 stars)**.
- Users shall be able to **write reviews**.
- The system shall display reviews sorted by latest, or highest rating.
- Admin shall have the right to **moderate/delete inappropriate reviews**.

1.6 Admin Management

- Admin shall log in to access.
- Admin shall be able to perform CRUD operations:
 - Add, edit, delete **theaters** (with city, address, seating capacity).
 - Add, edit, delete **movies** (title, poster, genre, duration, trailer link).
 - Add, edit, delete **showtimes** (date, time, rates for seat classes).
- Admin shall be able to **set pricing dynamically** based on:
 - Weekend vs weekday
 - Peak hours vs normal hours
 - Seat category.
- Admin shall be able to **generate reports** on:
 - Daily/weekly/monthly ticket sales
 - Revenue per theater
 - Most popular movies
 - Registered users and active bookings.

1.7 Notifications

- The system shall send notifications.
- Users shall be notified of:
 - Booking success/failure
 - Upcoming show reminders (2 hours before showtime)
 - Promotional offers (e.g., holiday discounts).

Non-Functional Requirements

There are several non-functional requirements that should be fulfilled by the Web application.

These include:

Safe to use: The Web application should not result in any malicious downloads or unnecessary file downloads.

Accessible: The Web application should have clear and legible fonts, user-interface elements, and navigation elements.

User-friendly: The Web application should be easy to navigate with clear menus and other elements and easy to understand.

Operability: The Web application should operate in a reliably efficient manner.

Performance: The Web application should demonstrate high value of performance through speed and throughput. In simple terms, the Web application should be fast to load and page redirection should be smooth.

Security: The Web application should implement adequate security measures such as authentication. For example, only registered users can access certain features.

Availability: The Web application should be available 24/7 with minimum downtime.

Hardware/ Software Requirements

Hardware

- Intel Core i5/i7 Processor or higher
- 8 GB RAM or above
- Color SVGA
- 500 GB Hard Disk space
- Mouse
- Keyboard

Software

Technologies to be used: [Choose as per Course/Semester]

Frontend: HTML5, CSS3, Bootstrap, ReactJS 18 or higher/AngularJS/Angular 9 or higher, JavaScript, jQuery, and XML

Backend: Java 16 or higher (with Apache NetBeans or Eclipse), Java EE 7 or higher/Jakarta EE 9 or higher or C# 7.2 with ASP.NET MVC and ASP.NET MVC Core (optional), Visual Studio 2019 or higher or PHP 7.2 or higher with Laravel Framework or Python 3.0 or higher with Flask or Django

Database: MySQL 8.0 or higher/SQL Server 2019 or higher

Project Deliverables

You will require to design and build the project and submit it along with a complete project report that includes:

- Problem Definition
- Design specifications
- Diagrams such as flowcharts for various activities, Data Flow Diagrams, and so on
- Database Design
- Test Data Used in the Project
- Project Installation Instructions (if any)
- User Credentials for all types of users with passwords

Documentation is considered as a very important part of the project. Ensure that documentation is complete and comprehensive. The consolidated project will be submitted as a zip file with a ReadMe.doc file listing assumptions (if any) made at your end and SQL scripts files (.sql) containing database and table definitions.

Documentation should not contain any source code.

Preferably, host the working Web application on a site and share the URL for evaluation. In addition, **you must submit a video clip** (mp4 file) showing the actual working of the application.

Over and above the given specifications, you can apply your creativity and logic to improve the system.

Sitemap: To understand the flow of **CineBook** Web Application, you will have to create a Sitemap and add it to the home page of your application.