Helios

LumiereCinema
Vision Document

Version 1.2

Revision History

Date	Version	Description	Author
28/05/2025	1.0	Write Introduction and Stakeholder and User Descriptions	Vương Ngũ Tín Thành
29/05/2025	1.1	Write Product Overview, Product Features and Non-Functional Requirements	Tạ Thiên Lâm
31/05/2025	1.2	Review document	Nguyễn Thiên Nhã Trân Phan Nhựt Anh Ngô Hồng Thanh

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Vision (Small Project)

1.   Introduction

The purpose of this document is to collect, analyze, and define high-level needs and features of the Lumiere Cinema. It focuses on the capabilities needed by the stakeholders and the target users, and why these needs exist. The details of how the Lumiere Cinema fulfills these needs are detailed in the use-case and supplementary specifications.

This document provides an overview of the Lumiere Cinema website project, which aims to create a modern, intuitive web platform specifically designed for teenagers and young adults to book movie tickets and purchase snacks at Lumiere cinemas.

2.   Positioning

2.1.   Problem Statement

The problem of	overly complex interfaces and booking processes
affects	cinema operators, potential young customers and cinema staff managing ticket sales and validations
the impact of which is	reduced engagement from younger demographics, lower online ticket sales, inefficient in-person ticket purchase processes, and ultimately decreased revenue from a key target market
a successful solution would be	a visually striking, intuitive web platform that streamlines the movie browsing and ticket purchasing experience, while providing comprehensive management tools for cinema staff

2.2.   Product Position Statement

For	customers who enjoy watching movies at cinema, especially teenagers and young adult
Who	need an efficient and personalized way to discover movies and book tickets online or in-person
The Lumiere Cinema website	is a movie ticket booking platform
That	provides a visually appealing and user-friendly interface to easily browse movies, book seats and order snacks
Unlike	popular cinema websites that focus on all ages with complex interfaces
Our product	focuses on the preferences and digital behaviors of younger generations, offering integration with social media, personalized movie recommendations, and a rewarding loyalty program.

3.   Stakeholder and User Descriptions

3.1.   Stakeholder Summary

Name	Description	Responsibilities
Supervisor	Teaching Assistant overseeing the project.	- Provide their guidance throughout the development process of the Lumiere Cinema website. - Review website documents, design and source code.
Development team	Development team responsible for the platform development	- Prepare the technical documentation for software development. - In charge of developing and constructing the platform with fully functional features.

Name	Description	Responsibilities
		- Ensure the quality of the product.
Cinema owners	Owners and executives of Lumiere Cinema chain	- Ensure the system meets business objectives - Approve funding and resources - Monitor overall business performance - Set strategic direction
Platform operator	Operate and manage the platform.	- Manage platform users - Manage cinema movies
Marketing Team	Team responsible for promoting movies and the cinema experience	- Manage promotions and special offers - Ensure the platform effectively showcases upcoming movies - Analyze customer data for targeted marketing - Drive customer engagement
IT Department	Technical team responsible for system maintenance	- Ensure the system is secure. - Provide technical support. - Implement system updates

3.2.   User Summary

Name	Description	Responsibilities	Stakeholder
Administrator	System administrators with full access privileges	- Manage user permissions - Oversees system operations - Monitors system performance - Handles critical issues - Manage movies of the cinema	Cinema owners IT Department Platform operator
Branch Manager	Manager of each branch	- Schedules movie screenings - Manages branch-specific content - Accesses branch revenue reports - Manages branch employees	
Cashier	Staff handles in-person transactions	- Processes ticket sales - Assists walk-in customers - Manages snack sales	
Ticket Validator	Staff responsible for ticket verification	- Validates digital and printed tickets - Manages entrance to screening rooms - Handles basic customer inquiries	
Customer	Teenagers and young adults who watch movies	- Searches and browses movies - Books tickets and purchases snacks online - Rates watched movies - Participates in loyalty program	

3.3.   User Environment

Administrator
-   Number of people: 2-3 system administrators at the company headquarters
-   Task cycle: Performs system maintenance weekly, user management as needed (15-30 minutes per task), and emergency troubleshooting within 1-2 hours of reported issues, updates movie information daily (30-60 minutes), manages promotions weekly (1-2 hours), and moderates user reviews continuously throughout the day

- Environment: Works primarily on desktop computers in an office setting with stable high-speed internet connection and occasionally remotely on laptops
- Platforms: Web-based app using Chromium browsers on computer using Windows or MacOS.
- Integration needs: Monitoring tools, backup systems, and security software, digital asset management systems, movie database APIs, and social media management tools

Branch Manager
- Number of people: 1 manager per cinema location (multiple locations)
- Task cycle: Reviews schedule daily (15-30 minutes), manages staff assignments weekly (1 hour), analyzes revenue reports monthly (2-3 hours)
- Environment: Divides time between office computer and being present on cinema floor, occasionally accessing system from mobile devices
- Platforms: Desktop computer at office, tablet/smartphone when mobile
- Integration needs: Staff scheduling software, inventory management systems, and financial reporting tools

Cashier
- Number of people: 3-8 cashiers per location depending on size and time of day
- Task cycle: Continuously processes customers during shift hours with each transaction taking 1-3 minutes
- Environment: Fixed position at counter terminals in noisy, fast-paced cinema lobby with frequent customer interaction
- Platforms: Dedicated POS terminals with touch screens running specialized interface
- Integration needs: Payment processing systems, ticket printing equipment, and inventory tracking for concessions

Ticket Validator
- Number of people: 1-3 per screening room during peak hours
- Task cycle: Quick validations taking 5-15 seconds per customer, continuous during pre-show periods
- Environment: Mobile position near cinema hall entrances, standing for extended periods in dimly lit areas
- Platforms: Handheld ticket scanning devices or mobile tablets with validation app
- Integration needs: Real-time ticket database access, communication system with cashiers and managers

Customer
- Number of people: Individual bookings, but cinema visits typically involve groups of 2-5 people
- Task cycle: Browse movies (2-10 minutes), select seats (1-2 minutes), payment (1-2 minutes), food ordering (1-4 minutes) with target total time of less than 5 minutes
- Environment: Primarily using mobile devices in various settings (home, school, public transport, or while socializing)
- Platforms: Currently 70% mobile browsers, 30% desktop browsers; future implementation will include native mobile apps
- Integration needs: Social media accounts, payment methods, and potentially calendar apps for scheduling

3.4.   Summary of Key Stakeholder or User Needs

Need	Priority	Concerns	Current Solution	Proposed Solutions
Simplified ticket booking process	High	Complex booking processes lead to abandoned purchases	Multi-page form with numerous steps	Streamlined, single-page booking experience with minimal required inputs
Engaging visual interface	High	Traditional cinema websites are text-heavy and unappealing to younger users	Generic templates with minimal visual appeal	Modern, visually rich interface with trailers, dynamic content, and intuitive navigation

Need	Priority	Concerns	Current Solution	Proposed Solutions
Mobile-friendly experience	High	Current solutions are not optimized for mobile devices	Desktop-first design with poor mobile adaptation	Responsive design with mobile-first approach
Integration with social media	Medium	Users want to connect accounts and share experiences	Limited or no social media integration	Content sharing with major social platforms
Personalized recommendations	Low	Users struggle to discover new movies that match their interests	Generic "now showing" lists	AI-powered recommendation system based on watch history and preferences

3.5. Alternatives and Competition

Softwares used in the Vietnamese cinema industries are identified as Lumiere Cinema's competitors. They include: CGV Cinemas, Galaxy Cinema, Lotte Cinema, etc. Through discussion with the development team, key characteristics of each platform is summarized as following:

- CGV Cinemas: This platform offers a wide range of movies, and available technologies to buy tickets at their cinema branches. However, their UI received multiple negative reviews from young people, and buying tickets required customers to create an account and login. Ad pop-up slows down user interaction.
- Galaxy Cinema: This platform showcases their movie selections effectively, showing locations and screening time are displayed without requiring an account. Nevertheless, similar to CGV, users have to login to buy tickets. Ad pop-up slows down user interaction.
- Lotte Cinema: This platform also displays their movie information, showing locations and screening time. However, its UI/UX is confusing, with many unnecessary elements and user steps. Similar to the competitors on the market, ticket buying also required an account.

Through analysing competitors' flaws, our platform aims to deliver an optimised, mobile-first experience, specially tailored to Vietnamese teenagers and young adults. Our platform will combine the strengths of our competitors while addressing their weaknesses.

4. Product Overview

This section provides a high level view of the product capabilities, interfaces to other applications, and system configurations. This section usually consists of two subsections, as follows:

4.1. Product Perspective

Lumiere Cinema is a modern web platform that provides a convenient and user-friendly movie ticket booking experience for young audiences.

The product allows users to easily access the latest movies with detailed information about showtimes, cinema locations, and real-time seat availability. Movie data and screening schedules are managed on a centralized database system, enabling Lumiere Cinema to interact seamlessly with both users and cinema staff.
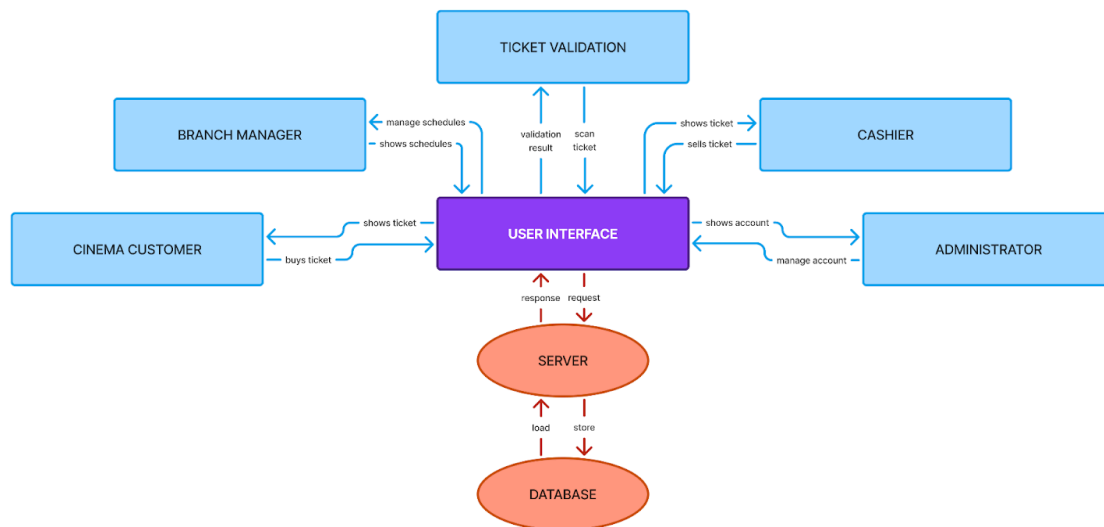
Figure 1: Example of different user types interact with Lumiere Cinema system

4.2. Assumptions and Dependencies

The development team identifies some user assumptions as:

- Users have a stable internet connection when accessing the Lumiere Cinema system.
- The MongoDB database is deployed and maintained properly on MongoDB Atlas.
- The backend and frontend systems are deployed on a server that supports Node.js and can handle concurrent requests effectively.
- System administrators (Admins) are familiar with basic operations and content management within the platform.
- Cashiers and branch managers are trained to use their respective role-specific user interfaces.

Some dependencies of the Lumiere Cinema website are:

The Lumiere Cinema system depends on several external components to function effectively. It relies on MongoDB Atlas as the primary cloud-based database for storing user, movie, and booking information. The system also requires a reliable web server to host both frontend and backend services. Additionally, the application's usability depends on the availability of modern web browsers and stable internet connections for users to interact with the platform seamlessly.

5. Product Features

This section describes and defines high-level features of the LumiereCinema website. Features are the high-level capabilities of the website that are necessary to deliver benefits to the users including: Customer and Lumiere's Staff.

No.	Feature	Description	Priority
1	Register & Login	Allow users to create an account and log in to manage their activities.	High

No.	Feature	Description	Priority
2	Manage Account	Users can edit personal information such as name, birthday, phone number, and email, password	High
3	Search Movie	Search for movies by keywords, genres, etc.	High
4	View Movie Details	Show movie trailer, description, showtimes at each branch, and more.	High
5	Buy Movie Ticket & Snack Combo	Select movie, branch, time, seats, and snacks; enter payment to purchase.	High
6	Rate movie	After watching, users can submit ratings.	Medium
7	View Watch History	Display a history of movies the customer has watched.	Medium
8	Manage Movies	Admin can add, update, and remove movies currently showing.	High
9	Manage Screening Schedule	Branch Managers create and modify movie schedules per cinema branch.	High
10	Manage Promotions	Create, update, and delete promotional campaigns (e.g. discounts or vouchers).	Medium
11	Manage Permissions	Assign roles and access rights to user accounts.	High
12	Validate Ticket	Use ticket ID to search and confirm a customer's ticket.	High
13	View Revenue Report	Show summarized revenue reports for admin and managers.	Medium
14	Loyalty Program	Points accumulation system that rewards users with vouchers and tier levels.	Medium
15	Recommend Movies	AI algorithm-based suggestions based on user watch history.	Medium
16	Social Media Integration	Connect with Facebook or Google APIs for easier register and login.	Low
17	Offline Purchase Support	Allow cashiers to assist walk-in customers with ticket booking.	High

No.	Feature	Description	Priority
18	Seat Selection in Real-Time	Allow customers to choose their seats during the booking process with real-time updates on seat availability.	High
20	Notification System	Notify users of promotions, booking confirmation, or showtime reminders via email.	Low
22	Map-Viewing	Display cinema locations on a map based on the user's current location.	Medium
23	Multi-language Support	Interface available in English and Vietnamese	Medium
24	Session Timeout for Seat Hold	Temporarily reserves selected seats for a user session (10 minutes). If payment is not completed within the time limit, the seats are freed.	High

6.   Non-Functional Requirements

6.1.   Efficiency
-   Response Time: The system must respond to user actions (e.g., login, seat selection) within 3 seconds in 95% of cases.
-   Load Handling: The platform should maintain stability and responsiveness during high-traffic movie releases.

6.2.   Availability & Reliability
-   Fault Tolerance: In case of system errors, users should receive meaningful error messages and the system should recover gracefully without crashing.
-   Auto Recovery: The system must be able to restart critical services automatically if they fail.

6.3.   Security Requirements
-   Authentication & Authorization: Implement role-based access control (RBAC) for users, staff, and admins.
-   Data protection:
    -   Passwords must be stored using strong hashing algorithms
    -   Sensitive data (emails, phone numbers) must be encrypted in transit and at rest.

6.4.   Compatibility & Portability
-   The website must be responsive and optimized for different screen sizes and resolutions, including:
    -   Desktop and laptop devices (Windows, macOS)
    -   Tablets and smartphones (Android, iOS)
    -   The application must function correctly on major modern web browsers, including: Chrome, Firefox, Edge,...
    -   Any third-party services, APIs used must also support these browsers.