Movie Ticketing System

Software Requirements Specification

1.0.0

09/25/25

Group #20

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Prepared for
CS 250- Introduction to Software Systems
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Revision History

Date	Description	Author	Comments
<date>	<Version 1>	<Your Name>	<First Revision>
09/25/25	v 1.0.0	Dee Edwards Nester Lomeli Trevor Brown	First Revision: Introduction, Use Cases, Functional Requirements, Non-Functional Requirements
10/12/25	v 2.0.0	Dee Edwards	Second Revision: some formatting clean-up; added UML class diagram; added Software Architecture Diagram

Document Approval

The following Software Requirements Specification has been accepted and approved by the following:

Signature	Printed Name	Title	Date
	<Your Name>	Software Eng.	
	Dr. Gus Hanna	Instructor, CS 250	

Table of Contents

1. Introduction

1.1 Purpose

The purpose of this SRS is to outline and document the functional and non-functional requirements to develop a Movie Ticketing system useable by our client Movie Theatres and their customers. This document is intended for an audience of Movie Theatre operators to understand and review each major component of the system

1.2 Scope

This document details the specifications for a Movie Ticketing System. The primary purpose of this product is to provide an online marketplace where movie-goers can easily purchase tickets from their local theatres. To achieve this end, the product will also need to have an alternate interface designed for Movie Theatre operators to maintain a database of movie showings without technical knowledge.

1.3 Definitions, Acronyms, and Abbreviations

Admin(s)	Business owners and operators of Movie Theatres and their Customer Support; Admins may interface with developers during the design and creation of the system, but must ultimately be able to use the system on their own when the product is ready to ship.
Customer(s)	Patrons of the Movie Theatres which do business with the Theatre using this Movie Ticketing System.
User(s)	Comprised of both clients and customers, both groups must be able to access the system in separate ways in order for the system to facilitate commerce between the two parties.

1.4 References

This subsection should:

(1) Provide a complete list of all documents referenced elsewhere in the SRS, or in a separate, specified document.

(2) Identify each document by title, report number - if applicable - date, and publishing organization.

(3) Specify the sources from which the references can be obtained.

This information may be provided by reference to an appendix or to another document.

1.5 Overview

This subsection should:
(1) Describe what the rest of the SRS contains
(2) Explain how the SRS is organized.

2. General Description

2.1 Product Perspective

- Customer and in-person hardware
- Chrome web browser to view our product from customer's and in-person hardware
- Stripe for third party payment system

2.2 Product Functions

The product will ask the customer to select movie, showtime, and seat before asking for login information if not already logged in. If all previous steps have been completed, they will go to payment options.

2.3 User Characteristics

Typical movie-going audience; Biggest demographic is likely pre-teens and teens. Customers are looking for entertainment and are primed to be sold on an experience.
Admins are knowledgeable, focused on solving problems and maintaining a streamlined and understandable service.

2.4 General Constraints

Third party payment system, Stripe

2.5 Assumptions and Dependencies

Assumptions

- Hardware should be able to run Chrome web browser

- All cards will be accepted for payment
- Hardware should run on Windows or IOS

Dependencies

- Depends on movie data base
- Depends on admin

3. Specific Requirements

3.1 External Interface Requirements

3.1.1 User Interfaces

3.1.1.1 Customer-facing User Interface.
3.1.1.2 Client-facing User Interface.

3.1.2 Hardware Interfaces

Should be able to print tickets at in person theatre. All other hardware handled by browser and OS

3.1.3 Software Interfaces

3.1.4 Communications Interfaces

Stripe 3rd party payment processing

3.2 Functional Requirements

3.2.1 Browse Movies and Showtimes

3.2.1.1 Introduction

This function allows customers to browse movies, view details, and check avalible showtimes

3.2.1.2 Inputs
- Customer request (web or kiosk) to view movie listings
- Available filters: data, time, format, language

3.2.1.3 Processing
- system queries movie and showtime database
- Filters are applied to narrow results
- Seat availability is retrived each showtime

3.2.1.4 Outputs
- A list of movies, with details: title, rating, duration, description, poster image
- Showtimes and seat availability

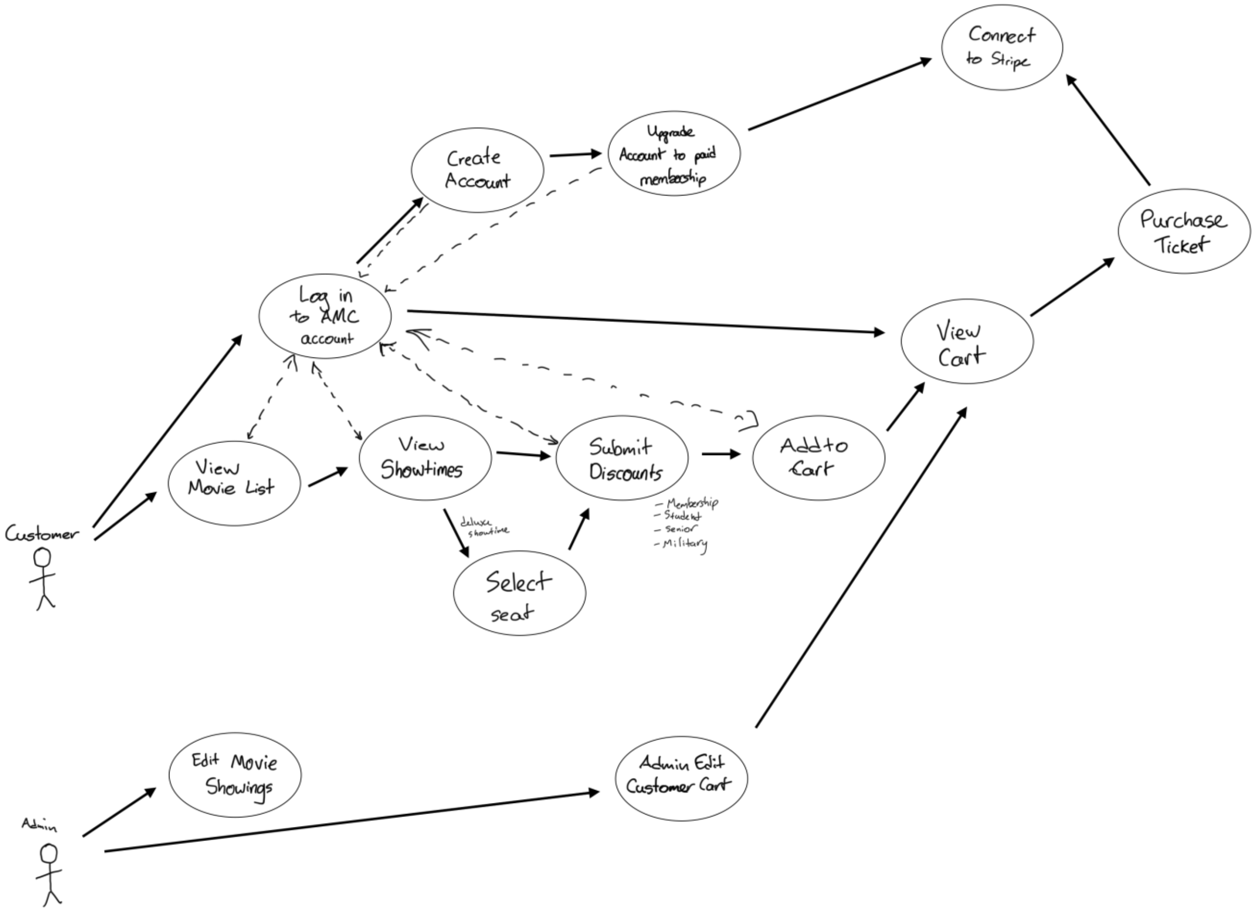
3.2.1.5 Error Handling
- if no showtimes match the criteria, display “No showtimes avalible”
- if database query fails, display an error message and retry option.

3.2.2 Ticket Purchase

3.2.2.1 introduction

This function allows customers to select seats, purchase tickets, and confirm transactions
3.2.3.3 Processing
- system checks ticket validity (correct showtime, not expired, not already deemed).
- valid tickets are marked as redeemed in the database
3.2.3.4 Outputs
- Confirmation message “Ticket Redeemed”
- Printed stub (if kiosk prints tickets
- Staff view updated attendance record
3.2.3.5 Error Handling
- If ticket is invalid, system displays error “invalid or already used ticket”
- if scanner fails, allow manual entry of confirmation number

3.3 Use Cases



3.4 Classes / Objects

3.4.1 Customer

3.4.1.1 Attributes

- Name
- Email
- Phone Number
- Password
- Stripe Account

3.4.1.2 Functions

- Add to cart
- Select Movie
- Select Showtime
- Login
- Create Account
- Upgrade Account
- Check Out Cart
- Sign in to Stripe

3.4.2 Admin

3.4.2.1 Attributes

- Name
- Password

3.4.2.2 Functions

- Edit Movie Database
- Access & Edit Customer Cart

3.5 Non-Functional Requirements

3.5.1 Performance

95% of transactions shall be processed in less than a second.
Updates as infrequent as possible to reduce system downtime.

3.5.2 Reliability

Service should be able to support at least 1,000 active users simultaneously.

3.5.3 Availability

Accessible on customer devices via Chrome web browser and on-site at theatres using ticketing booths running modified Chrome web browsers.
Service available through 5 minutes of user inactivity (during purchasing process).
purchasing process will be available two weeks prior to movie date and until 10 minutes after showtime start.

3.5.4 Security

Payment methods must be securely encrypted; this can be outsourced to Stripe

Admin interface must be securely password protected in order to prevent tampering with the client's business.
Customer interface must be securely password protected in order to prevent use of customer's saved data, including Stripe login info and any tickets the customer has purchased and not used.
All stored passwords must be securely encrypted to AES-128 standard.

3.5.5 Maintainability

Database should be maintainable by an admin with no technical

3.5.6 Portability

Browser-Based Web App prioritizing compatibility with Chrome, with Firefox added as an additional priority if time and budget allow.

3.6 Inverse Requirements

- The system shall not store raw credit card information in its servers
- The system shall not allow ticket redemption more than 30 minutes after the showtime begins
-The system shall not allow duplicate seat assignments for the same showtime

3.7 Design Constraints

Specify design constrains imposed by other standards, company policies, hardware limitation, etc. that will impact this software project.

3.8 Logical Database Requirements

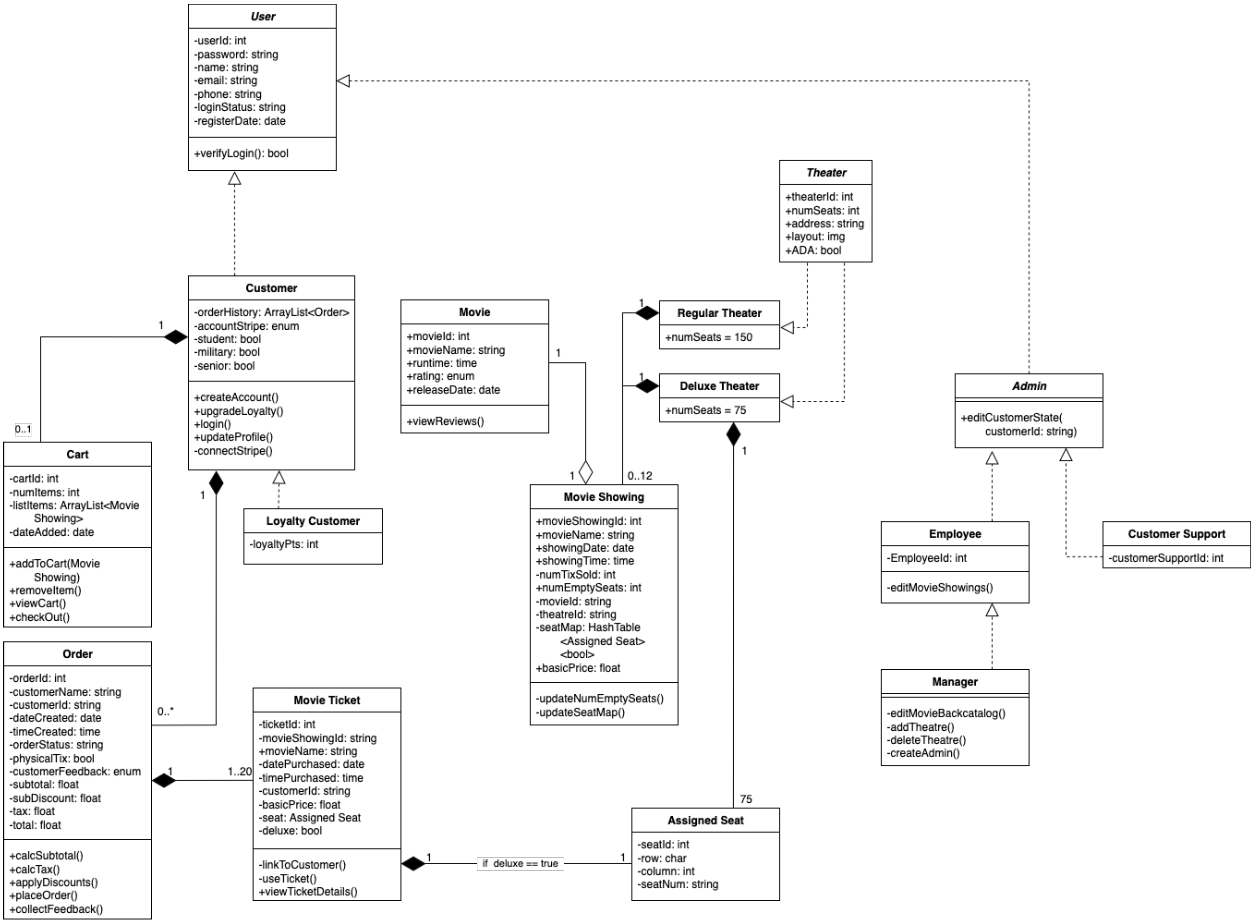
Will a database be used? If so, what logical requirements exist for data formats, storage capabilities, data retention, data integrity, etc.
-Relational database is required to store movies, showtimes, customers, orders, and tickets
-Each ticket record shall include: order ID, showtime ID, seat number, purchase time stamp and redemption status
- Database shall retain transaction history for at least 5 years for auditing and reporting

3.9 Other Requirements

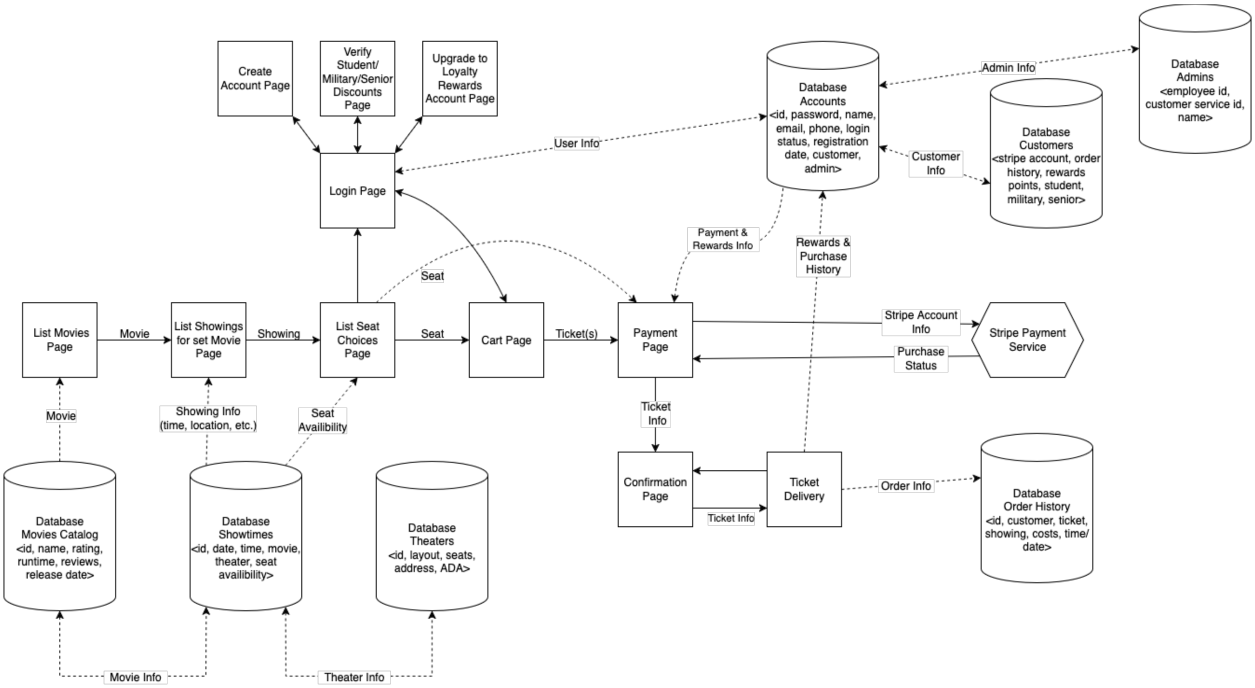
Catchall section for any additional requirements.

4. Analysis Models

4.1 UML Class Diagram



4.2 Software Architecture Diagram


Create Account Page
Verify Student/ Military/Senior Discounts Page
Upgrade to Loyalty Rewards Account Page
Login Page
User Info
Database Accounts <id, password, name, email, phone, login status, registration date, customer, admin>
Admin Info
Database Admins <employee id, customer service id, name>
Customer Info
Database Customers <stripe account, order history, rewards points, student, military, senior>
Payment & Rewards Info
Rewards & Purchase History
Seat
List Movies Page
Movie
List Showings for set Movie Page
Showing
List Seat Choices Page
Seat
Cart Page
Ticket(s)
Payment Page
Stripe Account Info
Stripe Payment Service
Purchase Status
Movie
Showing Info (time, location, etc.)
Seat Availibility
Ticket Info
Confirmation Page
Ticket Delivery
Ticket Info
Order Info
Database Order History <id, customer, ticket, showing, costs, time/ date>
Database Movies Catalog <id, name, rating, runtime, reviews, release date>
Database Showtimes <id, date, time, movie, theater, seat availibility>
Database Theaters <id, layout, seats, address, ADA>
Movie Info
Theater Info

4.3 Sequence Diagrams

4.4 Data Flow Diagrams (DFD)

4.5 State-Transition Diagrams (STD)

5. Change Management Process

Identify and describe the process that will be used to update the SRS, as needed, when project scope or requirements change. Who can submit changes and by what means, and how will these changes be approved.

A. Appendices

Appendices may be used to provide additional (and hopefully helpful) information. If present, the SRS should explicitly state whether the information contained within an appendix is to be considered as a part of the SRS's overall set of requirements.

Example Appendices could include (initial) conceptual documents for the software project, marketing materials, minutes of meetings with the customer(s), etc.

A.1 Appendix 1

A.2 Appendix 2