Software Requirements Specification

for

Theatre Booking System

Version 2.0

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Table of Contents

Contents

Revision History

Name	Date	Reason For Changes	Version
Version 2.0	03/27/2022	Revision	2.0

1. Introduction

1.1 Purpose

The purpose of this document is to explain in detail all the software requirements for the Theater Booking System version 1.0, with its scope being the whole system. All the classes, functions, and other system requirements are written into this document so the owner and the developer team can better understand what the system must achieve in terms of functionality and needs to meet the criteria that the owner requires for his booking system.

1.2 Product Scope

The theater “Los Portales” owned by Dr. Edgar Eduardo Ceh Varela requires a system to manage the sales for its different plays. The system must be designed to bring benefits to the theater by allowing it to make business through the internet by providing a system that can display the current and upcoming plays in an easy-to-use user-interface, so they are able to purchase tickets and select their desired seats if available. At the same time, the system must allow the theater admins to add, modify or delete plays as they require and the ability to assign prices to the different seats. This product brings a huge benefit to the theater by modernizing how they make their sales and schedule their plays, making life easier for both the administration and the customers themselves.

1.3 Glossary

Term	Definition
Owner	The owner of the theater requires a booking system. The client for this project.
Customer	The potential customers for the theatre that may use the booking system
Admin	The person logging into the management area to add plays and generate reports.

1.4 References

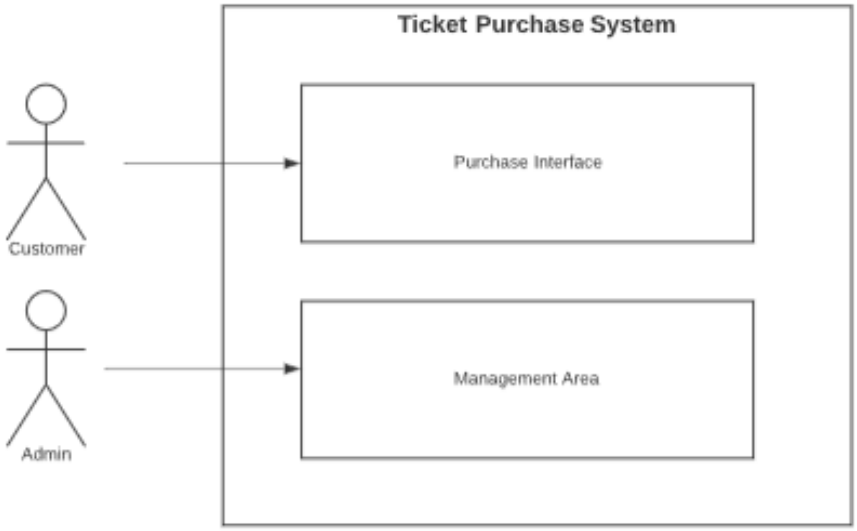
Ambakisye Kalinga, E. (2018). Software Engineering. African Virtual University.

Sommerville, I. (2011). Software Engineering. Boston: Pearson.

2. Overall Description

2.1 Product Perspective

The Theater Booking System for “Los Portales” is a new self-contained product.



The Ticket Management System has two main interfaces with one user class for Customers and one class for Management. Customers will access the Purchase Interface to view seats and purchase tickets. The admin will access the Management Area to add, modify, delete plays, and generate reports about sales.

2.2 Product Functions

The product allows the Customer user to perform the following:

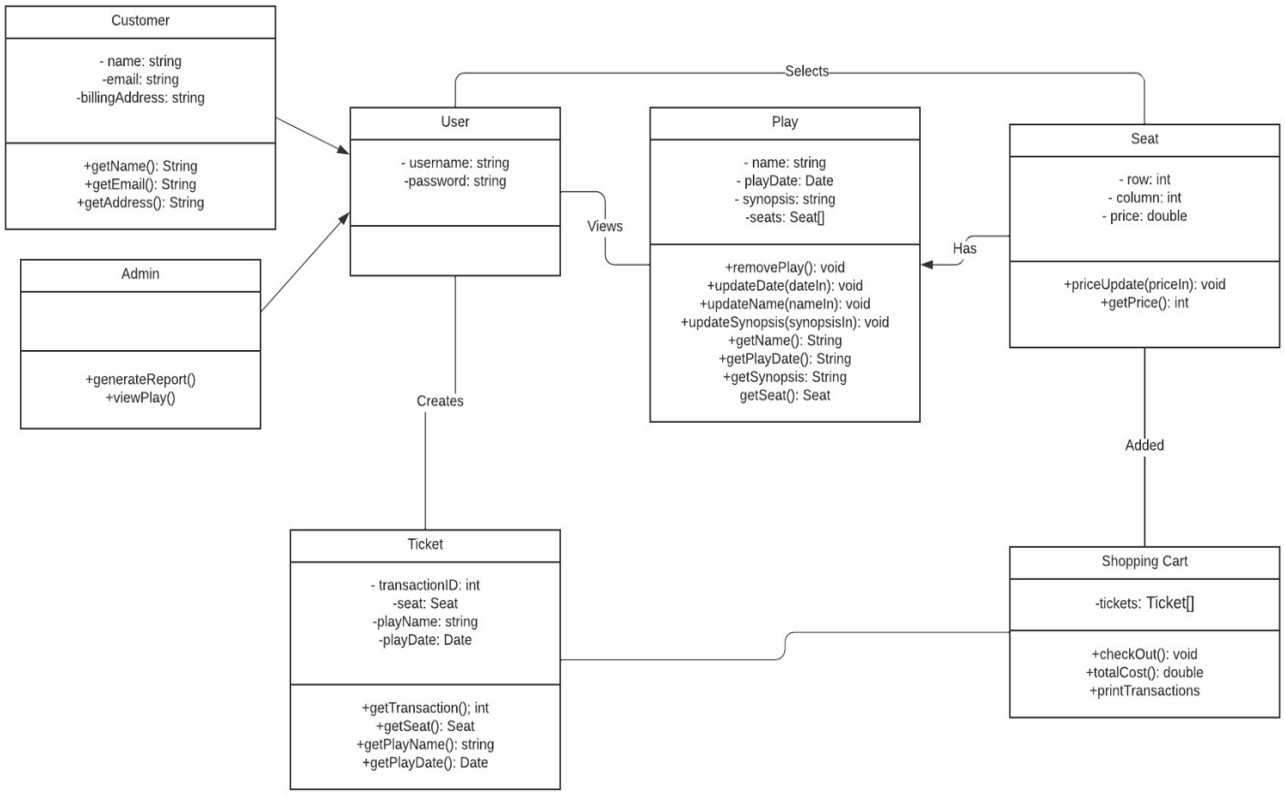
- Authentication (Register, sign in and sign off from their accounts)
- Homepage displaying upcoming plays for the customers
- Choose their seats from a graphical seating
- Shopping Cart where they can have their tickets while they browse the web
- Checkout their tickets contained in the Shopping cart

The product will allow the Admin user to perform the following:

- Sign in into the management area
- Manage plays: create, modify, and delete.
- Generate reports for sales in a specific play and date.

2.3 User Classes and Characteristics

UML Class Diagram:



In the Theatre Booking System there are going to be the following classes: Play, Seat, Shopping Cart, Customer, and Ticket.

- Play is one of the most important classes in the system as it has all the information about the plays the theatre is going to showcase on the website. For example, the play name, date when the play is going to be played, time, synopsis, seats, etc.
- Seat is a class that will have information about the seat like the position inside the theatre and the cost for that specific set object.
- Shopping Cart is the class that will hold all the information about the tickets the customer has added to their shopping cart with its cost and number of seats, so it can be checked out when the customer wishes to.
- Customer is another important class as it holds all the needed information about the customer user information like their email address.
- Ticket is the class that holds the information about the purchased tickets like the transaction id for that ticket, name of the play, seat number, how much it cost, etc.

2.4 Operating Environment

The operating environment would be the web browser as the booking system would be hosted online, so the customers can access it from their computers or mobile devices.

The recommended browsers are:

- *Google Chrome (desktop or android version)*
- *Mozilla Firefox*
- *Apple Safari (including iOS version)*
- *Microsoft Edge*
- *Opera*

3. External Interface Requirements

3.1 User Interfaces

The customer interface for the software shall be compatible with any browser such as Edge, Chrome, Safari, Mozilla/Firefox, Opera, by which user can access the seat purchasing application.

3.2 Hardware Interfaces

Since the application is web-based, the application must run over the internet; all the hardware share require to connect to the internet will be a hardware interface for the system. As, e.g., Modem, WAN - LAN, Ethernet Cross-Cable.

3.3 Software Interfaces

The web application shall communicate with the database to identify all the available seats to offer the customer and verify the customer.

The web application system shall communicate with the bill pay system to identify available payment methods, validate the payments, and process payment.

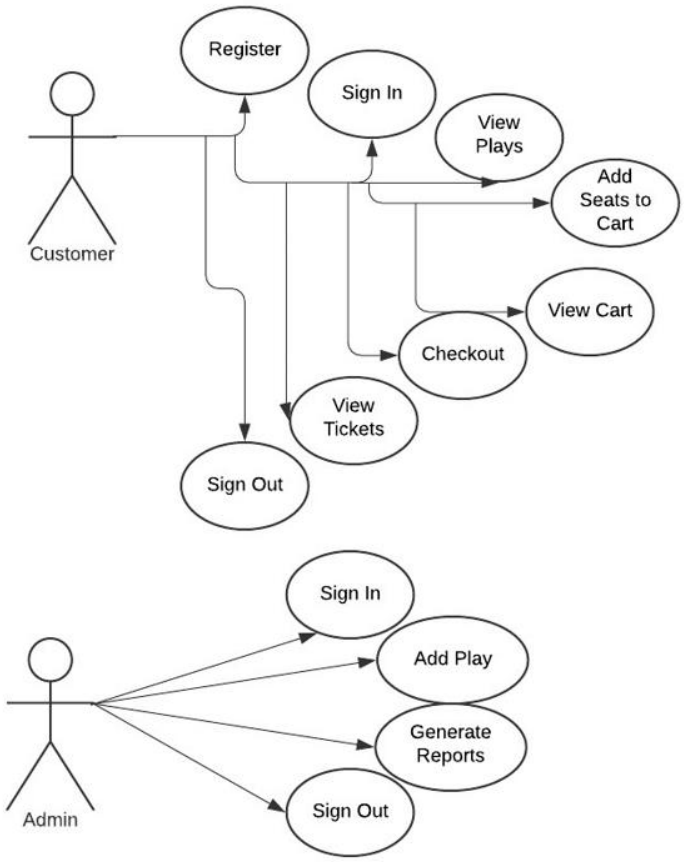
The web application system shall communicate with the external Tax system to calculate tax.

3.4 Communications Interfaces

The system would use HTTPS as standard to guarantee secure communication, so the customer sensitive information remains protected.

4. System Features

4.1 Use Case Diagram



Registration/ Sign In/ Sign Out (Customer):A function for customers so they can register into the system and log-in to their accounts to buy tickets.

View Plays (Customer): An interface where the customer can view the seats that are available for a specific showing of a play.

Add Seats to Cart (Customer):A function so the customer can add seats selected while viewing play availability to a purchase cart.

View Cart (Customer):A function for customers where they can view their cart and the tickets they have selected from the plays.

Checkout (Customer):A function for customers to purchase seats they have added to their cart.

View Tickets (Customer):A function where the customer can view all of their previously purchased tickets and print copies if needed.

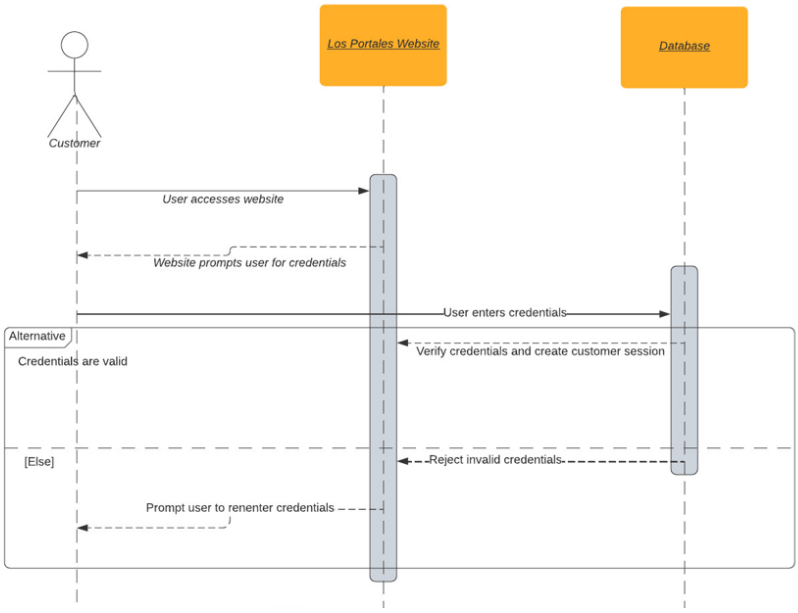
Sign-in/Sign-out (Admin):A sign in and sign out function for admin, so they can sign in and sign off from the management area.

Generate Report (Admin):A function where the administrator can generate reports and view what seats have been sold for each play.

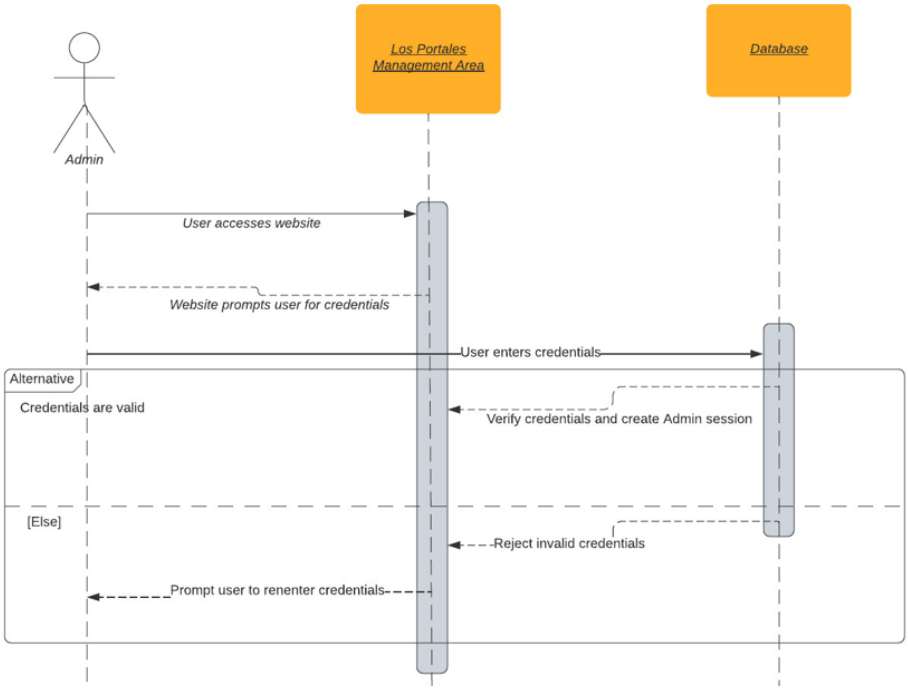
Add Play (Admin):A function where the administrator can generate reports and view what seats have been sold for each play.

4.2 Sequential Diagrams

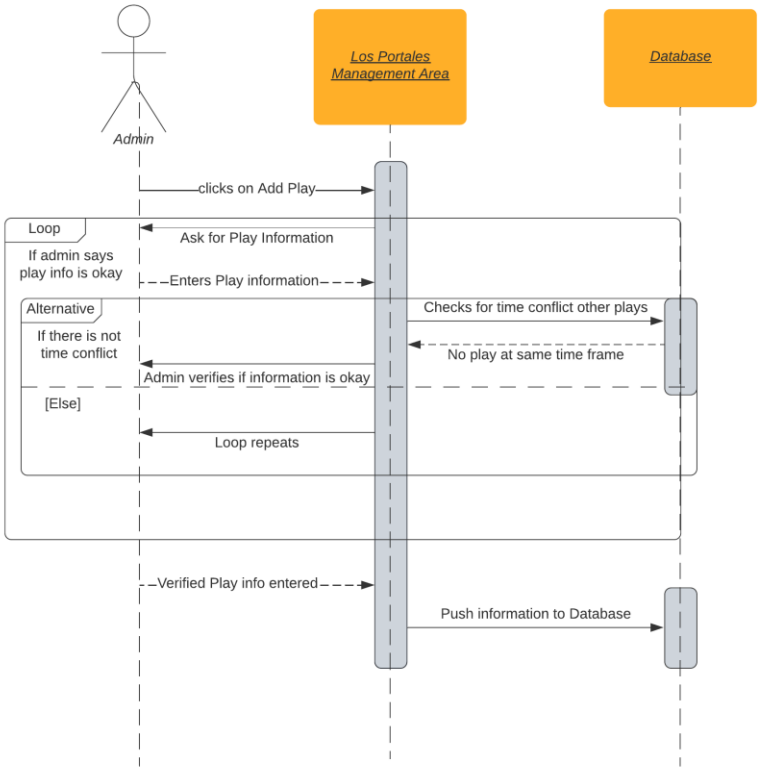
4.2.1 Customer Sign-In



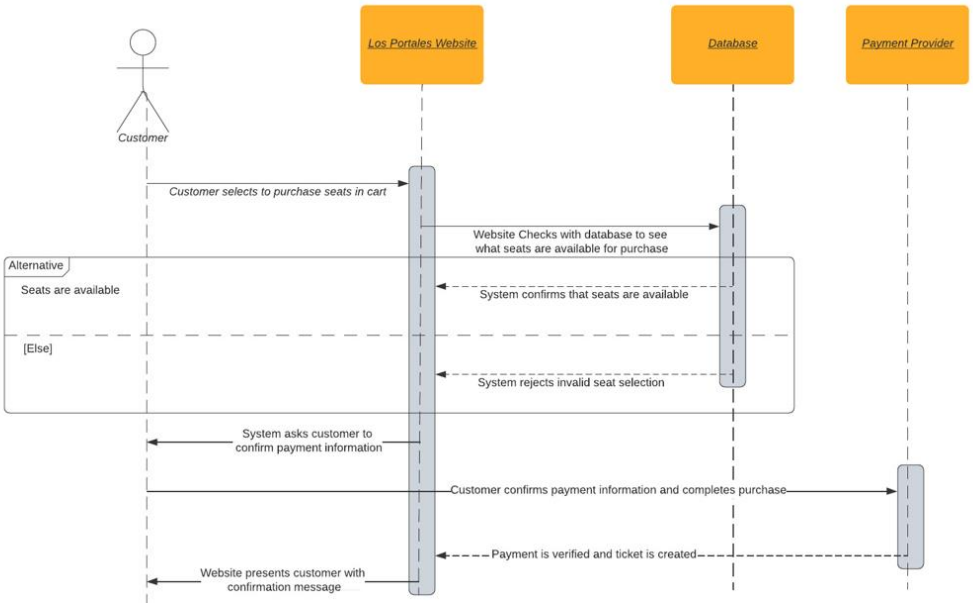
4.2.2 Admin Sign-In



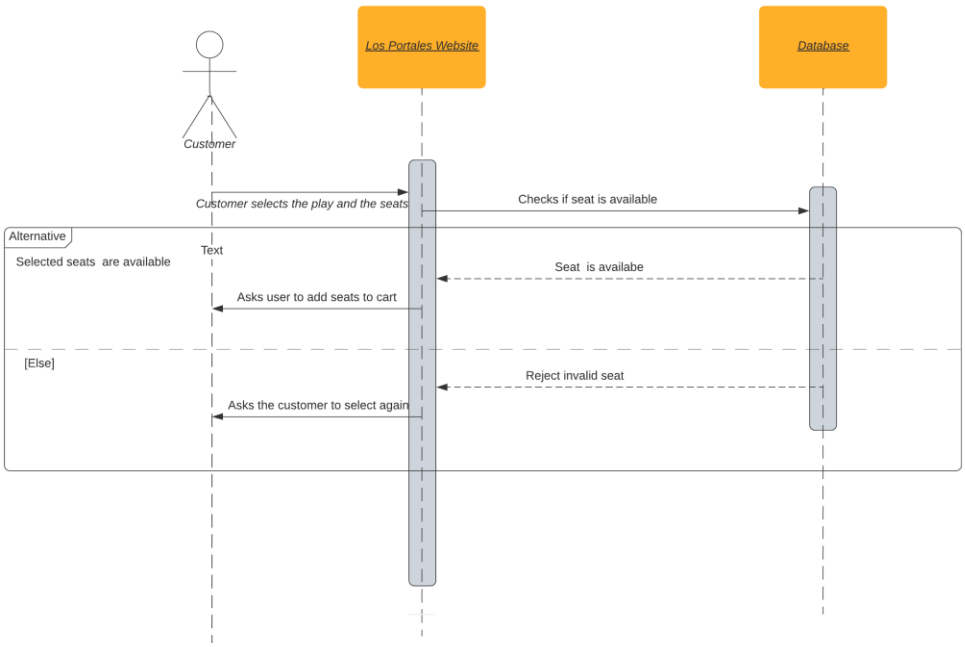
4.2.3 Add Play



4.2.4 Checkout



4.2.5 Select Seats



4.3 Registration/ Sign In/ Sign Out (Customer)

4.3.1 Description and Priority

The system requires a registration function for customers, so they can register into the system and log-in to their accounts to buy tickets.

4.3.2 Stimulus/Response Sequences

Stimulus: Customer clicks on register

Response: The system takes them to the registration page

Stimulus: Customer inputs their information and register to the system

Response: The system sends a confirmation email to their address

Stimulus: The user logins with their email and password

Response: The system grants them the ability to sign in with their newly created account.

Stimulus: Customer clicks on sign in

Response: The system takes them to the sign in page and asks for credentials

Stimulus: Customer enters their credentials and clicks on the sign in button

Response: The system logs them into the website.

Stimulus: Customer clicks on sign off

Response: The system logs them off from the website.

4.3.3 Functional Requirements

- The system shall have a link to the register page at the homepage.
- The system shall ask the user for its personal information such as name, age, password for their theater account, billing address, telephone and email address.
- The system shall ask the user to confirm their password by asking for it twice
- The system shall verify that the user password is safe and valid, as it must contain the following:
    - At least 8 characters
    - A mixture of both uppercase and lowercase letters
    - At least one number
    - Exclusion of any character that may compromise the system.
- The system shall verify the e-mail is valid and is not already in the system.
- The system shall send a confirmation e-mail so the user can confirm their e-email (tentative)
- The system shall allow customers to sign in into their accounts once they have confirmed their email.
- The system shall allow the customers to view plays, purchase tickets, and check their tickets once they are logged in.
- The system shall allow customers to sign off from their accounts if they wish to.

4.4 View Plays (Customer)

4.4.1 Description and Priority

The system requires an interface where the customer can view the seats that are available for a specific showing of a play.

4.4.2 Stimulus/Response Sequences

Stimulus: In the homepage the customer clicks the play carousel arrow to browse the upcoming plays.

Response: The carrousel starts to move

Stimulus: Customer clicks on a play

Response: The system shows more information about the selected play

Stimulus: Customer clicks on buy seats

Response: The system takes them to the graphical seat plan

4.4.3 Functional Requirements

- The system shall allow us to display all the available upcoming plays in the carrousel
- The system shall display in the graphical seat plan the free seats and the sold seats.

4.5 Add Seats to Cart (Customer)

4.5.1 Description and Priority

The system requires a function so the customer can add seats selected while viewing play availability to a purchase cart.

4.5.2 Stimulus/Response Sequences

Stimulus: Customer selects the available seats they wish to purchase

Response: The system highlights the customer's selection

Stimulus: Customer clicks the button the add selected seats to cart

Response: The system adds the selected seats to the customer's cart

4.5.3 Functional Requirements

- The system shall allow the customer to select multiple seats for each play
- The system shall allow the customer to only select seats that have not been sold

4.6 View Cart (Customer)

4.6.1 Description and Priority

The system requires a function for customers where they can view their cart and the tickets they have selected from the plays.

4.6.2 Stimulus/Response Sequences

Stimulus: Customer clicks on their cart

Response: The system takes them to the full view of all of their previously selected but unpurchased tickets

4.6.3 Functional Requirements

- The system shall show the customer all of their selected tickets across multiple plays if needed.
- The system shall show the customer the total cost for all their tickets

4.7 Checkout (Customer)

4.7.1 Description and Priority

The system requires a function for customers to purchase seats they have added to their cart.

4.7.2 Stimulus/Response Sequences

Stimulus: Customer clicks on checkout link while viewing their cart

Response: The system asks the customer to confirm the purchase they wish to make

Stimulus: Customer chooses to confirm their purchase

Response: The system verifies their payment information and issues tickets for the selected seats

4.7.3 Functional Requirements

- The system shall validate the customer's payment before issuing tickets

4.8 View Tickets (Customer)

4.8.1 Description and Priority

The system requires a function where the customer can view all of their previously purchased tickets and print copies if needed.

4.8.2 Stimulus/Response Sequences

Stimulus: Customer clicks a link to view their previous purchases

Response: The system takes them to a list of their previous purchases

Stimulus: Customer clicks to view a specific seat they have purchased

Response: The system presents them with a receipt for that purchase and an option to print a copy of their ticket

Stimulus: Customer clicks to print a copy of their ticket

Response: The system generates a page for the client to print

4.8.3 Functional Requirements

- The system shall keep a record of all of the customer's previous purchases
- The system shall allow the client to print their purchased tickets if they wish to

4.9 Sign-in/Sign-out (Admin)

4.9.1 Description and Priority

The system requires a sign in and sign out function for admin, so they can sign in and sign off from the management area.

4.9.2 Stimulus/Response Sequences

Stimulus: In the management area, the admin clicks on in sign in

Response: The system takes them into the sign in page for the admin

Stimulus: Admin enters their credentials and clicks the sign in button

Response: The system grants them access to the management area functions.

Stimulus: Admin clicks on the sign out button.

Response: The system logs them out from the management area.

4.9.3 Functional Requirements

- The system shall only accept the special admin credentials to sign in into the management area

4.10 Generate Report (Admin)

4.10.1 Description and Priority

The system requires a function where the administrator can generate reports and view what seats have been sold for each play.

4.10.2 Stimulus/Response Sequences

Stimulus: Admin clicks on generate report in the management area

Response: A system pop-up appears asking for report criteria

Stimulus: Admin selects their criteria and clicks on generate report

Response: The report is displayed

4.10.3 Functional Requirements

- The system shall allow the admin to generate reports based on specific play and date.

4.11 Add Play (Admin)

4.11.1 Description and Priority

The system requires a function where the administrator can generate reports and view what seats have been sold for each play.

4.11.2 Stimulus/Response Sequences

Stimulus: Admin chooses that they would like to add a play to the site

Response: The system asks the admin for the name, dates, times, and prices for the new play

Stimulus: Admin chooses that they would like to add a play to the site

Response: The system asks the admin for the name, dates, times, and prices for the new play

Stimulus: Admin enters all of the necessary information for the new play

Response: The system asks the admin to confirm the information that they have entered

Stimulus: Admin confirms the information is correct

Response: The system adds the play to the client interface for purchases

4.11.3 Functional Requirements

- The system shall present the admin with a basic pricing plan for the seats in the theater
- The system shall allow the admin to alter the pricing of any seat if they desire

- The system shall confirm with the admin all of the information they have entered

5. Other Nonfunctional Requirements

5.1 Acceptable payment methods

- The system shall only accept payment from Visa and Mastercard credit/debit cards.

5.2 Security Requirements

5.2.1 Data

- The system shall use Secure Sockets Layer (SSL) technology to protect the transactions between the web site and its users.
- The system shall never store and leave any confidential information in any cookies.
- The customer's browser shall never display a customer's password as it should be hidden behind asterisks for security purposes.
- The system shall never display for security purposes the password of the clients in the back-end database.