

Final Report

For

Portales Theater Reservations System

Written by: Walker Monaghan, Vern Watkins, Zach Dowding

Date: 05/11/2022

TABLE OF CONTENTS

1.0	GENERAL INFORMATION	1-3
1.1	Purpose	1-3
1.2	Scope	1-3
1.3	System Overview	1-3
1.4	Product Functions	1-5
1.5	System Class Structure	1-7
1.6	System Components	1-8
1.61	Component Decomposition Descriptions	1-8
1.7	Development Plan – Gantt Chart.....	1-9
2.0	TEST ANALYSIS.....	2-9
2.1	Test plan	2-9
2.11	Scope	2-9
2.12	Testing Approach	2-10
2.13	Test Schedule	2-10
2.14	Problem Reporting and Data Recording	2-10
2.2	Identification of Tests.....	2-10
	Registration Phase	2-10
	Browse Phase	2-10
	Reservation Phase	2-11
	Checkout Phase	2-11
	Admin Functions Phase.....	2-11
2.3	Test Results	2-12
	Registration Phase	2-12
	Customer Registration.....	2-12
	Verify Login.....	2-13
	Browse Phase.....	2-14
	Browse	2-14
	Reservation Phase.....	2-15
	Seat Selection.....	2-15
	Shopping Cart Management	2-16
	Checkout Phase.....	2-17
	Cart Checkout.....	2-17
	Administrator Functions Phase.....	2-18
	Admin - Login.....	2-18
	Admin - Add-Play	2-19
	Admin – Establish Seat Pricing (New Play Creation)	2-20
	Admin- Adjust Seat Pricing	2-21
	Admin – Report Generation	2-22
3.0	summary and conclusions	3-23
3.1	Demonstrated Capability	3-23
3.2	System Deficiencies.....	3-23
3.3	Software Quality	3-23
3.5	System Acceptance	3-24

1.0 GENERAL INFORMATION

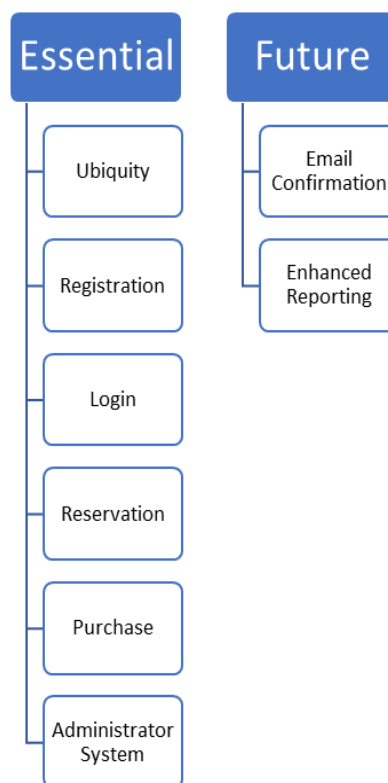
1.1 Purpose

The purpose of this report is to summarize the progress on our ongoing development efforts for the Los Portales Theater Reservations system. The content herein is intended for our project stakeholders and engineering team.

1.2 Scope

The scope for this project is to provide the requested and required booking/reservation features in an always available online website. Up to and including browsing, review, selection, purchasing, and receipt records for customers as well as product scheduling and reporting for client-administrator users.

Figure 1: Scope of System Requirements



1.3 System Overview

The purpose of our software is to, through an online system, sell seats for different plays at the “Los Portales” theatre. The system is accessible anywhere, anytime, and on all major consumer devices. This system is designed to meet customer and administrator needs in effectively and efficiently purchasing specific seats to individual theater showings. This system should empower

the system administrator to quickly modify information for shows (add/remove showings, change seat prices, change available seats).

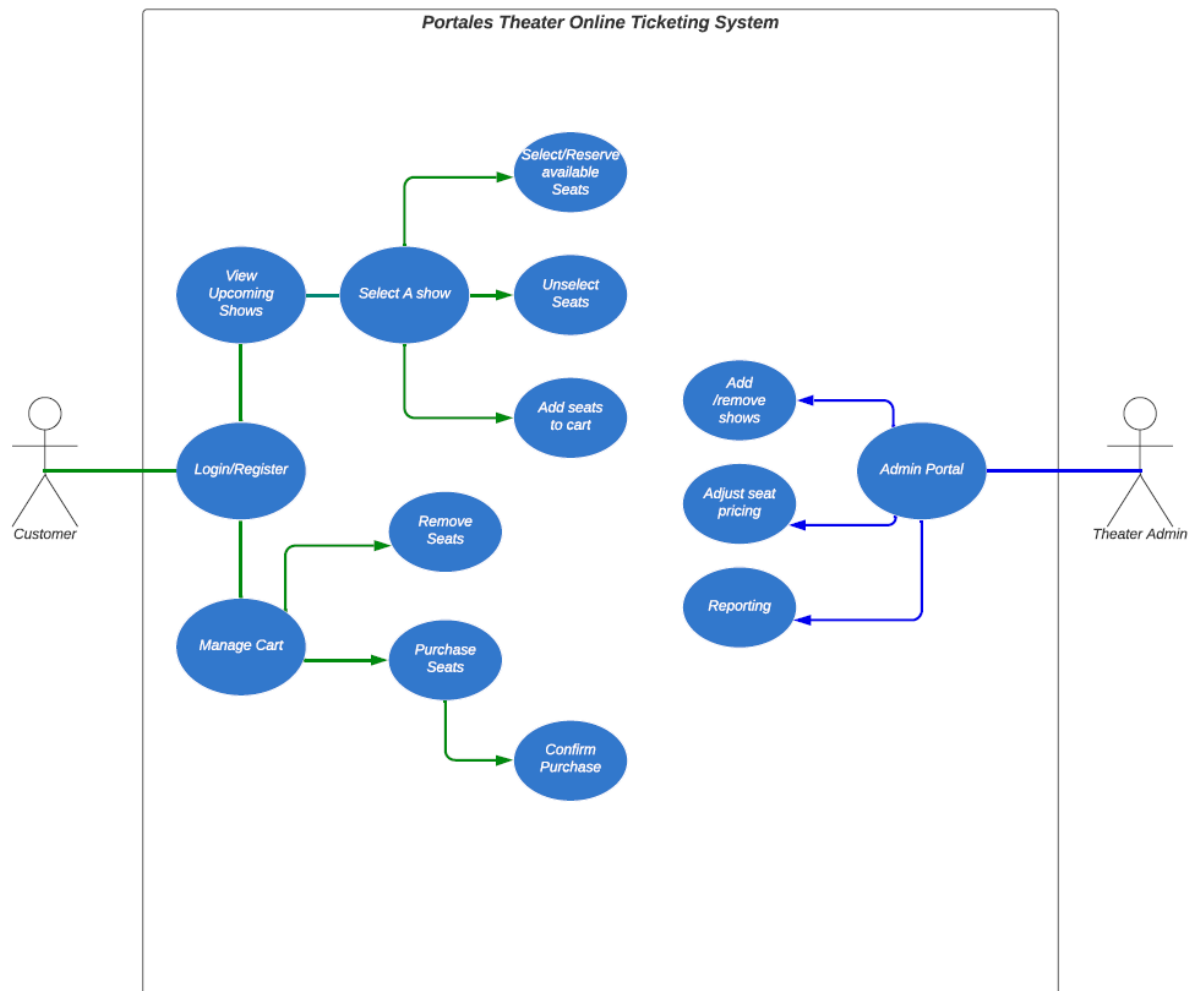
The major design considerations for this proposed system are accessibility (anywhere and anytime), ease-of-use, and transaction accuracy.

This product is a collection of components intended to provide a comprehensive, reliable, and optimized solution to our client, the Portales Theatre. As the flagship undertaking of this development team, we have built custom components to deliver upon product requirements.

A comprehensive list of use-case diagrams is provided via this link:

https://github.com/SESpr22TeamWMD/CS472repository/tree/main/stage4/Use_Case_Diagrams

Figure 2: Composite use-case of this software solution:



1.4 Product Functions

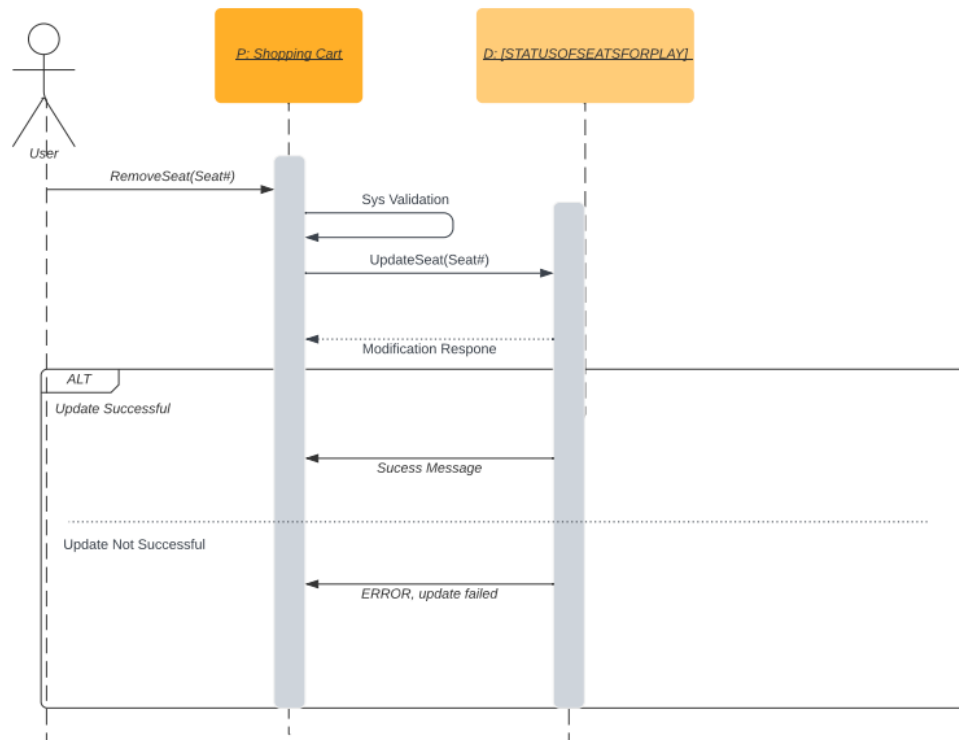
- **Customer Functions**

- View upcoming plays (no login required)
 - Play Title, Dates and Times. Play description.
- Log In as an existing customer
OR
- Register as a new customer – allowing them to log in.
 - View available/unavailable seats per showing.
 - Select seats, with temporary reservation until payment.
 - Unselect seats, releasing reservation.
 - Add selected seats to shopping cart.
 - Purchase seats with a credit card.
 - View total for all seats for all plays
 - Opportunity to unselect previously selected seats.
 - Payment and confirmation.

- **Administrator Functions**

- “Log in as Administrator to access the Admin. Actions Page.
 - Adding plays and their schedules (Days and times) and description.
 - Deleting plays
 - Ability to adjust pricing for all seats for all plays
 - Generate a report
 - See how many seats have been sold for a specific play.

- **Interaction Diagrams**
 - **Example - Payment Components**
Use Case - Customer – Manage Cart
Figure 3 - Remove Seats

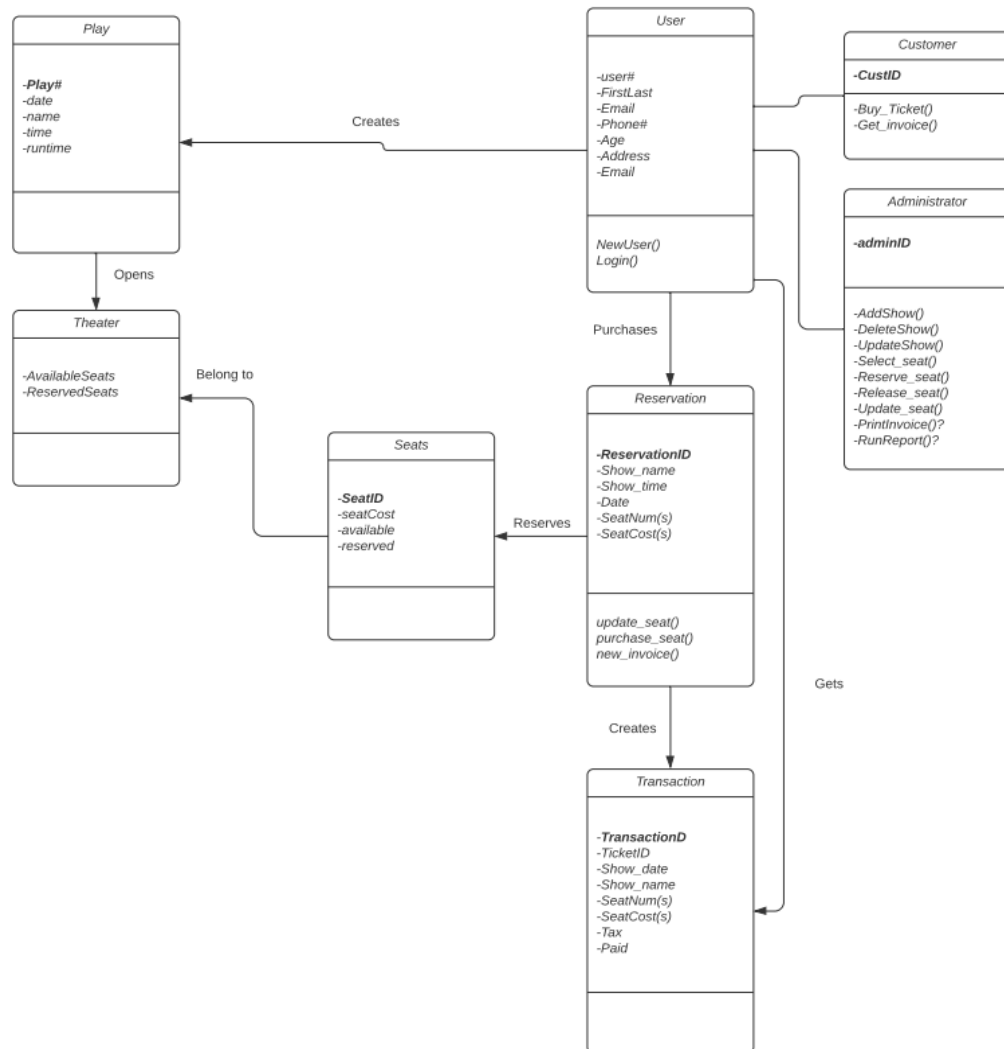


As to not crowd this document, a comprehensive list of Interaction/Sequence Diagrams can be found here:

<https://github.com/SESpr22TeamWMD/CS472repository/tree/main/stage4/Sequence%20Diagrams>

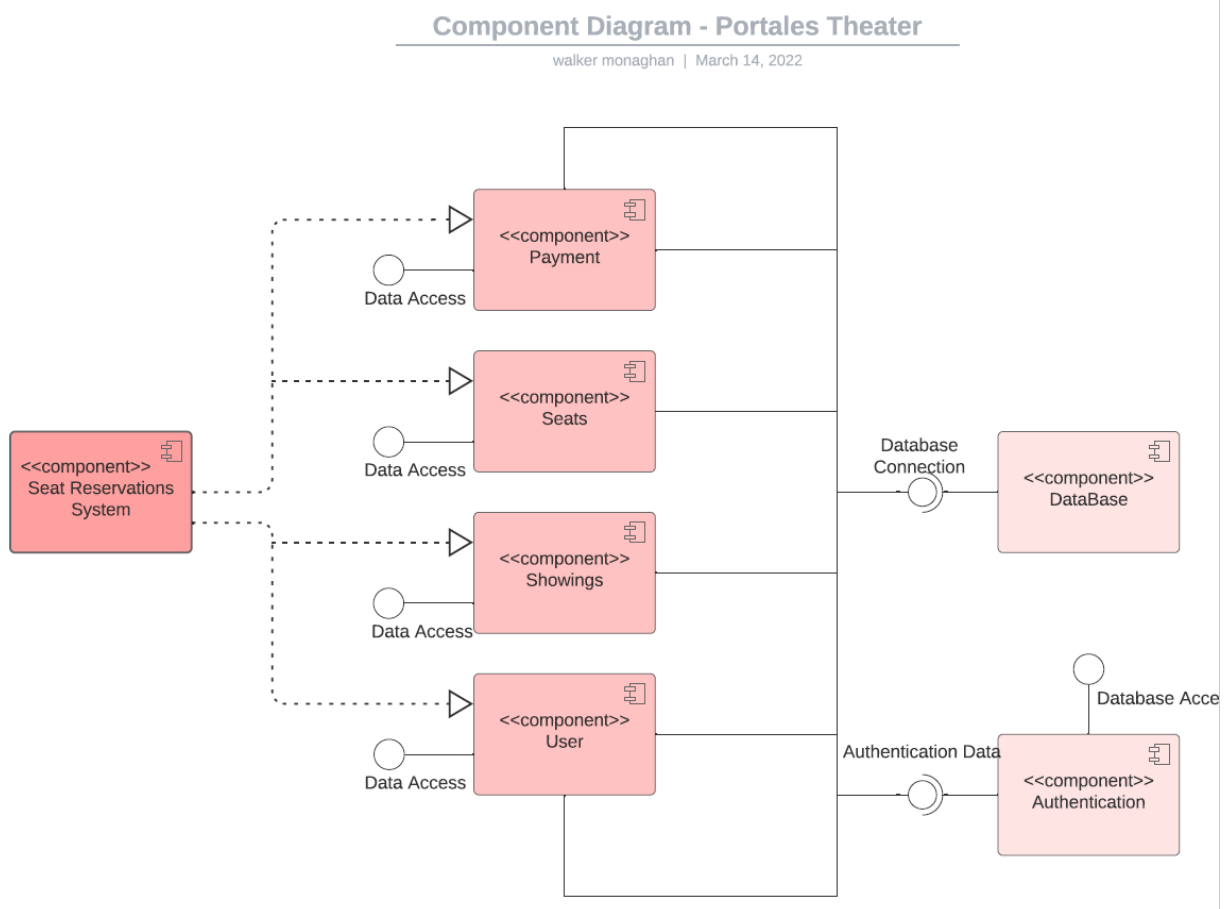
1.5 System Class Structure

Figure 4: Class Diagram



1.6 System Components

Figure 5: Component Diagram



1.61 Component Decomposition Descriptions

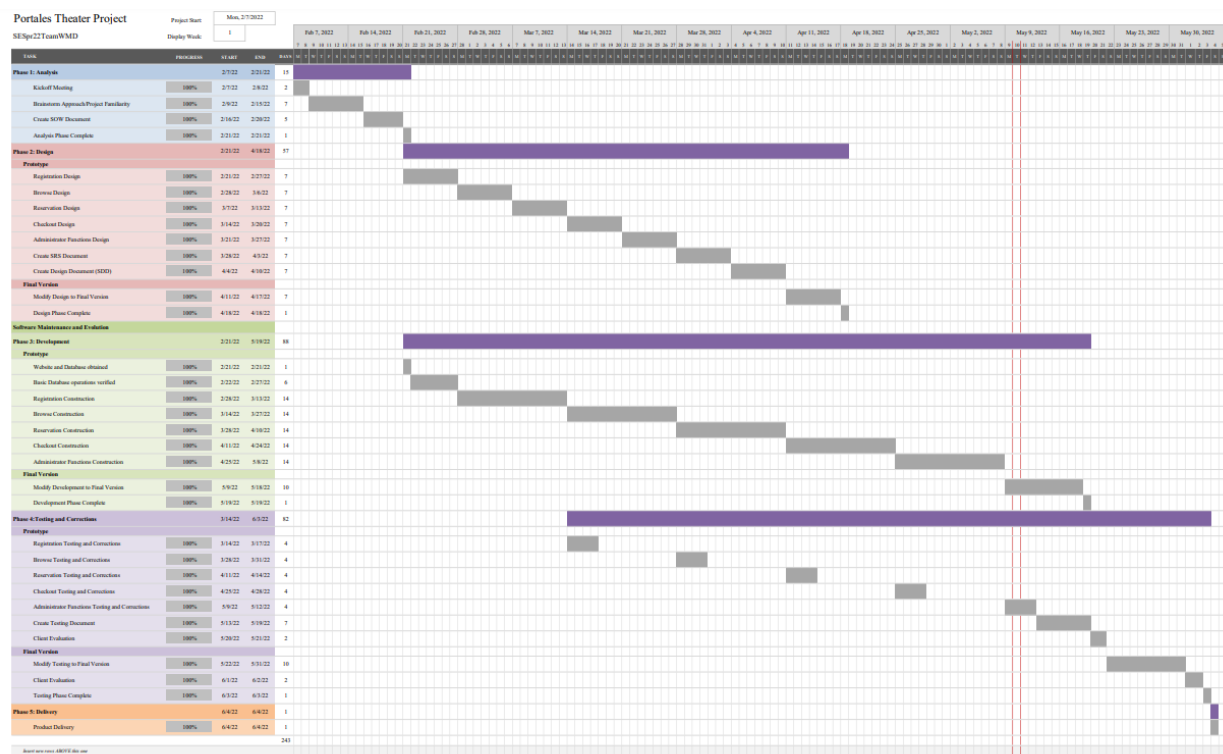
Component	Description
Seat Reservation System	This broader component houses the below subcomponents. The goal of this system is to allow users to select, reserve, and purchase seats to theater showings. This same system will allow administrators the ability to modify showings, seat pricing/availability, and to run reports on seating status.
Showings	This component controls open and available showings, which can be treated as unique events tied to a day and time. Each showing has a set of available seats at prices dictated by an administrator.
Seats	The Seats component accounts for unique seat availability, selection and de-selection, seat price, and purchased/reserved seats.
User	The user component addresses user type, customer, or administrator, as well as granting access to certain controls and information within the system as appropriate to their type.
Payment	The payment system receives, verifies, and records seat purchases.

Database	Collection of system databases with which many other system components will have access to based on method and authentication level.
Authentication	Authentication component to verify accurate User credentials, granting access to appropriate components within the overall Seat Reservation System.

1.7 Development Plan – Gantt Chart

A higher resolution of the Gantt Chart can be found for download here:

https://github.com/SESpr22TeamWMD/CS472repository/blob/main/stage4/Gantt_Final_Stage4.pdf



2.0 TEST ANALYSIS

2.1 Test plan

2.1.1 Scope

This Test Plan applies to the integration and system tests that will be conducted on our website. Our website tests involve the 5 main components of the following: Registration, Browse, Reservation, Checkout and Administrator. This plan will be testing all of our functional requirements, all of which are specified in section 2.7, in a defined testing environment (see 2.6).

2.12 Testing Approach

This team will be executing functional testing starting with Unit testing, moving to integration testing, followed by System testing, and finally acceptance testing. The goal of this approach is to ensure our components operate within success constraints to provide a highly functional product to our client. Team members work together to test our software in multiple environments as dictated by the requirements of our solution. Errors in functionality will be recorded with detail as to aid rapid solution-deployment of new code to the software. These tests will be performed at the component level and integration level.

2.13 Test Schedule

Our testing schedule will be planned as the following:

- a. Registration Testing – 3/14 to 3/17
- b. Browse Testing – 3/28 to 3/31
- c. Reservation Testing – 4/11 to 4/14
- d. Checkout Testing – 4/25 to 4/28
- e. Administrator Testing – 5/9 to 5/12

2.14 Problem Reporting and Data Recording

Problem reporting will be tracked through individual Test Case forms and results. The logs will be escalated to the development team for review and resolution. When a resolution has been logged by the development team the testing team will rigorously re-run the Test Case for that functionality.

2.2 Identification of Tests

Registration Phase

<u>Page Responsible</u>	<u>Activity Type</u>	<u>Objective</u>	<u>Test Case ID #</u>
Welcome	Login	Customer login with valid username and password.	Wel-001
Registration	Registration	New customer clicks to register, moved to registration page. Successful registration returns Welcome page for Login action.	Reg-001

Browse Phase

<u>Page Responsible</u>	<u>Activity Type</u>	<u>Objective</u>	<u>Test Case ID #</u>
Welcome	Preview Upcoming Shows	Customer selects a play to view available seats for that play.	Wel-002

Reservation Phase

<u>Page Responsible</u>	<u>Activity Type</u>	<u>Objective</u>	<u>Test Case ID #</u>
Theater	Seat Selection	Customer views available seats for a play and can select them or can unselect previously selected seats.	T-001
Shopping Cart	Cart Adjustments	Lists seats that were selected with their prices and the total price. Customer may unselect seats. May proceed to “checkout” or return to other shows to add additional seats for other plays”	SC-001

Checkout Phase

<u>Page Responsible</u>	<u>Activity Type</u>	<u>Objective</u>	<u>Test Case ID #</u>
Shopping Cart	Checkout	Customer purchases seat reservations with credit card and is informed if the sale was processed.	SC-002

Admin Functions Phase

<u>Page Responsible</u>	<u>Activity Type</u>	<u>Objective</u>	<u>Test Case ID#</u>
Welcome page	Login	Admin login with valid username and password	A-001
Admin Play Page	Add plays	Admin is able to add upcoming plays with valid information. Moves to seat pricing for that play.	A-002
Admin Seat Page	Establish seat pricing	Allows admin to adjust seat pricing for added show.	A-003
Admin Seat Page	Adjust seat pricing	Admin is able to adjust the pricing on seats in any upcoming shows (as selected)	A-004
Admin Report Page	Report generation	Admin is able to generate a report of seats sold given input filters.	A-005

2.3 Test Results

Registration Phase

Customer Registration

Project Name: Los Portales Theatre

Test Case ID: Reg-001

Test Priority (Low/Medium/High): High

Module Name: Registration

Test Title: Customer Registration

Description: Test customer registration

Test Designed by: Walker Monaghan

Test Designed date: 4/17/2022

Test Executed by: Zachary Dowding

Test Execution date: 5/9

Test Environment: Windows 10 PC, Chrome
101.0.4951.54

Pre-conditions: n/a

Dependencies: must not duplicate currently registered username

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
1	Navigate to registration page		Registration page displays	Page displays	Pass	
2	Provide first name	Alphabetic	Accepts entry of Alphabetic	Entry works	Pass	
3	Provide last name	Alphabetic	Accepts entry of Alphabetic	Entry works	Pass	
4	Provide address (street)	Ex. ### Street Name	Accepts entry of address	Entry works	Pass	
5	Provide City	Ex: Portales	Accepts entry of Portales	Entry works	Pass	
6	Provide State	xx	Allow entry of New Mexico	Entry works	Pass	Specify if it is initials or full state name
7	Provide Zip Code	xxxxx	Allow zipcode of 88130	Entry works	Pass	
8	Provide valid telephone	(xxx)xxx-xxxx	Allow entry of telephone	Entry works	Pass	
9	Provide Email	alphanumeric@url	Allow entry of Email	Entry works	Pass	
10	Provide age	Numerical <120	Allows entry of age	Entry works	Pass	
12	Click Register Button		Customer inputs are accepted, and new customer is created	Shows created account	Pass	
			OR – validation error message displayed			

Post-conditions: Customer registration successful, navigate to Login info page to set up login.

Verify Login

Project Name: Los Portales Theatre

Test Case ID: Wel-001

Test Designed by: Walker Monaghan

Test Priority (Low/Medium/High): High

Test Designed date: 4/17/2022

Module Name: Login

Test Executed by: Zachary Dowding

Test Title: Verify Login

Test Execution date: 5/9

Description: Test the Customer Login Page

Test Environment: Windows 10 PC, Chrome
101.0.4951.54

Pre-conditions: Customer has valid Username and Password

Dependencies: n/a

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
1	Navigate to welcome page		Welcome page displays		Pass	
2	Provide Valid Username	Example: johndoe@email.com	Enter email appears	Email was accepted	Pass	
3	Provide Valid Password	Password: 1234	Allows entry of password	Password was accepted	Pass	
4	Click login button		Customer inputs are successfully validated	No info is displayed, no confirmation.	Fail	
5			Or – Validation error displayed	No error displayed	Fail	

Post-conditions: User is validated and able to proceed to website navigation.

NOT MET

Browse Phase

Browse

Project Name: Los Portales Theatre - **UNTESTABLE**

Test Case ID: Wel-002

Test Designed by: Walker Monaghan

Test Priority (Low/Medium/High): Medium

Test Designed date: 4/17/2022

Module Name: Browse

Test Executed by:

Test Title: Welcome Screen Preview

Test Execution date:

Description: Test that welcome screen accurately displays upcoming shows

Test Environment:

Pre-conditions: Validated User session is active

Dependencies: one or more shows have been added by admin

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
1	Navigate to welcome screen	n/a	One or more upcoming shows with image, title, and date listed			
2	Click to view	n/a	Customer clicks upcoming showing which navigates to theater page			
3						
4						
5						

Post-conditions: Customer can select a show to navigate to that theater page

Reservation Phase

Seat Selection

Project Name: Los Portales Theatre - UNTESTABLE

Test Case ID: T-001

Test Designed by: Walker Monaghan

Test Priority (Low/Medium/High): High

Test Designed date: 4/17/2022

Module Name: Reservation

Test Executed by:

Test Title: Seat Selection

Test Execution date:

Description: Testing functionality of seat management in theatre page

Test Environment:

Pre-conditions: Validated User Session is Active

Dependencies: n/a

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
1	Navigate to individual theatre page	n/a	Webpage displayed for selected play, showing available and reserved seats.			
2	Select seat	n/a	Clicked seat selected and changes color to green. Sys generates an "[seat#] added to cart" message			
3	Unselect seat	n/a	Clicked seat unselected and changes color to grey, Sys generates an "[Seat#] removed from cart" message			
4	Proceed to checkout	n/a	Navigate to shopping cart			
5						

Post-conditions: Navigation proceeds to shopping cart page, selected seats are held

Shopping Cart Management

Project Name: Los Portales Theatre - UNTESTABLE

Test Case ID: SC-001

Test Designed by: Walker Monaghan

Test Priority (Low/Medium/High): Medium

Test Designed date: 4/17/2022

Module Name: Reservation

Test Executed by:

Test Title: Shopping Cart Management

Test Execution date:

Description: Test shopping cart functionality

Test Environment:

Pre-conditions: Valid user session is active

Dependencies: Seat holds from theatre page(s)

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
1	Navigate to Shopping Cart page		Page renders successfully, showing seat selection(s).			
2	Remove quantity from cart		Requested quantity of seat(s) are removed from Customer Cart.			
3	Navigate to Checkout Page		Customer is navigated to Checkout page successfully			
4			Or If cart is empty: sys output message			
5			Or Clicks to continue shopping			

Post-conditions: Navigation to Checkout Page

Checkout Phase

Cart Checkout

Project Name: Los Portales Theatre - **UNTESTABLE**

Test Case ID: SC-002

Test Designed by: Walker Monaghan

Test Priority (Low/Medium/High): Medium

Test Designed date: 04/17/2022

Module Name: Checkout

Test Executed by:

Test Title: Cart Checkout

Test Execution date:

Description: Testing for shopping cart -
Checkout- functionality

Test Environment:

Pre-conditions: Valid User Session Active

Dependencies: Seat holds from theatre page(s)

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
1	Navigate to Checkout Page		Accurate display of checkout page			
2	Provide first name	Alphabetic				
3	Provide last name	Alphabetic				
4	Provide address (street)	Ex. ### Street Name				
5	Provide City	Ex: Portales				
6	Provide State	xx				
7	Provide Zip Code	xxxxx				
8	Provide valid telephone	(xxx)xxx-xxxx				
9	Provide Email	alphanumeric@url				
10	Provide age	Numerical <120				
11	Provide CC#	Numerical				
12	Provide expiration date	mm/yr ex: 01/31				
13	Provide CCV	XXX				
14	Submit payment		Valid inputs are submitted, and transaction is processed			
			OR Sys err. Message for invalid inputs			

Post-conditions: With successful payment processing system navigates to receipt/Tickets page.

Administrator Functions Phase

Admin - Login

Project Name: Los Portales Theatre - **UNTESTABLE**

Test Case ID: A-001

Test Designed by: Walker Monaghan

Test Priority (Low/Medium/High): High

Test Designed date: 4/17/2022

Module Name: Admin Functions

Test Executed by:

Test Title: Admin Login

Test Execution date:

Description: Testing for admin login validation **Test Environment:**

Pre-conditions: Admin credentials exist within the system

Dependencies: n/a

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
1	Navigate to admin page		Admin page displays with login inputs			
2	Input Username	Ex: admin@lpt.com				
3	Input Password	Ex: 1234				
4	Click to Login		Credentials validated			
5			OR Sys error output: invalid credentials			

Post-conditions: Navigate to admin page

Admin - Add-Play

Project Name: Los Portales Theatre - UNTESTABLE

Test Case ID: A-002

Test Designed by: Walker Monaghan

Test Priority (Low/Medium/High): High

Test Designed date: 4/17/2022

Module Name: Admin Functions

Test Executed by:

Test Title: Admin add play

Test Execution date:

Description: Test admin function to add a new play

Test Environment:

Pre-conditions: Valid admin session is active

Dependencies: n/a

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
1	Navigate to add play page		Add play page displayed with blank input form			
2	Input Name	Ex: Beowulf				
3	Input Date	mm/dd/yy				
4	Input Description	Alphanumeric				
5	Submit		New play inputs accepted, push to seat management page			

Post-conditions: Successful input navigates to seat management for this play

Admin – Establish Seat Pricing (New Play Creation)

Project Name: Los Portales Theatre - UNTESTABLE

Test Case ID: A-003

Test Designed by: Walker Monaghan

Test Priority (Low/Medium/High): High

Test Designed date: 4/17/2022

Module Name: Admin Functions

Test Executed by:

Test Title: Establish Seat Pricing for New play

Test Execution date:

Description: Test functionality of establishing seat pricing for a newly created play.

Test Environment:

Pre-conditions: Valid Admin session is active

Dependencies: inputs from previous add-form page.

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
1	Navigate to establish seat pricing		Displays seat pricing page for newly created play			
2	Adjust price		Admin is able to select a seat or seats and set pricing for those selected seats.			
3	Publish new Show		Admin clicks to publish the new shows and details to customer view.			
4						
5						

Post-conditions: Navigate back to Admin Controls Page

Admin- Adjust Seat Pricing

Project Name: Los Portales Theatre - UNTESTABLE

Test Case ID: A-004

Test Designed by: Walker Monaghan

Test Priority (Low/Medium/High): Medium

Test Designed date: 4/17/2022

Module Name: Admin Functions

Test Executed by:

Test Title: Adjust Seat Pricing

Test Execution date:

Description: Test admin function to adjust pricing of already published shows

Test Environment:

Pre-conditions: Valid admin session is active

Dependencies:

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
1	Navigate to edit Adjust Pricing page		Shows accurate Adjust Pricing Page with drop down menu for upcoming shows			
2	Select show		Admin is able to select upcoming show, the seating for that show is shown			
3	Adjust price		Admin is able to select unreserved seats and adjust pricing of those selected seats			
4	Click to publish changes		Changes to seat pricing are pushed to live.			
5						

Post-conditions: Admin is able to repeat this step with other shows or click to return to Admin Controls Page

Admin – Report Generation

Project Name: Los Portales Theatre - UNTESTABLE

Test Case ID: A-005

Test Designed by: Walker Monaghan

Test Priority (Low/Medium/High): Medium

Test Designed date: 4/17/2022

Module Name: Admin Functions

Test Executed by:

Test Title: Report Generation

Test Execution date:

Description: Test admin reporting functions

Test Environment:

Pre-conditions: Valid Admin session is active

Dependencies:

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
1	Navigate to Reporting Page		Reporting page shown with filters			
2	Input Date Range	mm/dd/yy-mm/dd/yy				
3	Optional Select Show	Title				
4	Run Report		Sys. Generates and displays an output of the requested data in table format.			
5						

Post-conditions: Admin can continue to run and review reports or choose to navigate back to Admin Controls Page.

3.0 SUMMARY AND CONCLUSIONS

3.1 Demonstrated Capability

Currently our system has begun to display the capabilities outlined in our clients' requirements. The planning is in place and the development and testing continues to ensure we deliver a complete and comprehensive solution to Los Portales Theater.

At this point the development process successful customer registration can be demonstrated, speaking to progress in the core architecture of the website and our ability to tie together the front and back ends of the system.

3.2 System Deficiencies

Deficiencies below are anticipated with our current development phase of this solution. These functions are listed in order at which they will be developed and addressed. In an effort to streamline the development and delivery of this product, newly developed functions will be immediately tested by our testing team with amendments quickly implemented as that feedback comes through.

Future Functionality:

- Browse
- Seat Selection
- Shopping Cart Management
- Cart Checkout
- Admin - login
- Admin - Add Play
- Admin - Establish Seat Pricing
- Admin - Report Generation

3.3 Software Quality

For evaluating the software quality of our project, the following areas are considered: Correctness, Functionality, Reliability (related to there being software defects), Usability, Testability, and Efficiency. Our presentations for 2.2 Identification of Tests and 2.3 Test Results evaluates the area for Correctness, Functionality, Reliability and Testability.

Also concerning Correctness is determining if there would be problems from more than one customer selecting seats for the same plays. This was not addressed in the instructions from the client, so to remedy that, it was found that each customer's shopping cart should interact with a table that contains which seats have been paid for. Using that relation, if two or more customers attempt to pay for the same seat or seats from their shopping carts, the customer who has paid for the same seat or seats has priority, where appropriate messages are displayed and costs are adjusted for the other customer/s.

Concerning Usability, clear instructions are both on the each of our website's pages and in the User Manual, and for links on the webpages to work properly, our testing includes tests for that as well. Misuse of the system is prevented by registered customers to use their correct login information in order to view and select seats for plays, and for administrators to also use their correct login information to access the administrator page.

Concerning Efficiency, a fast MySQL database is used to coordinate with the controls on the webpages.

Also concerning Functionality, is that we use a verified dependable hosting provider to host our website.

3.5 System Acceptance

At this stage we ask our Stakeholders to accept our SOW, SRS, SDD, and our finished diagrams.

At our next acceptance meeting we will ask stakeholders to accept the System Prototype, followed shortly by the Final Version.

The System is not prepared for acceptance at this time.