Requirements Specification Document
SureLock Storage Management System

Golf Island Software

March 12th, 2019

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Revision History

Name	Date	Reason for Changes	Version
Entire Team (Andy Smith, Eric Wiebe, Jared Larter, Jeremy Megyesi, Mona Soleimanieh, Rhett Devlin, Ryan Russell, Subah Mehrotra)	Feb. 28th, 2019	Revisions from annotated RD1.1 and instructor feedback	0.8
Entire Team	Mar. 12th, 2019	Creation of section 7 and addition of models	0.9

1 Introduction

1.1 Purpose

This document details the requirements for the SureLock Storage Management System Version 1.0. SureLock's current system makes it difficult to track client information such as payment status and unit location. SureLock Storage seeks to improve company organization and management by making client and storage unit information easier to access, read, and parse. This document pertains to the entirety of the storage management system.

1.2 Project Scope

SureLock Storage's goal is to increase organization by implementing a software system to store and retrieve client information and storage unit status. The information will be searchable and will include client full name, currently rented storage units, current balance and fees, as well as storage unit details, including dimensions, rented status, and condition. This information will enhance SureLock's organization by being readily updatable and accessible.

SureLock Storage hopes to increase company management and security by controlling who can edit and view client details. The storage management system will implement Administrator and Staff Member accounts. This will limit the access of the Staff to ensure that client information is secure.

The storage management system will employ four main features: a storage facility information feature, a storage unit information feature, a system searching feature, and an account management feature. The four features will provide users with context of where storage units are located, the details of each unit, and who is renting the unit, in addition to making relevant information easily accessible and searchable.

1.3 Glossary of Terms

[Storage] Units: A locked room used to store the client's personal belongings. The floor space ranges from 4ft x 5ft to 10ft x 20ft.

[Storage] Facility: The property where the storage units are located. Currently, SureLock operates one facility with 200-225 units.

IT Team: A team of individuals trained to manage and troubleshoot the software system at a higher level than regular Staff Members. Each member of the IT Team has an Administrator account.

Client: The customer renting the storage unit from SureLock Storage.

Account: The unique username and password for each employee of SureLock storage. An account is required to access the storage management system. Multiple accounts of each type can be created.

Staff Member: The account type for an employee who will be using the software system. The Staff accounts have limited access to client information.

Administrator: The account type for a manager or member of the IT Team of SureLock Storage who has access to all system features and client information.

Transaction Documents: Documents such as invoices and receipts that are generated manually or automatically as the result of a storage unit payment or owed amount.

1.4 References

[1] SureLock Storage Client Group 1. (2019, Jan. 22). *SureLock Storage.* [Webpage]. Available: https://ansh-projects.github.io/SENG321-websites/client.html#slogan

[2] SureLock Storage Client Group 1. (2019, Jan.). *Storage Management System Development Request for Proposal.* SureLock Storage. Victoria, BC. [Online]. Available: https://ansh-projects.github.io/SENG321-websites/assets/group1_RFP.pdf [Accessed: Jan. 30, 2019].

[3] Microsoft. *Microsoft Excel* [Online]. Redmond, WA: Microsoft, 2018. Available: https://products.office.com/en-ca/excel

[4] Officer of the Information and Privacy Commissioner of Alberta. *PIPA* [Online]. Available: https://www.oipc.ab.ca/legislation/pipa.aspx [Accessed: Feb, 2019].

1.5 Overview

This requirements document contains 7 sections and a table of contents. The document begins by realizing the necessity of a software solution for SureLock Storage. Section 2 describes the

system that needs to be produced, how it will be used, who will use it, and the design constraints. Section 3 details the features and functional requirements of the solution system. Section 4 describes how the system is to interface with SureLock Storage's current systems. Sections 5 and 6 describe the non-functional requirements of the system including performance, efficiency, security, and legal requirements. Section 7 contains all models of the system including data flow diagrams, entity relationship diagrams, and the uses case model.

2 Overall Description

2.1 Product Perspective

The storage management system currently being developed by Golf Island Software is a replacement for SureLock Storage's current unit management system. Currently, SureLock Storage gathers client information through email and uses Microsoft Excel to keep track of data such as method of payment, transaction history, balance, and unit cost. This new software system will assist SureLock Storage in its goals to improve company organization and management. The usage of this system will be exclusively internal to SureLock Storage. Administrators will have full access to the system, while Staff Members will have restricted access credentials.

2.2 Product Features

The storage management system will include four main features: the storage facility information feature, the storage unit information feature, the system searching feature, and the account management feature. The storage facility information features a map of the storage units in the facility. The user will be able to access a unit's information by selecting the unit from the facility map. The storage unit information will include unit details such as the client renting the unit, unit dimensions, and unit cost. Client information will also be viewable from the the storage unit information interface and includes full name, contact information, and current balance. Storage unit information and client information will be editable by Administrators. The searching feature will provide each Staff Member and Administrator with the ability to search through the storage units by unit number, client's full name, client's phone number, and client's email. Lastly, the account management feature ensures each Staff Member and Administrator have unique username and password protected accounts.

2.3 User Classes and Characteristics

The two intended user groups for this system are the Administrators and Staff Members at SureLock Storage. The system will require each user to login with a unique username and a password.

The Administrator account is the highest level account for the storage management system. An Administrator will have the ability to add, remove, and edit unit and client information. Additionally, an Administrator will be able to add new storage units to the system and new storage facility locations, if required in the future.

The Staff Member account will be restricted to accessing unit specific information (such as unit availability) and basic client information (full name, email, and phone number). Staff Members will not be able to access any sensitive client information (transaction documents and account balance). Moreover, Staff Members will not be able to add or edit unit information, but they will be able to add and edit annotations on unit information.

Stakeholders of the system consist of the Administrators and Staff Members of SureLock Storage.

2.4 Operating Environment

The new software system is to be run on the desktop computers at the SureLock Storage office area. The current operating system (OS) used on SureLock's office computers is Windows 7, so the software system must support Windows 7 and any Windows OS later than Windows 7 to account for any new office computers or OS upgrades on current office computers at SureLock Storage.

The current system consists of recording data on a whiteboard and in Microsoft Excel [3] spreadsheets. The new method of data entry will be integrated into the new software system to add new data, although the system should be able to import transaction data from pre-existing spreadsheets files made on Microsoft Excel.

2.5 Design and Implementation Constraints

Security
The new system must be secure; the new system must be accessible to management personnel using an Administrator account specific to each individual, with each account having a corresponding password. Each Staff Member must have access to the new system with their own account and password (specific to each individual), where each account is created and assigned by an Administrator. The new system must not be accessible by any external third parties or clients. A basic username and hashed password are required to provide secure access.

System Access
Each Administrator must have full access to updating and editing client information on the new system. Each Staff Member must be able to view information relating to storage unit availability and add necessary annotations, but must not have access to any sensitive client information such as payment methods and transaction documents.

Transaction Documents
The new system must retain all payment and transaction information dating two years prior.

Expansion
The graphical interface of the new system must include a way to add storage units dynamically to support facility expansion. This expansion includes addition to the current facility as well as any potential new facilities. The system must handle an increased number of devices and simultaneous users to compensate for any facility expansion.

Budget
The total cost of the project (development and implementation of the new system) must be within the given budget of $50,000.

2.6 Assumptions and Dependencies

- Any future development will take place within the province of Alberta; there are currently no plans to expand outside of Alberta.
- Any new computers obtained for office use will have a modern Windows operating system (Windows 7 or later).
- While the system is to record transactions, the system is not required to interact with payments directly. Rather, a transaction may occur separately and any pertinent documents will be uploaded and linked to the corresponding unit by an Administrator.
- A Staff Member is not responsible for adding a new client or updating client information. That is, only an Administrator will add or update client information.

3 System Features

This section details integral system features that will be implemented within a new system for SureLock Storage. The priority for each feature is noted in bold following the description. Each system feature has one or more functional requirements associated with it.

3.1 Storage Facility Information

3.1.1 Description and Priority

Viewing information about the storage facility is the foundation of the system. The location of each unit in the facility will be viewable. In addition, it is of high importance that each unit will be able to have a client assigned to it.

Priority: High

3.1.2 Functional Requirements

REQ-SFI-01: Each Staff Member and Administrator must be able to view a map of the storage facility with the location of each unit.

REQ-SFI-02: Each storage unit on the map must have a link to that unit's information.

REQ-SFI-03: Each storage unit's availability must be identifiable and displayed.

REQ-SFI-04: Each Administrator must be able to assign a client to an available unit.

- If the unit already currently has an assigned client, the Administrator will not be able to assign an additional client to the unit.

REQ-SFI-05: Each Administrator must be able to remove a client from a unit, which will set the unit to available.

REQ-SFI-06: Each Administrator must be able to add additional units, which will automatically update the map mentioned in REQ-SFI-01.

3.2 Storage Unit Information

3.2.1 Description and Priority

Viewing storage unit information is essential to the system. It is of high importance and consists of viewing the information of a specific unit and the client renting it from the facility.

Priority: High

3.2.2 Functional Requirements

REQ-SUI-01: Each Administrator must be able to view unit information.

- The information must include:
    - Unit Number
    - Unit Dimensions
    - Unit Availability
    - Unit Rent Cost
    - Unit Current Balance
    - Client's Full Name
- The information may include:
    - Client's Email
    - Client's Phone Number
    - Client's Payment Methods
    - Transaction Documents
    - Last Payment Date
    - Annotations

REQ-SUI-02: Each Staff Member must be able to view restricted unit information.

- The information must include:
    - Unit Number

    - Unit Dimensions
    - Unit Availability
    - Unit Rent Cost
    - Client's Full Name
- The information may include:
    - Client's Email
    - Client's Phone Number
    - Annotations

REQ-SUI-03: Each Administrator must be able to edit unit information.

- The information must include:
    - Unit Dimensions
    - Unit Availability
    - Unit Rent Cost
    - Unit Current Balance
    - Client's Full Name
- The information may include:
    - Client's Email
    - Client's Phone Number
    - Client's Payment Methods
    - Transaction Documents
    - Last Payment Date

REQ-SUI-04: Each Staff Member and Administrator must be able to add and edit annotations on the unit information.

REQ-SUI-05: Each Administrator must be able to upload and delete transaction documents associated with specific units.

3.3 System Searching Feature

3.3.1 Description and Priority

Searching for storage unit, transaction, and client information is useful for users to quickly find relevant documents and information when interacting with a client. Furthermore, a search feature will save Administrators valuable time when interacting with the system.

Priority: High

3.3.2 Functional Requirements

REQ-SSF-01: Each Staff Member and Administrator must be able to search for a unit by the following information:

- Client's Full Name

- Client's Email
- Client's Phone Number
- Unit Number
- Unit Availability

REQ-SSF-02: Each Administrator must be able to search the archived transaction documents by the following information:

- File Name
- Associated Unit Number
- Associated Client's Full Name

3.4 Account Management Feature

3.4.1 Description and Priority

Account management is crucial to usage of the overall system. It consists of logging in and out of the system as well as creating new accounts for Administrators and Staff Members.

Priority: High

3.4.2 Functional Requirements

REQ-AMF-01: Each Staff Member and Administrator must enter a unique username and password to sign into their personal account.

REQ-AMF-02: Each Staff Member and Administrator must be able to log out of their account.

REQ-AMF-03: Each Administrator must be able to create an Administrator account and a Staff Member account with a unique username and password.

- If a username is already in use it can not be used to create a new account.

4 External Interface Requirements

4.1 Software Interfaces

REQ-EI-01: Each Administrator must be able to import and export Microsoft Excel documents.

REQ-EI-02: Each Staff Member and Administrator must be able to operate the system in Microsoft Windows 7, 8, 8.1, or 10.

5 Other Non-Functional Requirements

5.1 Performance Requirements

REQ-NF-01: Searching for a storage unit in the system should take fewer than 5 seconds.

REQ-NF-02: Opening the system should take no more than 1 minute.

REQ-NF-03: Processing new clients or storage units in the system should take within 5 seconds.

REQ-NF-04: Each map must support the display of at least 500 storage units.

REQ-NF-05: At least five users must be able to simultaneously use the system.

5.2 Security Requirements

REQ-NF-06: Each Staff Member and Administrator must enter a unique username and password to sign into their personal account.

REQ-NF-07: Passwords must not be viewable by default.

REQ-NF-08: Each Administrator account must not be restricted from any information in the system.

REQ-NF-09: Unit information pertaining to a specific client must be automatically deleted 2 years after the client pays off debts and ceases renting units.

REQ-NF-10: Each Administrator with an existing account must be able to create a new Staff Member or Administrator account.

5.3 Software Quality Attributes

REQ-NF-11: The system should be manageable and maintainable by the IT team.

6 Other Requirements

REQ-NF-12: The client information within the storage unit must be compliant with Alberta’s Personal Information Protection Act [4].

7 Models and Diagrams

7.1 Data Modelling

7.1.1 Entity Relationship Diagram

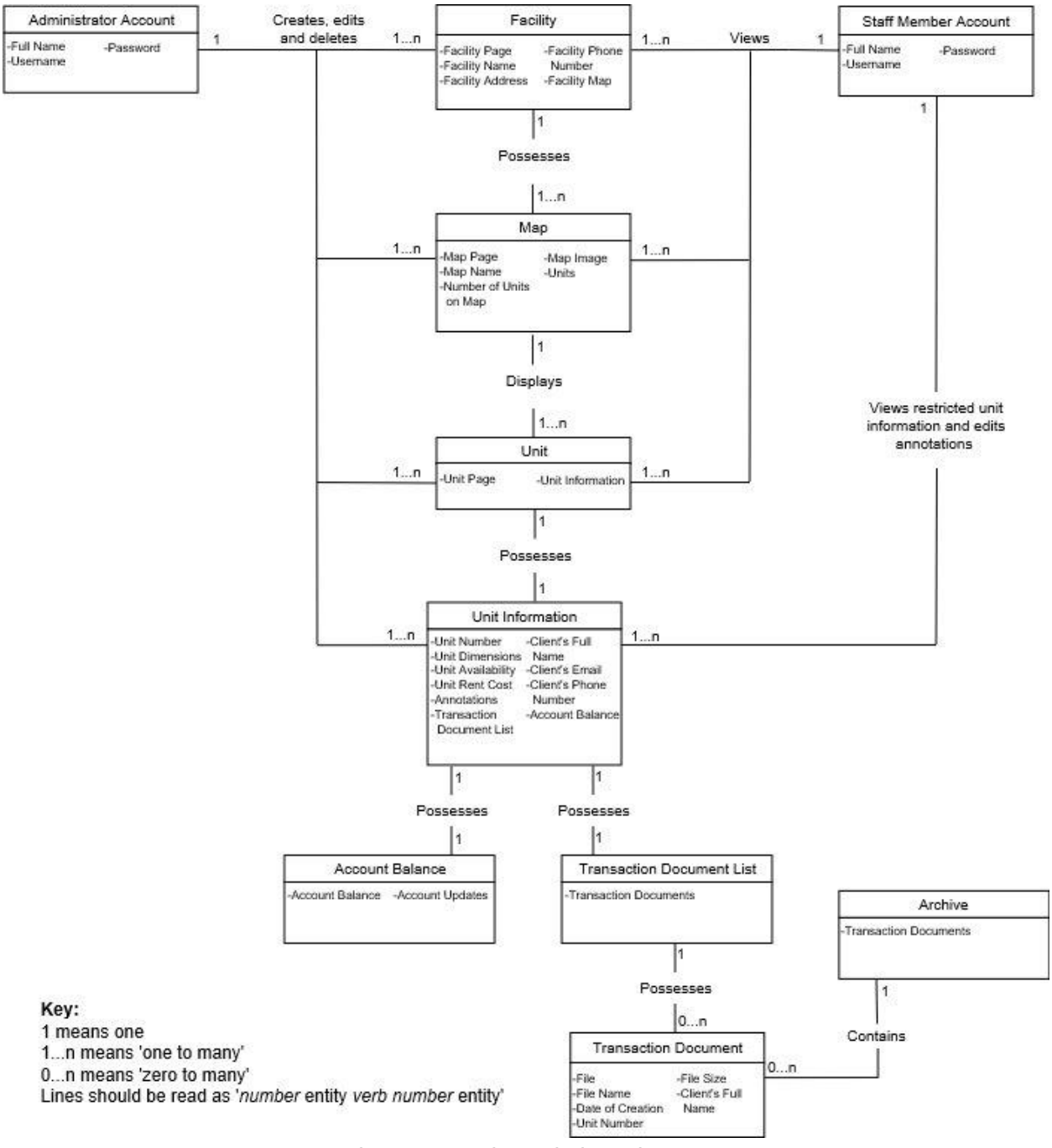

Figure 1. Entity Relation Diagram

7.1.2 Data Dictionary

Entity	**Field**	**Field Type**
Administrator Account		
	Full Name	*string*
	Username	*string*
	Password	*string*
Staff Member Account		
	Full Name	*string*
	Username	*string*
	Password	*string*
Facility		
	Facility Page	*page*
	Facility Name	*string*
	Facility Address	*string*
	Facility Phone Number	*string*
	Facility Map	*Map*
Map		

	Map Page	*page*
	Map Name	*string*
	Number of Units on Map	*int*
	Map Image	*Image file*
	Units	*Unit*
Unit		
	Unit Page	*page*
	Unit Information	*Unit Information*
Unit Information		
	Unit Number	*int*
	Unit Dimensions	*Int array*
	Unit Availability	*string*
	Unit Rent Cost	*string*
	Client’s Full Name	*string*
	Client’s Email	*string*
	Client’s Phone Number	*string*
	Annotations	*string*
	Payment Methods	*string*

	Account Balance	*Account Balance*
	Transaction Document List	*Transaction Document List*
Account Balance		
	Account Balance	*float*
	Account Updates	*string array*
Transaction Document List		
	Transaction Documents	*Transaction Document*
Transaction Document		
	File	*file.**
	File Name	*string*
	Date of Creation	*int*
	File Size	*int*
	Client's Full Name	*string*
	Unit Number	*int*
Archive		
	Transaction Document List	*Transaction Document List*

Table 1. Data Dictionary

7.2 Data Flow Diagrams

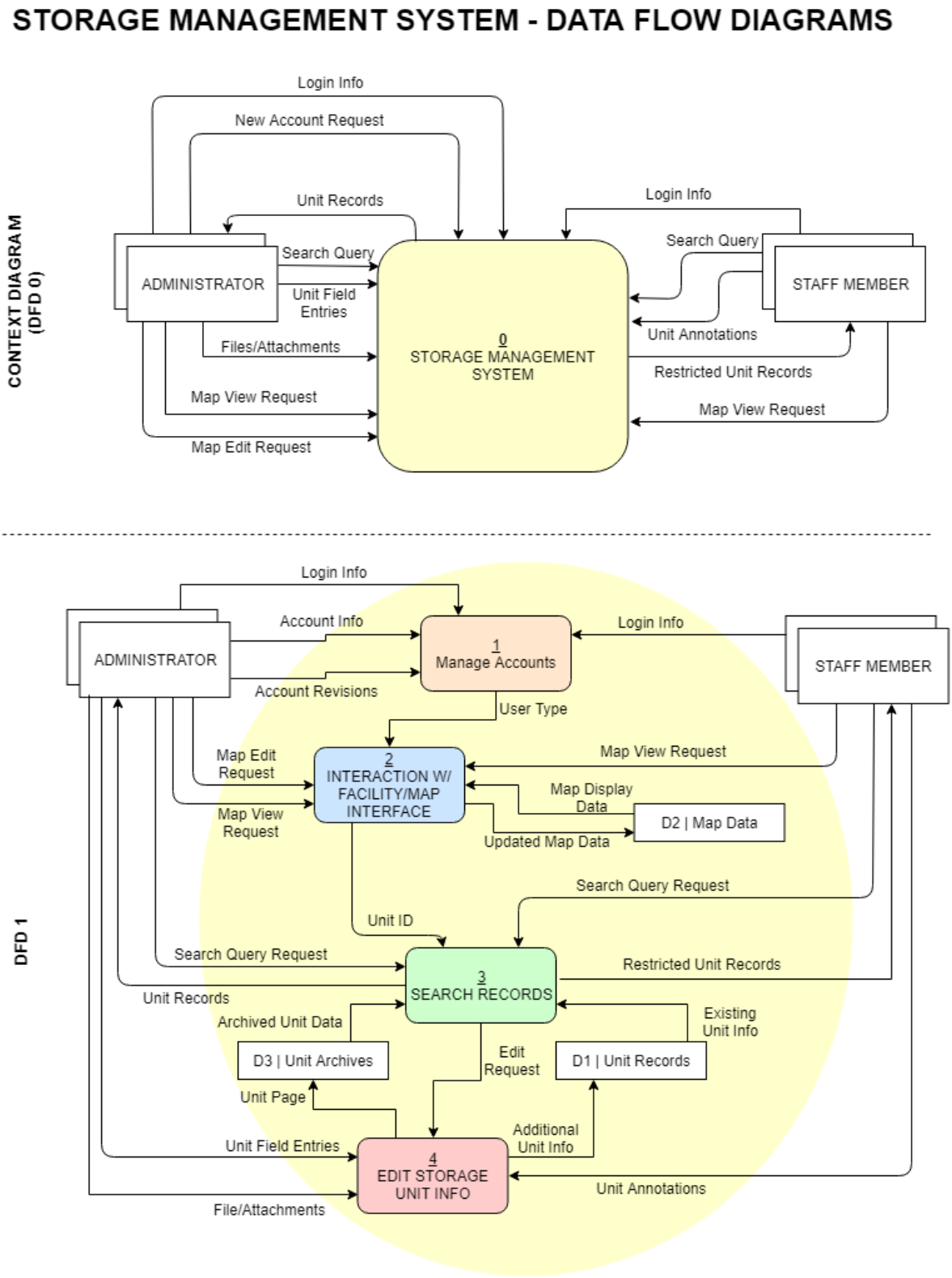

Figure 2: Level 0 and Level 1 Data Flow Diagrams

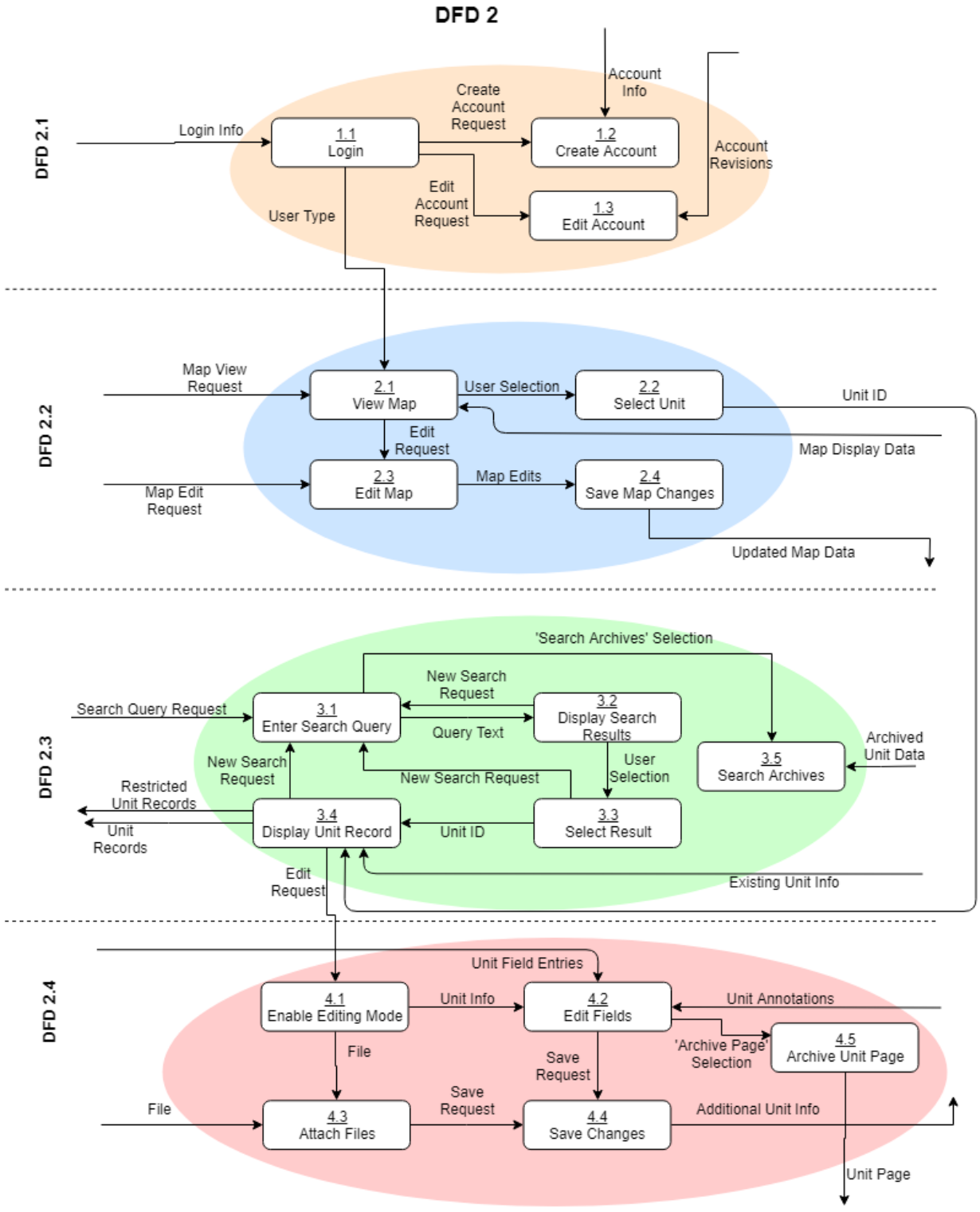

Figure 3: Level 2 Data Flow Diagrams

7.3 Use Cases and Sequence Diagrams

7.3.1 Account Management Use Cases

Use Case UCAM-01: Logging In
Actors: Staff Members and Administrators
Precondition: None
Steps:

1. The user enters their username and password
2. The user submits their entered username and password

Success Condition: The user will be logged into the system and have security access based on their account type

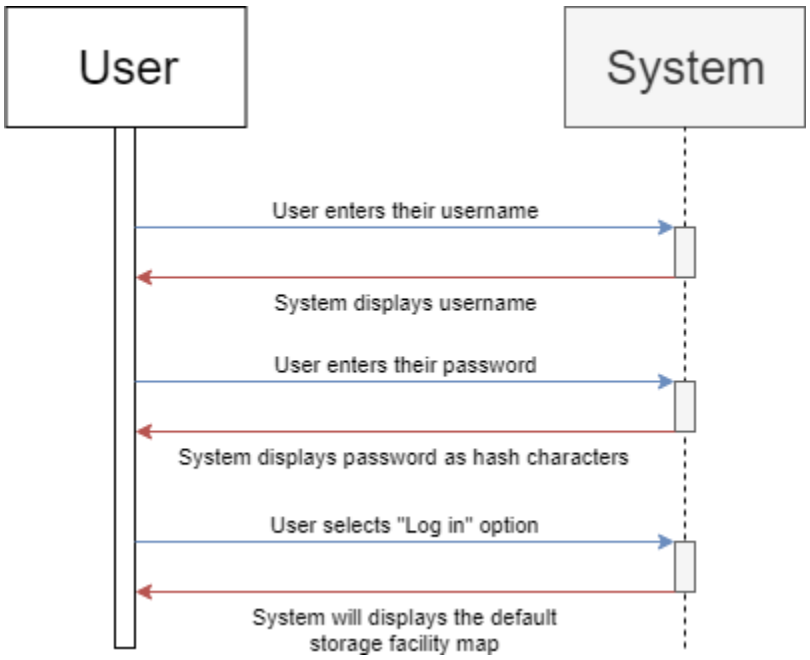

Figure 4: UCAM-01 Sequence Diagram

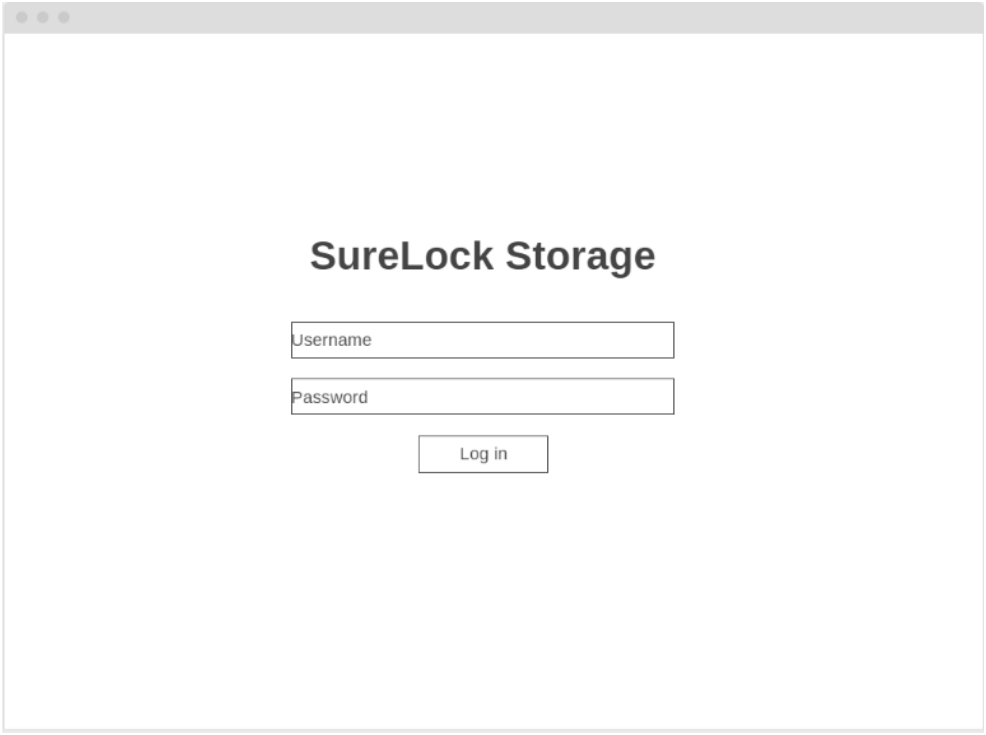

Figure 4.1: UCAM-01 UI Screen 1 – Login Screen

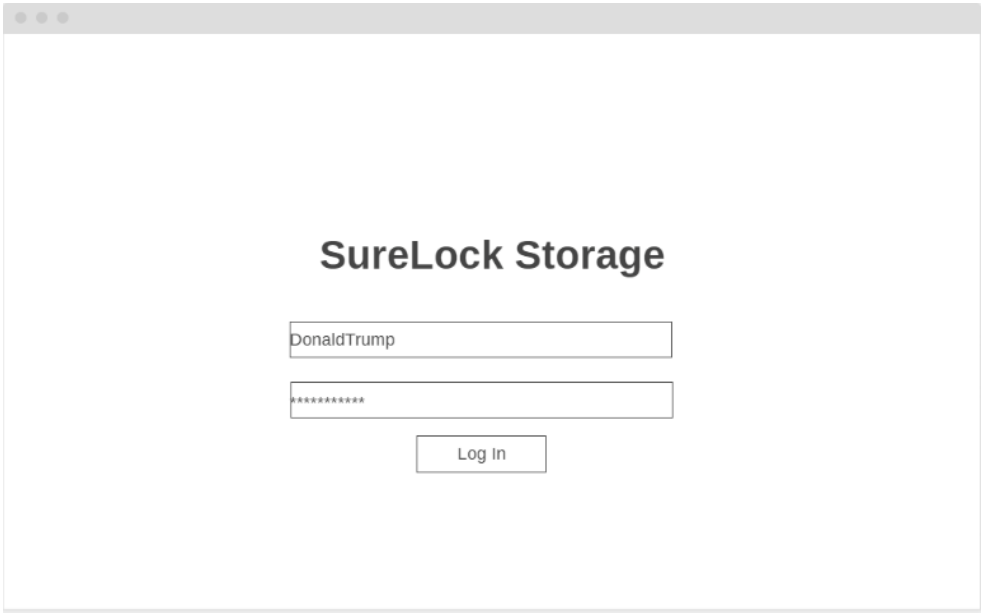

Figure 4.2: UCAM-01 UI Screen 2 – Login Screen with Credentials

Figure 4.3: UCAM-01 UI Screen 3 – Map Screen

An Administrator or a Staff Member will be able to click the “Log In” button after entering their username and password in order to log in to the system. They will be directed to the facility map page and have security access based on their account type.

Use Case UCAM-02: Logging Out
Actors: Staff Members and Administrators
Precondition: The user is logged into the system under a valid account
Steps:

1. The user selects to log out

Success Condition: The user will be logged out of the system

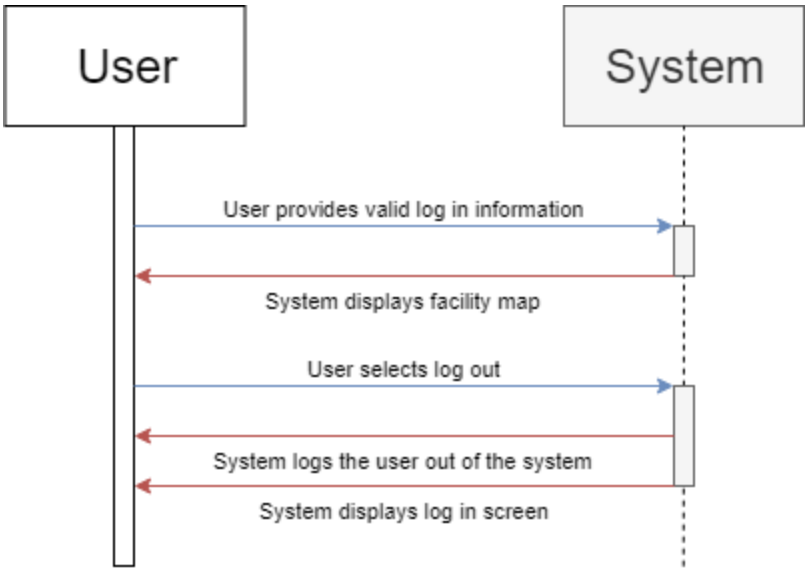

Figure 5: UCAM-02 Sequence Diagram

Use Case UCAM-03: Creating an Account
Actors: Administrators
Precondition: The user is logged into the system under an Administrator account
Steps:

1. The user selects to create account
2. The user enters username and password for the new account
3. The user selects the account type
4. The user submits entered information

Success Condition: The account will be created with the entered information and selected account type.
Alternate Path: 2a) The user selects the Staff Member account type.

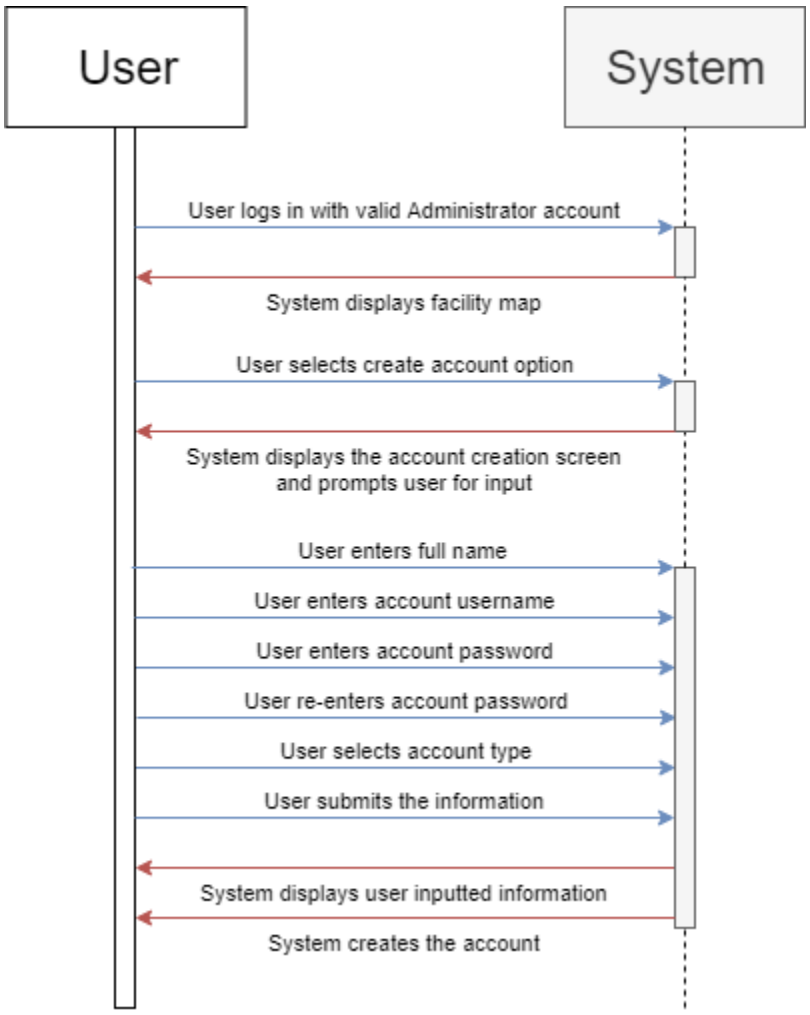

Figure 6: UCAM-03 Sequence Diagram

Figure 6.1: UCAM-02 UI Screen 1 – Map Screen

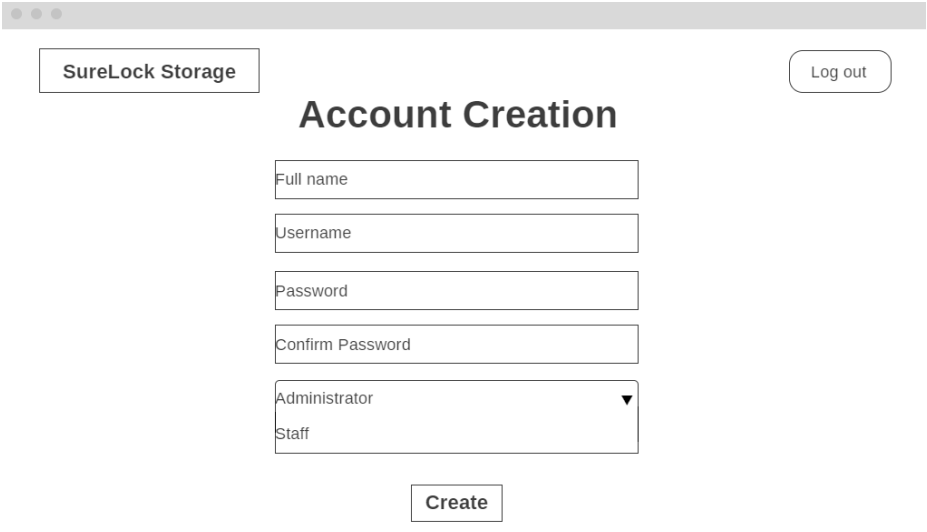

Figure 6.2: UCAM-02 UI Screen 2 – Account Creation Screen

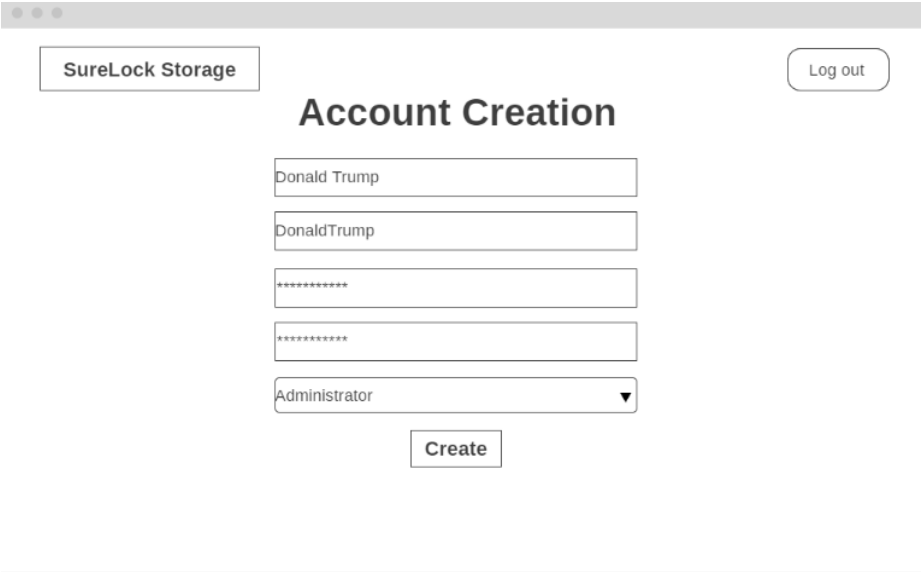

Figure 6.3: UCAM-02 UI Screen 3 – Administrator Account Creation Screen

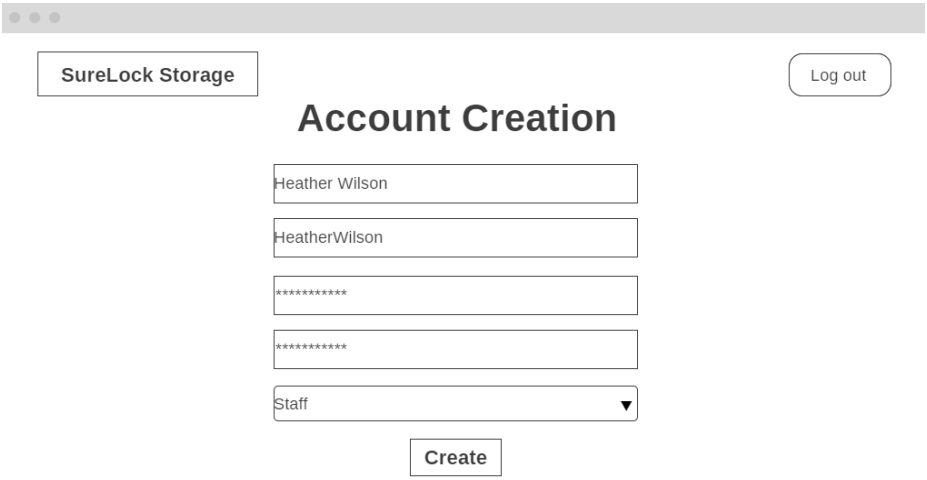

Figure 6.4: UCAM-02 UI Screen Alternate – Staff Member Account Creation Screen

The Administrator clicks “Create Account”. After entering a full name, username, password, and confirming the password, the Administrator chooses “Administrator” from the dropdown box in order to create an Administrator account. By clicking “Create”, the Administrator submits the information the Administrator typed and create an account. For the alternate path, the Administrator chooses “Staff” from the dropdown box in order to make a Staff Member account.

7.3.2 Storage Facility Information Use Cases

Use Case UCSFI-01: Viewing the Storage Facility Map
Actors: Administrators and Staff Members

Precondition: A user has logged in to the system under a valid account
Steps:

1. The user views the map

Success Condition: The map is displayed to the user

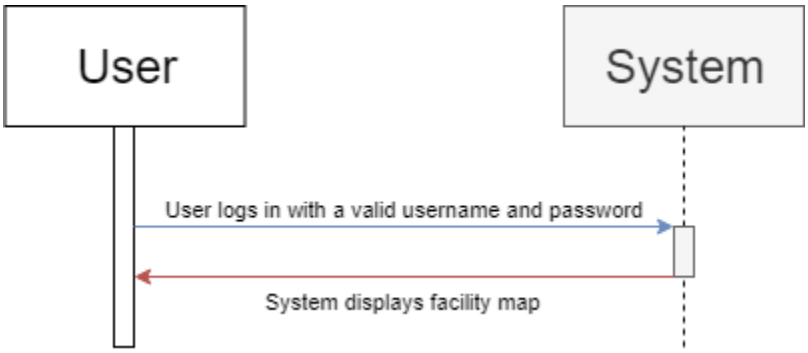

Figure 7: UCSFI-01 Sequence Diagram

Use Case UCSFI-02: Assigning a unit to a client
Actors: Administrators
Precondition: A user has logged in to the system under an Administrator account
Steps:

1. The user selects an available unit from the map
2. The user inputs a client full name and client phone number

Success Condition: Unit information will be updated to display the inputted information and show that the unit's availability is now 'not available'

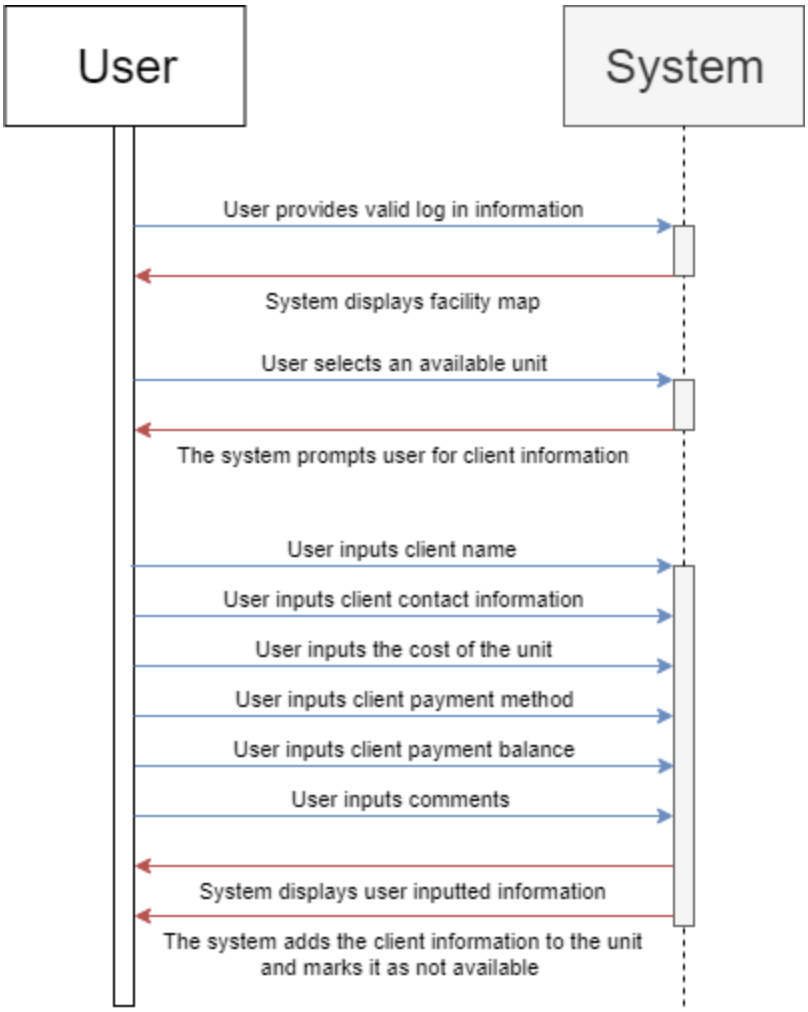

Figure 8: UCSFI-02 Sequence Diagram

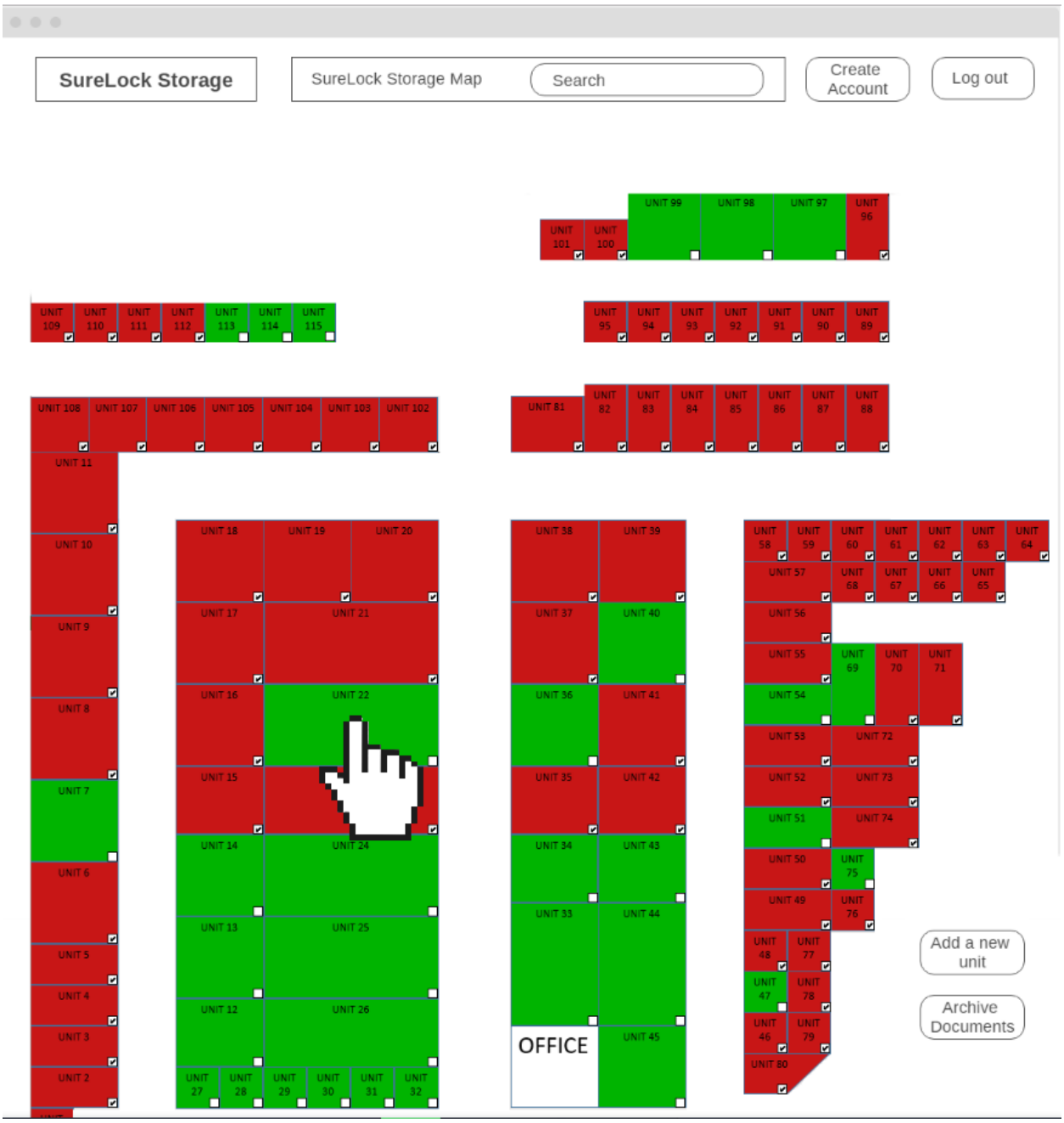

Figure 8.1: UCSFI-02 UI Screen 1 – Map Screen

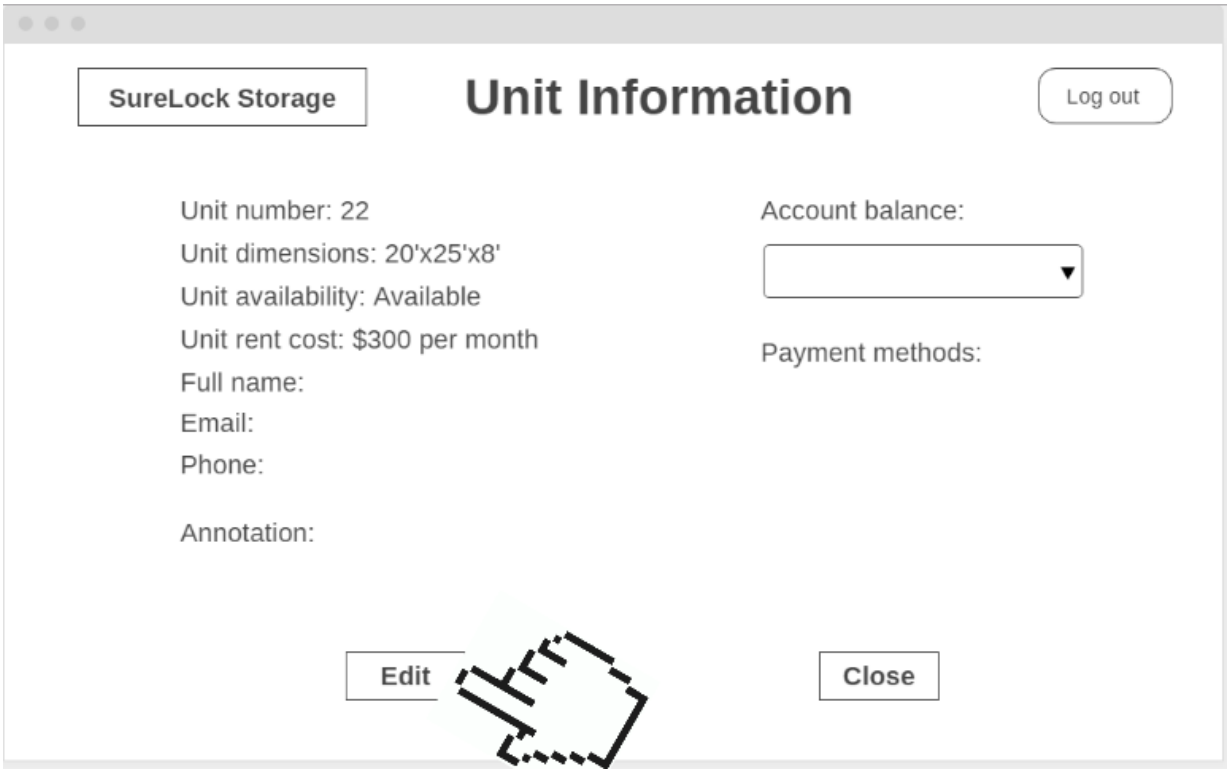

Figure 8.2: UCSFI-02 UI Screen 2 – Unit Information Screen

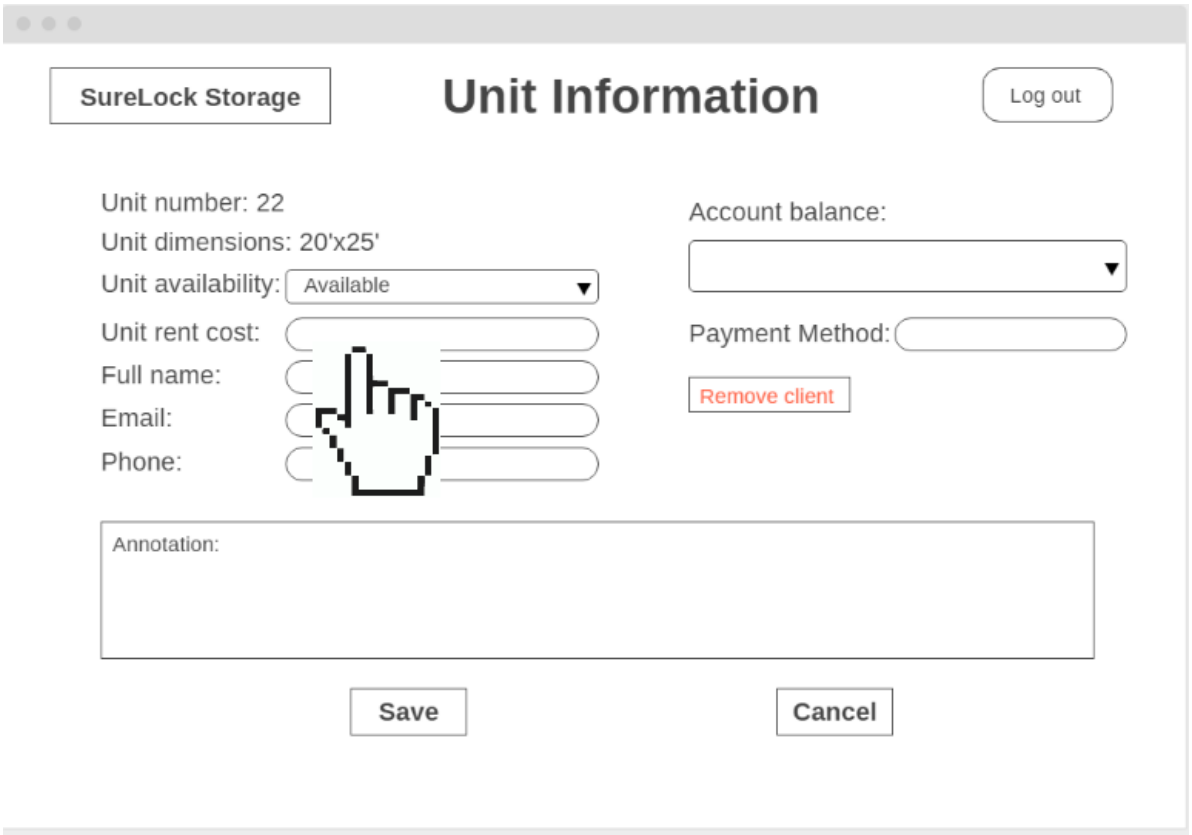

Figure 8.3: UCSFI-02 UI Screen 3 – Unit Information Editing Screen

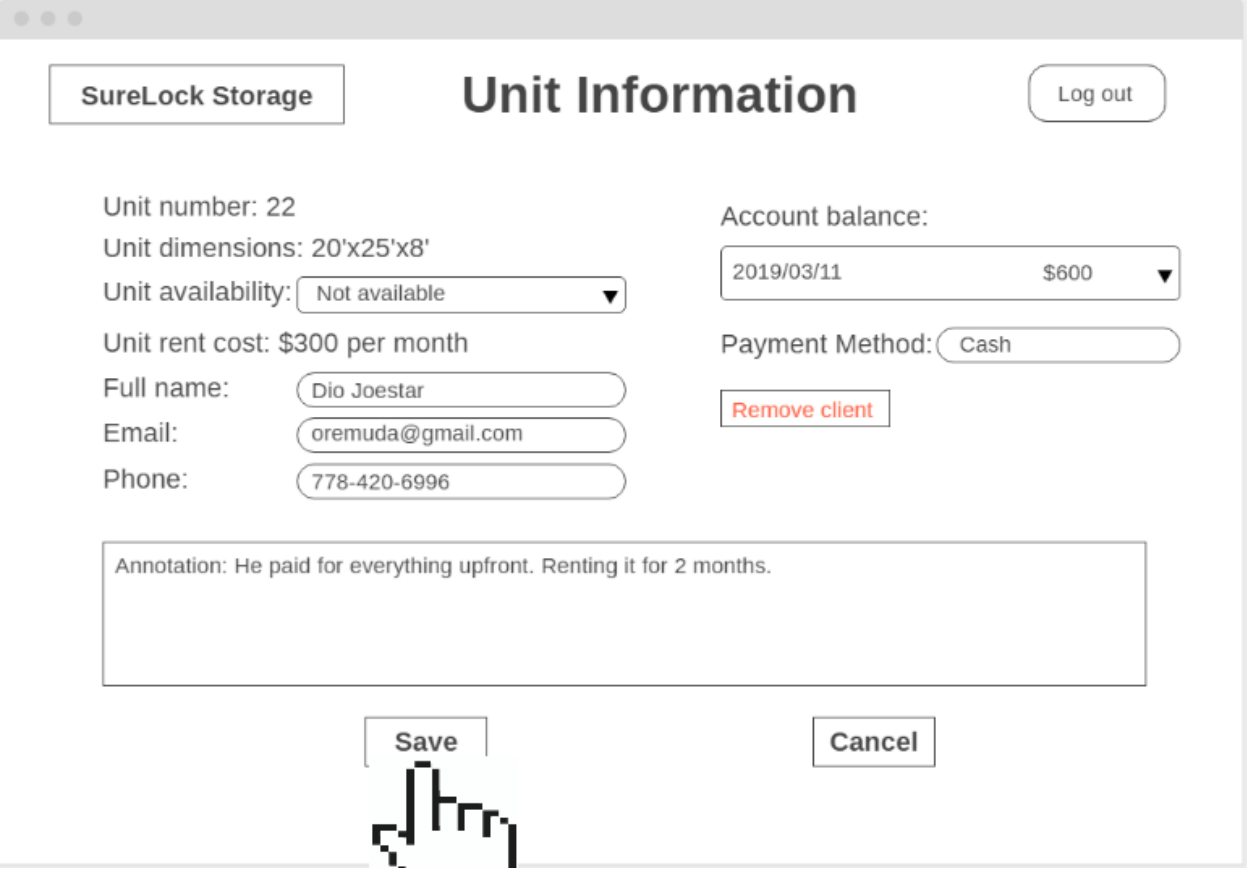

Figure 8.4: UCSFI-02 UI Screen 4 – Unit Information Editing Screen

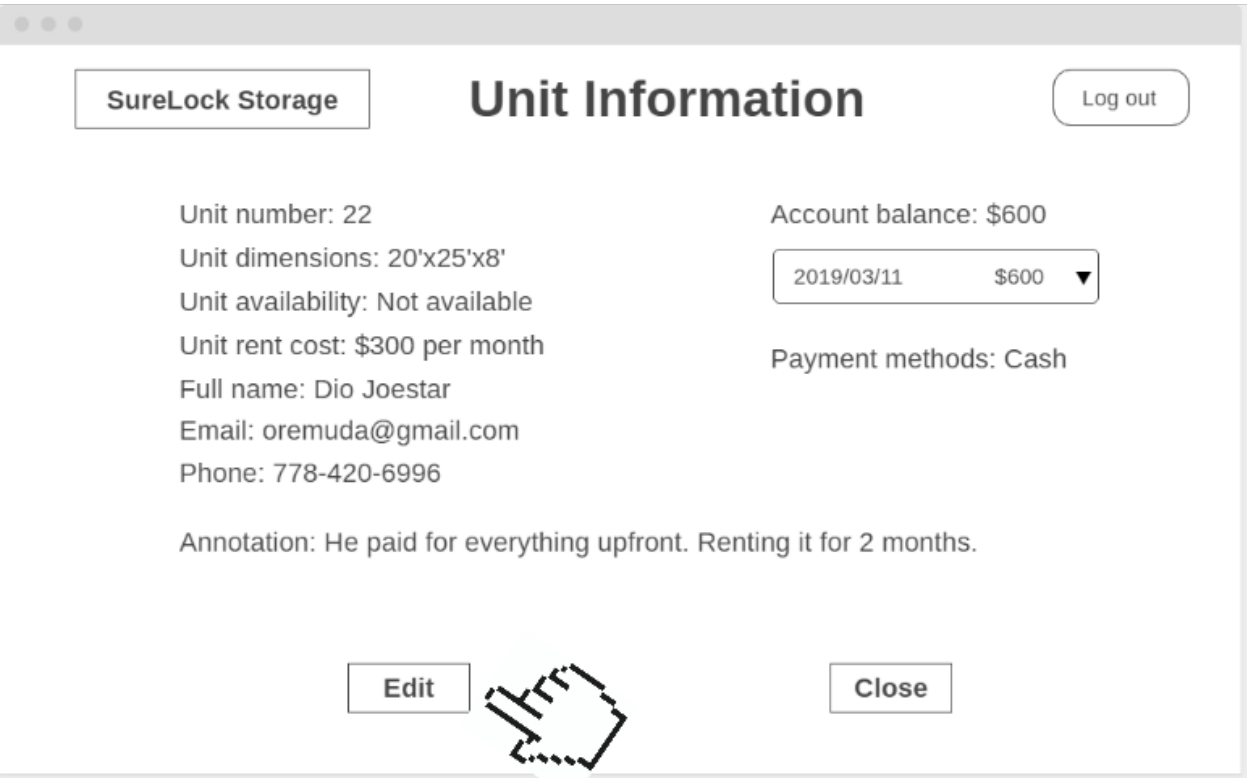

Figure 8.5: UCSFI-02 UI Screen 5 – Unit Information Screen

Figure 8.6: UCSFI-02 UI Screen 6 – Map Screen

The Administrator selects unit 22 from the facility map. The Administrator enters the view mode of the unit information. The Administrator selects “Edit” button to enter the edit mode of the unit information. The edit mode allows the Administrator to input the client’s full name and client’s phone number. The administrator selects “Save” button in the edit mode to save the changes. The Administrator selects the “Close” button and sees the changes of the unit in the facility map.

Use Case UCSFI-03: Checking the availability of a unit
Actors: Administrators and Staff Members
Precondition: The user is logged in to the system under a valid account

Steps:

1. The user navigates to the map of the desired facility
2. The user finds and selects the desired unit on the map
3. The unit's availability will be displayed in the unit information

Success Condition: The user has successfully checked the unit's availability, and has noted if it was 'available' or 'not available'

Alternate Path: 2a) The user cannot find the unit on the map. Then, the user can use the system searching feature to find the unit's location. If the unit exists in the system, the user can then access the unit's information, and therefore its availability, directly from the search

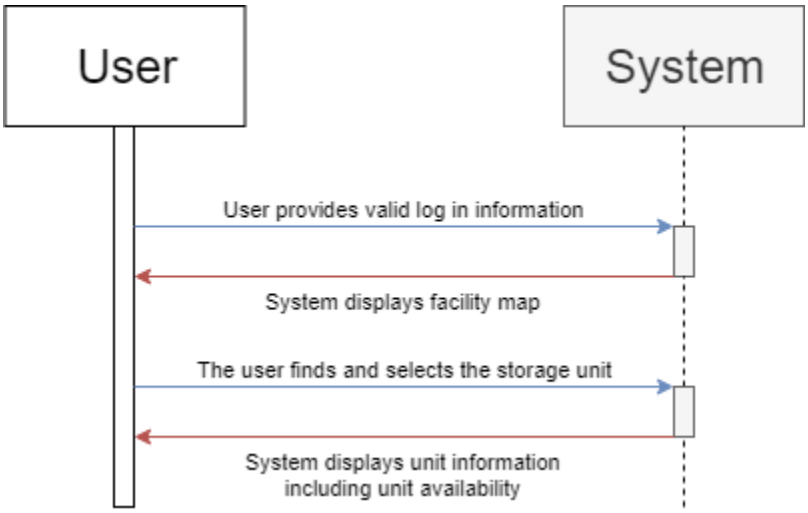

Figure 9: UCSFI-03 Sequence Diagram

Use Case UCSFI-04: Adding a new storage unit in the facility

Actors: Administrators

Precondition: The user is logged into the system with an Administrator account.

Steps:

1. The user selects add new storage unit
2. A unit creation view is displayed to the user
3. The user inputs the dimensions and cost to rent the new storage unit
4. The user selects a location on the map for the new unit

Success Condition: The new storage unit is created and displayed at the selected location with its unit availability set to 'available'

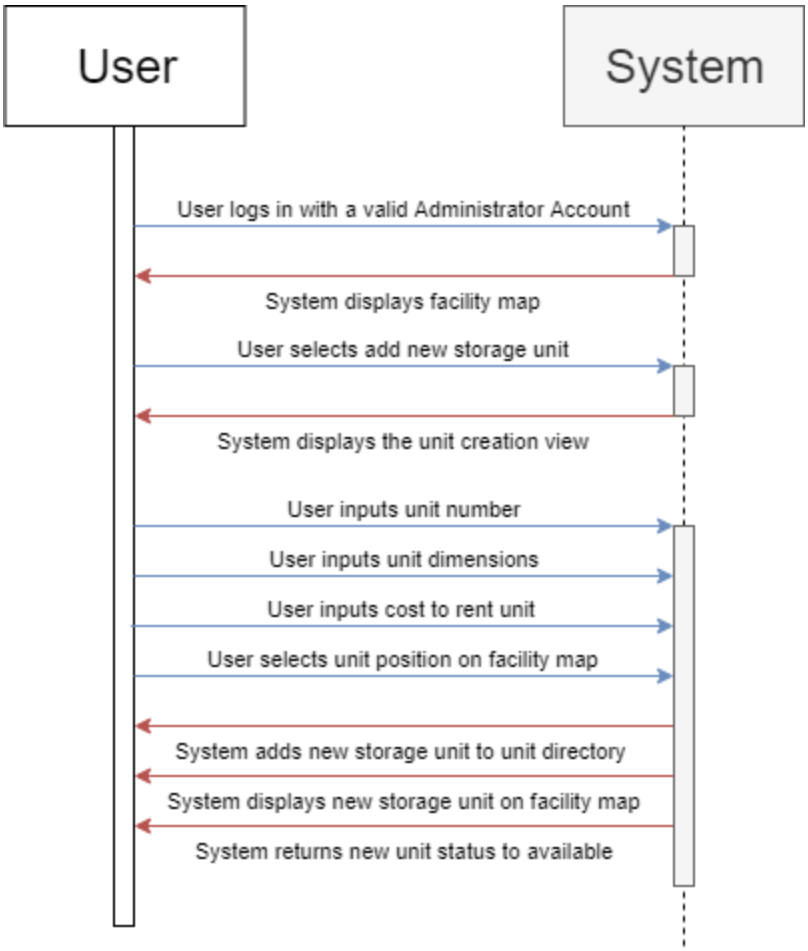

Figure 10: UCSFI-04 Sequence Diagram

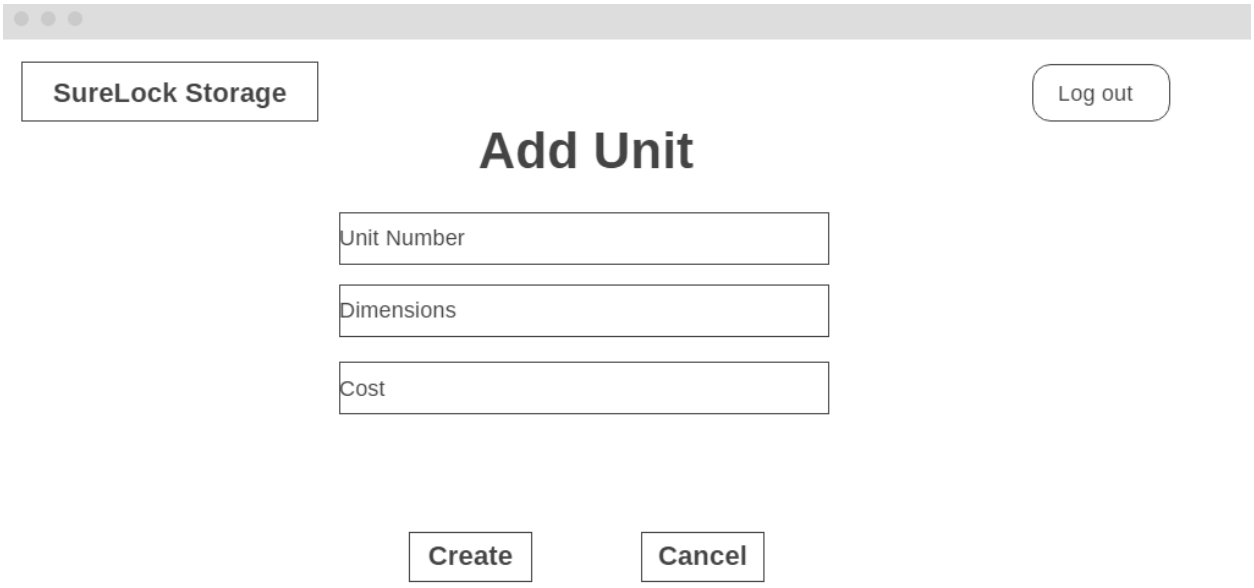

Figure 10.1: UCSFI-04 UI Screen 1 – Add Unit Screen

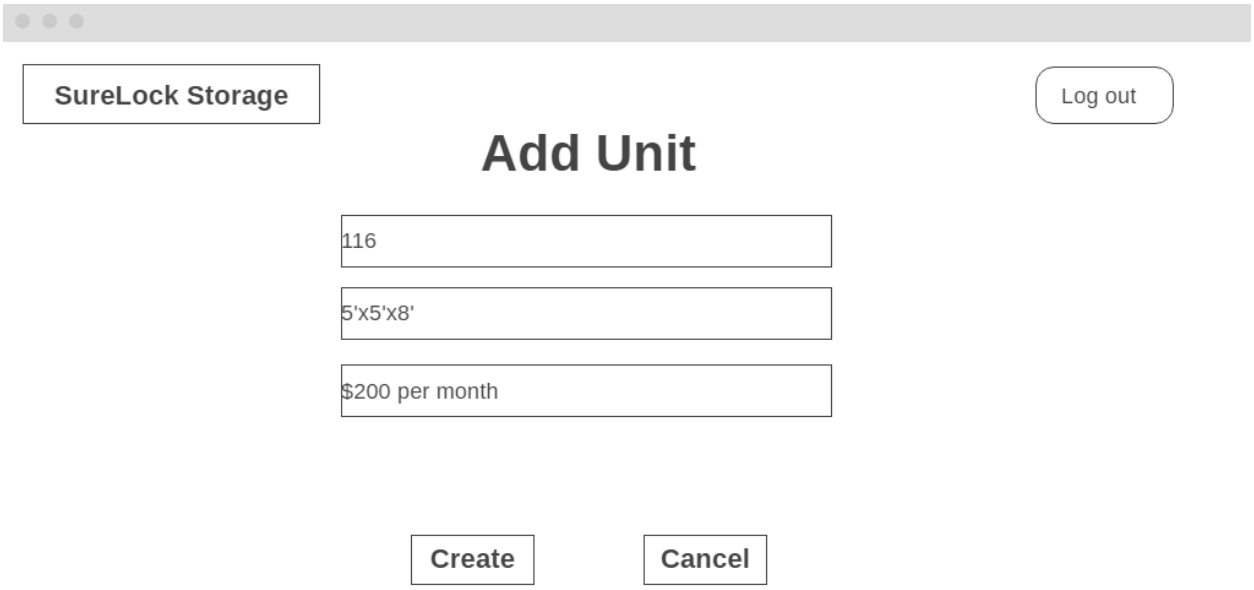

Figure 10.2: UCSFI-04 UI Screen 2 – Add Unit Screen Filled In

Figure 10.3: UCSFI-04 UI Screen 3 – Add Unit Screen

Figure 10.4: UCSFI-04 UI Screen 4 – Add Unit Screen with Unit 116

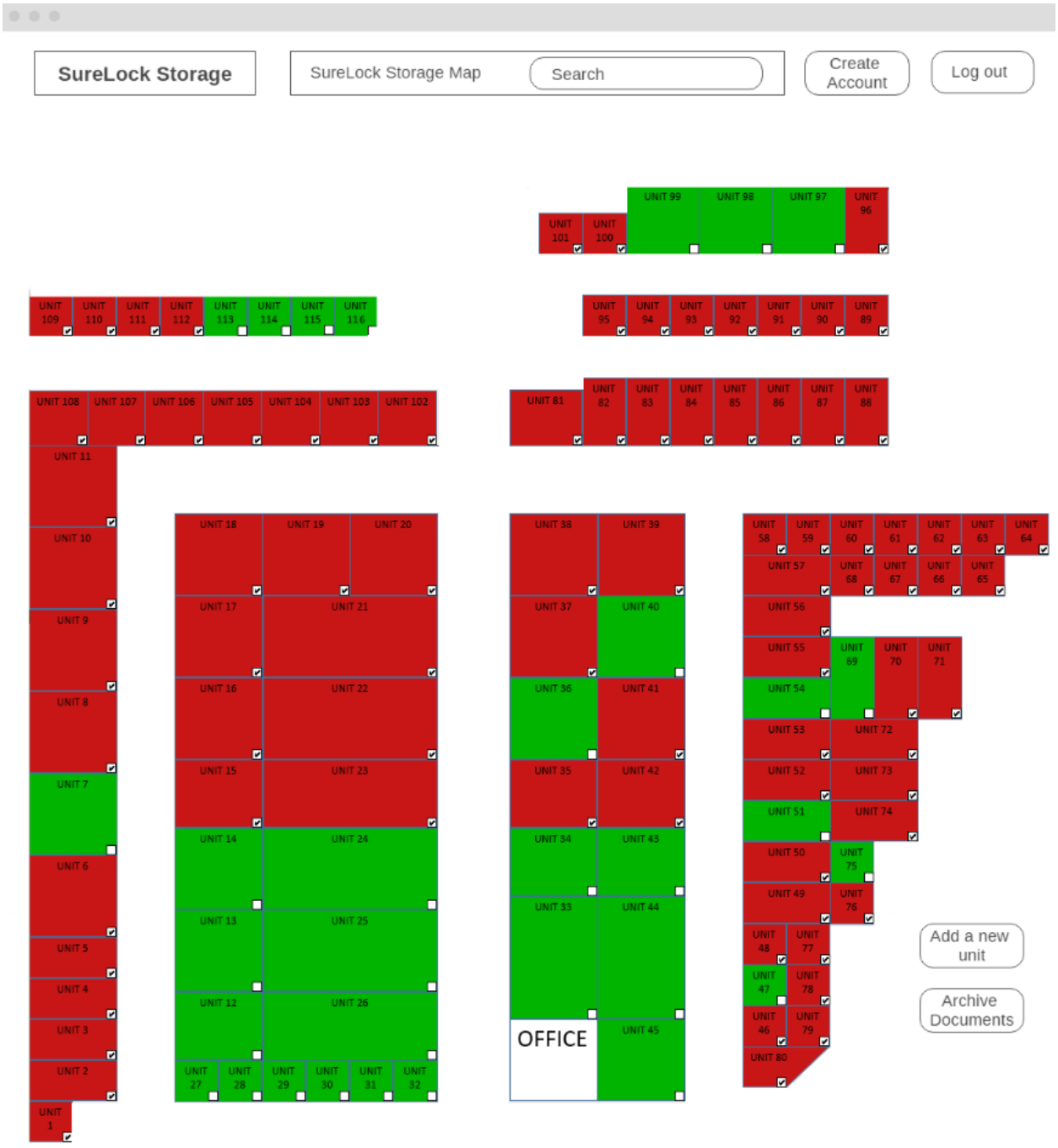

Figure 10.5: UCSFI-04 UI Screen 5 – Map Screen

The Administrator clicks “Add a new unit”. After entering a unit number, dimension and cost, click “Create” to confirm the information the Administrator typed. After that, the Administrator would be directed to map view, where the Administrator is able to choose where do they want to add a new unit. After clicking the position on the map, click “Add Unit” to confirm the position. After all, the system displays the map with new unit added.

Use Case UCSFI-05: Removing client from unit
Actors: Administrators
Steps:

1. The user selects a unit which is ‘not available’
2. The unit information is displayed
3. The user selects to remove client from unit
4. The system asks for confirmation
5. The user confirms intent to remove client from unit

Success Condition: The system removes all client information from the unit and sets the unit to ‘available’. Removed transaction documents will be archived.

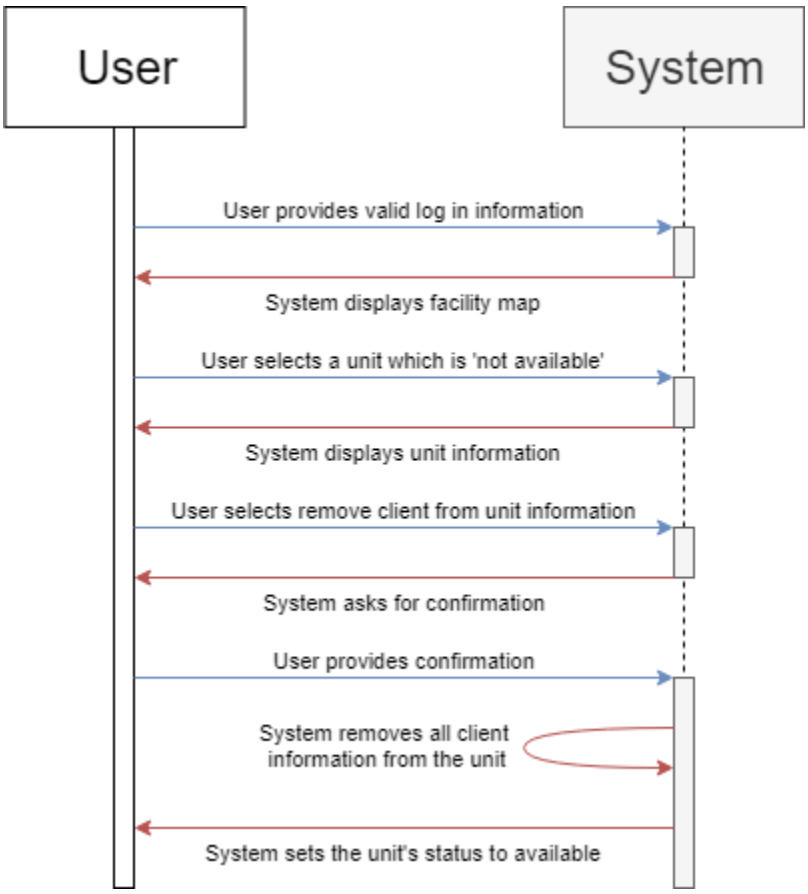

Figure 11: UCSFI-05 Sequence Diagram

7.3.3 Storage Unit Information Use Cases

Use Case UCSUI-01: Viewing Unit Information
Actors: Administrators
Precondition: The user has logged in to the system under an Administrator account
Steps:

1. The user selects a specific unit from the map
2. The system displays the following information that corresponds to the selected unit:
    - Unit Number

- Unit Dimensions
- Unit Availability
- Unit Rent Cost
- Unit Current Balance
- Client's Full Name
- Client's Email
- Client's Phone Number
- Client's Payment Methods
- Transaction Documents
- Last Payment Date
- Annotations

Success Condition: The user is now viewing unit information for the selected unit

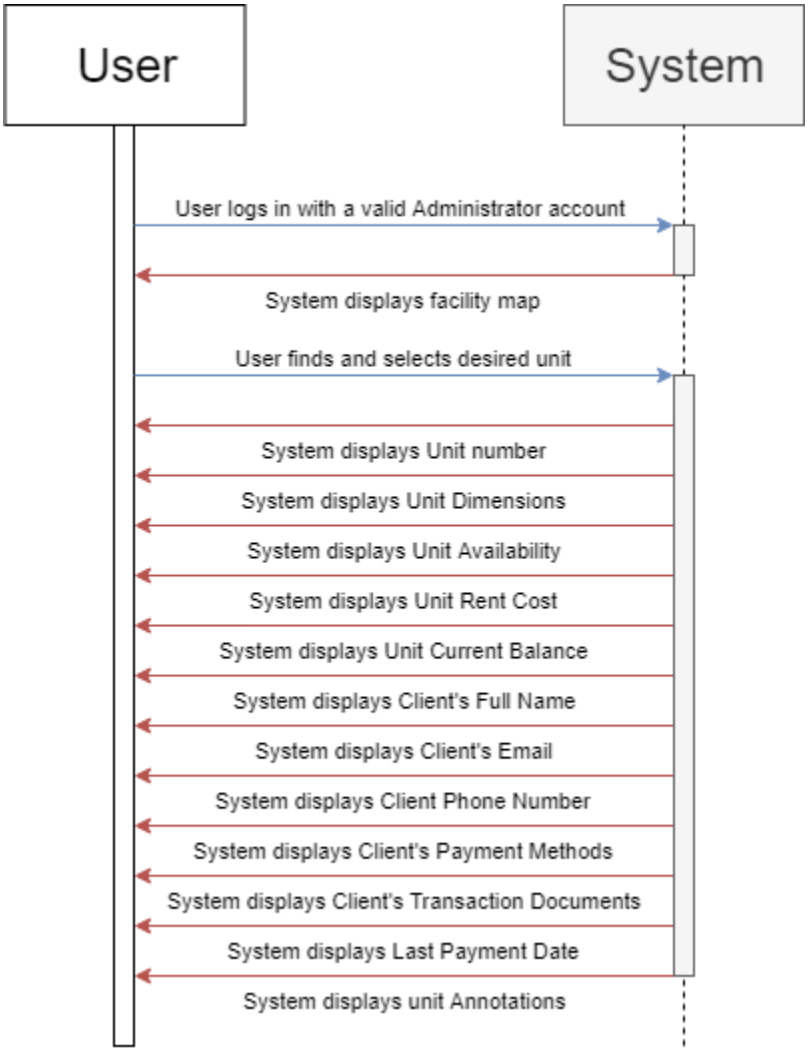

Figure 12: UCSUI-01 Sequence Diagram

Use Case UCSUI-02: Viewing Restricted Unit Information

Actors: Staff Members
Precondition: The user has logged in to the system under a Staff Member account
Steps:

1. The user selects a specific unit from the map
2. The system displays the following information that corresponds to the selected unit:
    - Unit Number
    - Unit Dimensions
    - Unit Availability
    - Unit Rent Cost
    - Client's Full Name
    - Client's Email
    - Client's Phone Number
    - Annotations

Success Condition: The user is now viewing unit information for the selected unit

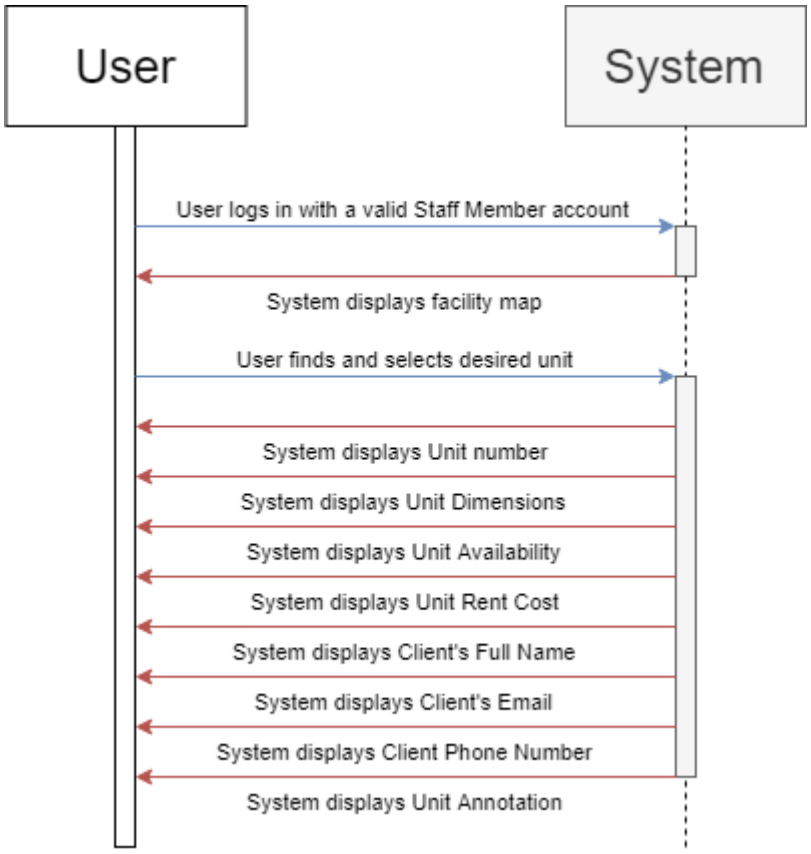

Figure 13: UCSUI-02 Sequence Diagram

Use Case UCSUI-03: Annotating Units
Actors: Administrators and Staff Members
Precondition: The user has logged in under an Administrator or Staff Member account
Steps:

1. The user selects a specific unit
2. The information regarding that unit will be displayed
3. The user navigates to the edit field
4. The user adds their comments to the unit

Success Condition: The annotations for the selected unit are saved and will be viewable by any user of the system

Alternate paths: 4a) The user cancels their unit annotation before submitting. The annotation is not saved to the unit information

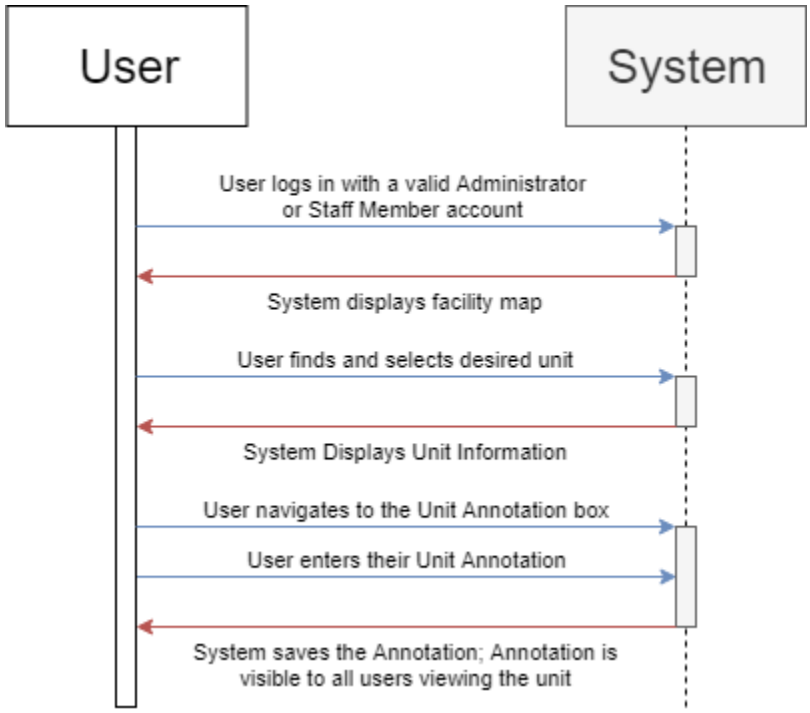

Figure 14: UCSUI-03 Sequence Diagram

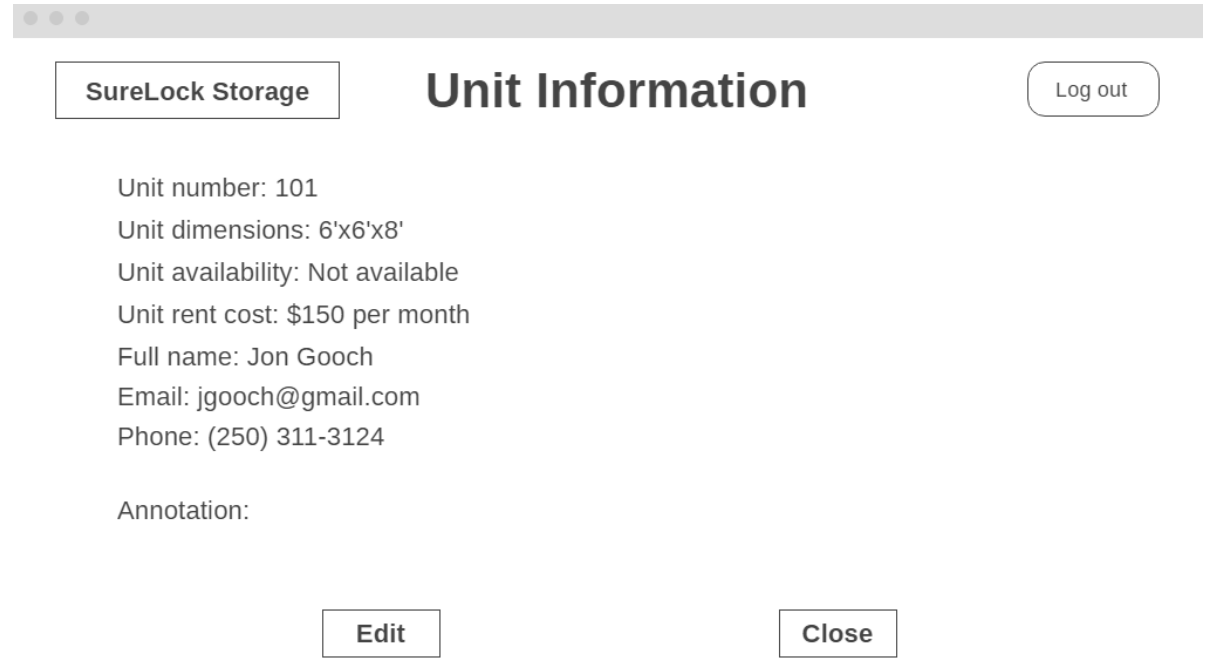

Figure 14.1: UCSUI-04 UI Screen 1 – Unit Information Screen

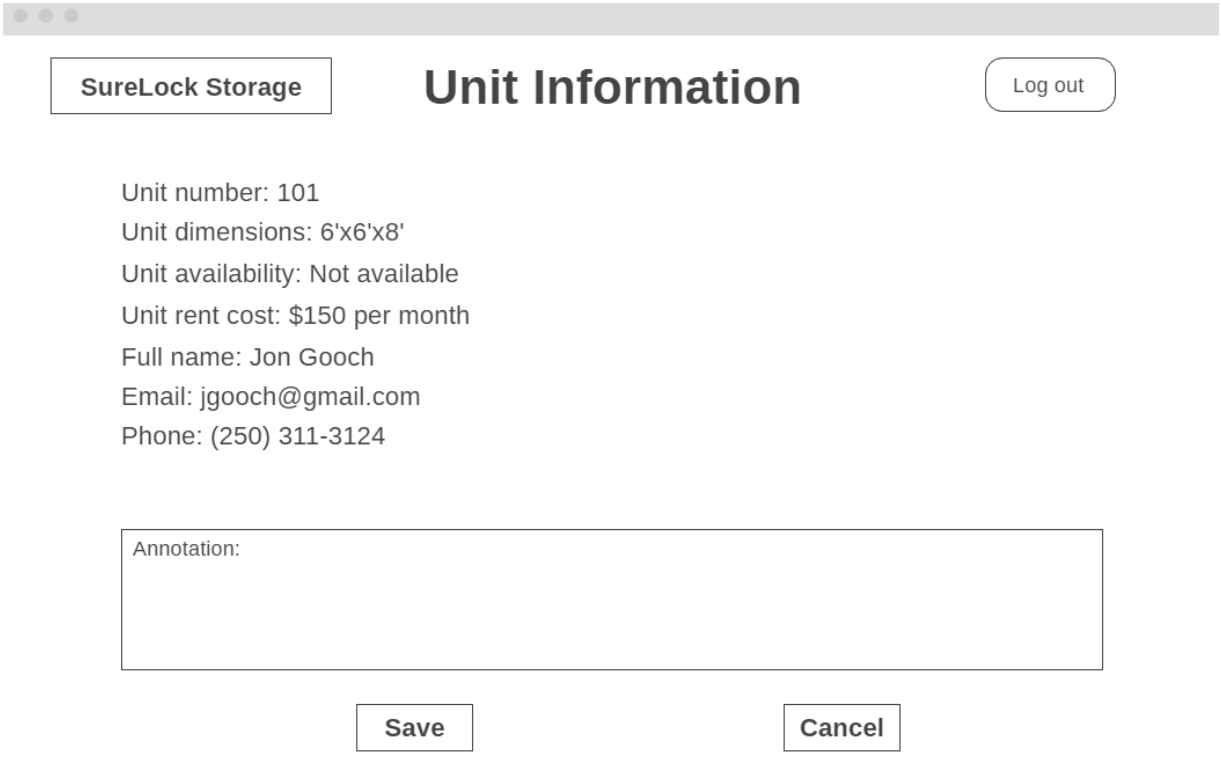

Figure 14.2: UCSUI-04 UI Screen 2 – Unit Information Editing Screen

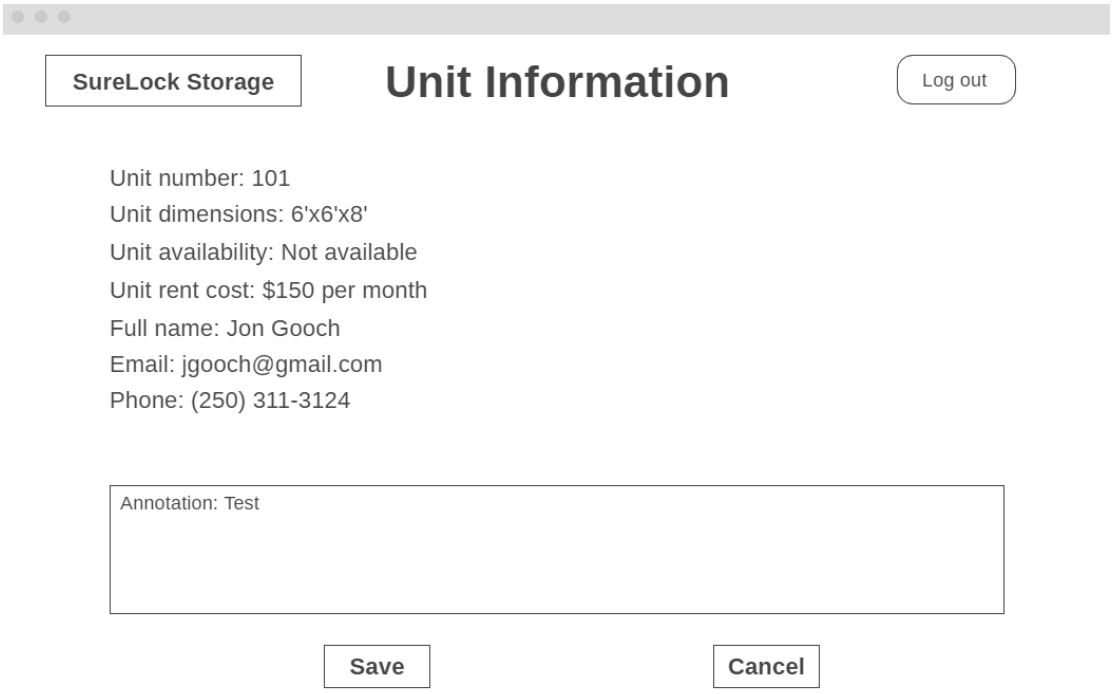

Figure 14.3: UCSUI-04 UI Screen 3 – Unit Information Editing Screen with Annotation

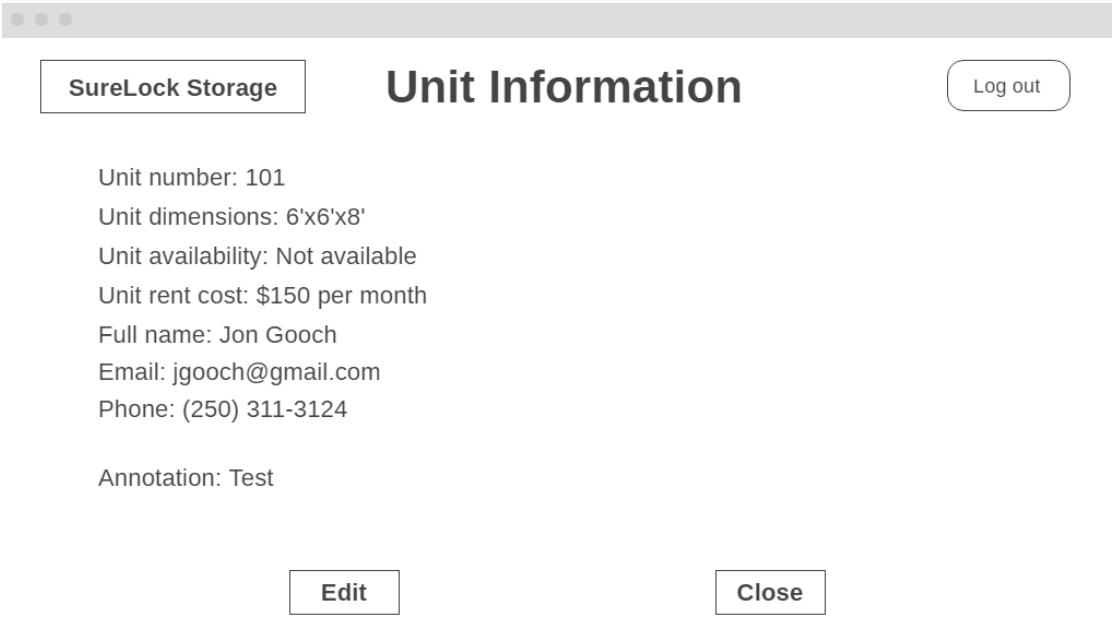

Figure 14.4: UCSUI-04 UI Screen 4 – Unit Information Screen with Annotation

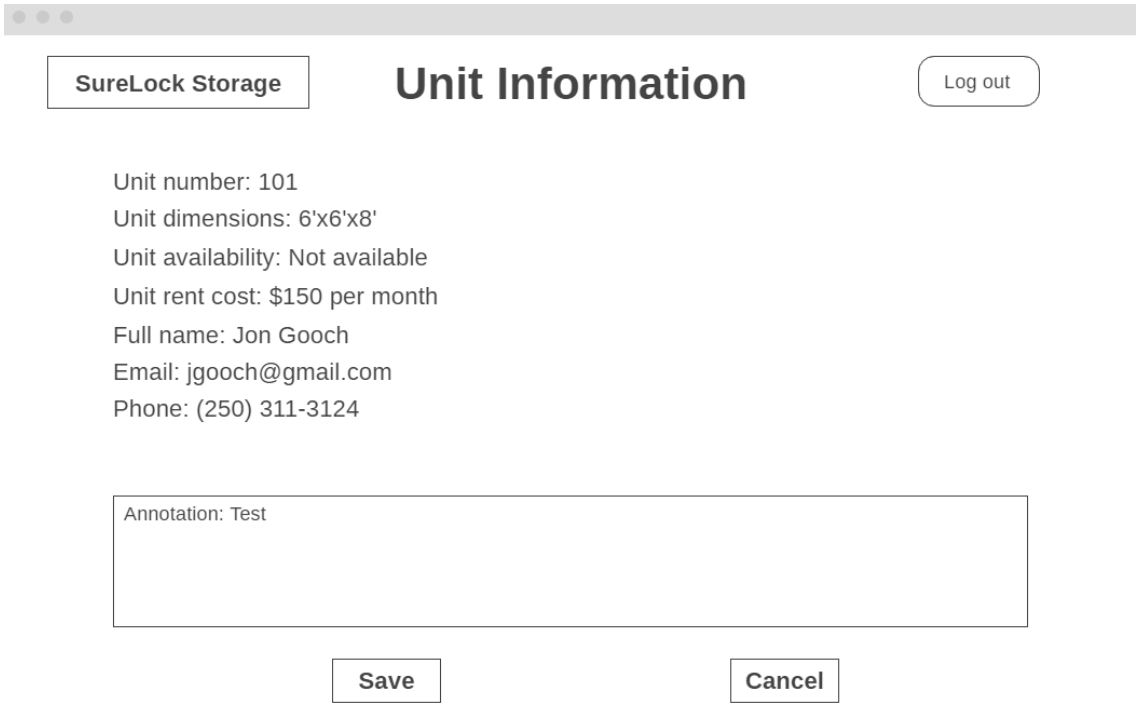

Figure 14.5: UCSUI-04 UI Screen Alternate 1 – Unit Information Editing Screen with Annotation

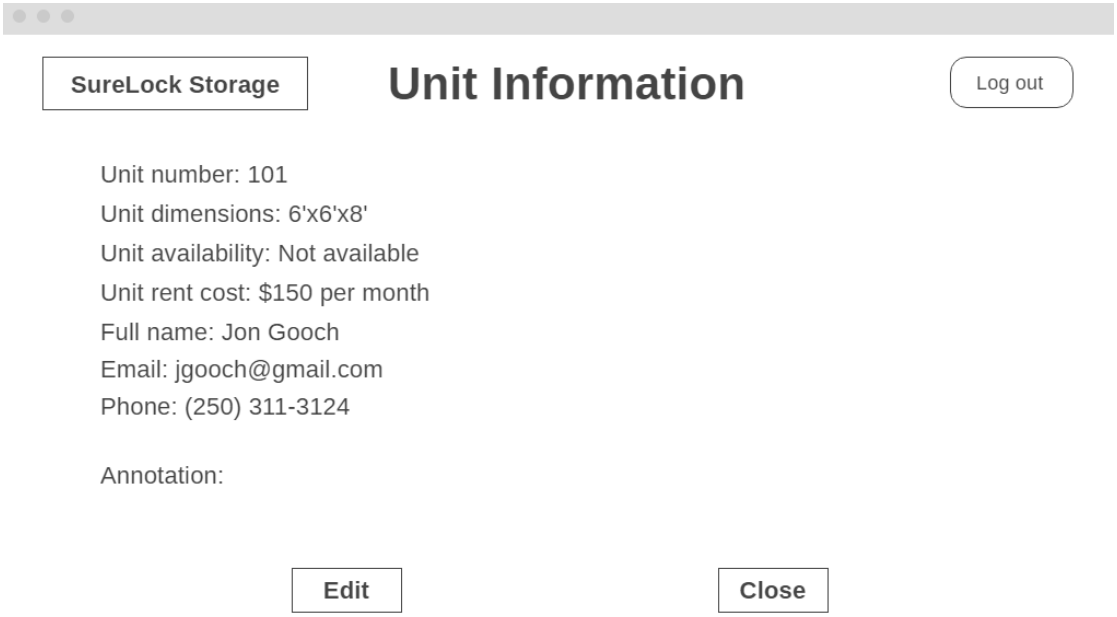

Figure 14.6: UCSUI-04 UI Screen Alternate 2 – Unit Information Screen with Annotation

The user clicks a specific unit on the map, which would direct them to the Unit Information page. By clicking “Edit”, the user is able to add an annotation. Added annotation would be saved as the Unit Information after clicking “Save”. For the alternate path, the user is able to cancel the edit by clicking “Cancel” instead of clicking “Save”.

Use Case UCSUI-04: Removing an Annotation
Actors: Administrators and Staff
Preconditions:

- The user has logged in under a valid account
- There exists a unit with an annotation on its information page

Steps:

1. The user selects the desired unit from the facility map
2. The unit information for the selected unit is displayed
3. The user selects an annotation from the unit information
4. The user selects to remove the annotation

Success Condition: The removed annotation is no longer visible to any user

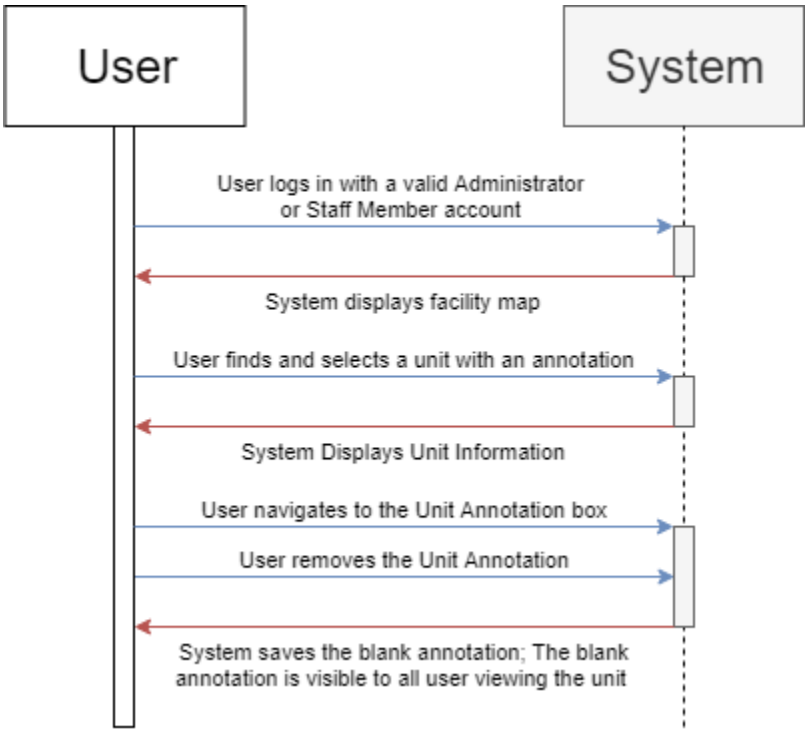

Figure 15: UCSUI-04 Sequence Diagram

Use Case UCSUI-05: Balance Update
Actors: Administrators
Precondition: The user has logged in under an Administrator account
Steps:

1. The user selects a unit from the facility map
2. The unit information for the selected unit is displayed

3. The user selects the payment method
4. The user enters a payment amount

Success Condition: The system updates and decreases the account balance correspondingly
Alternate Path: 3a) The user also adds a transaction document to the unit information

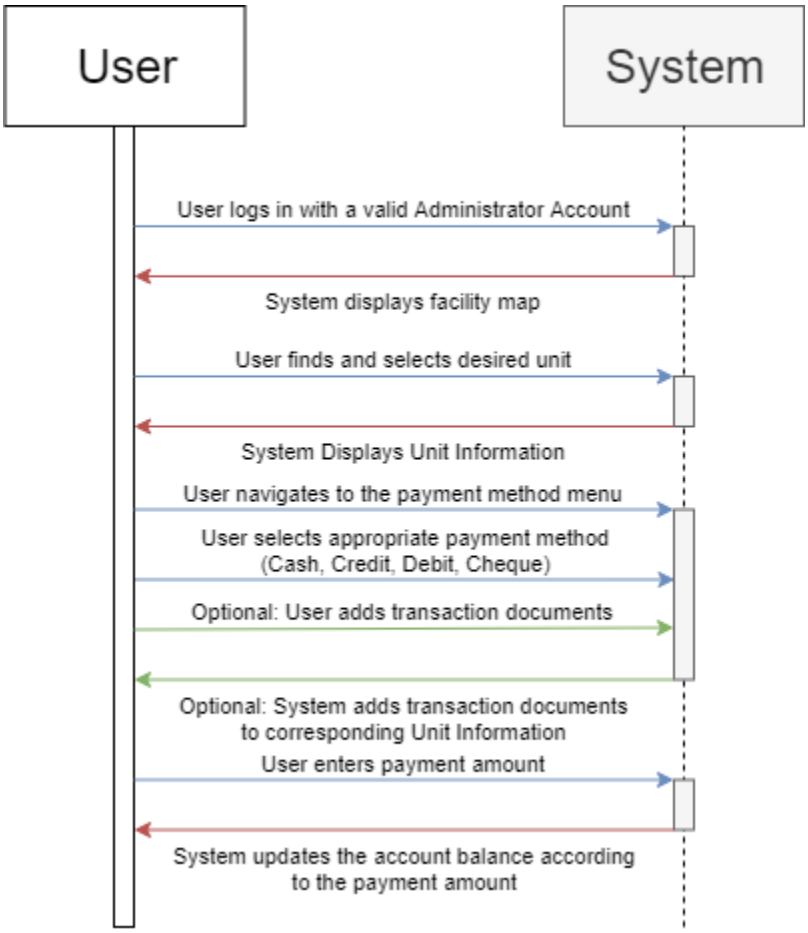

Figure 16: UCSUI-05 Sequence Diagram

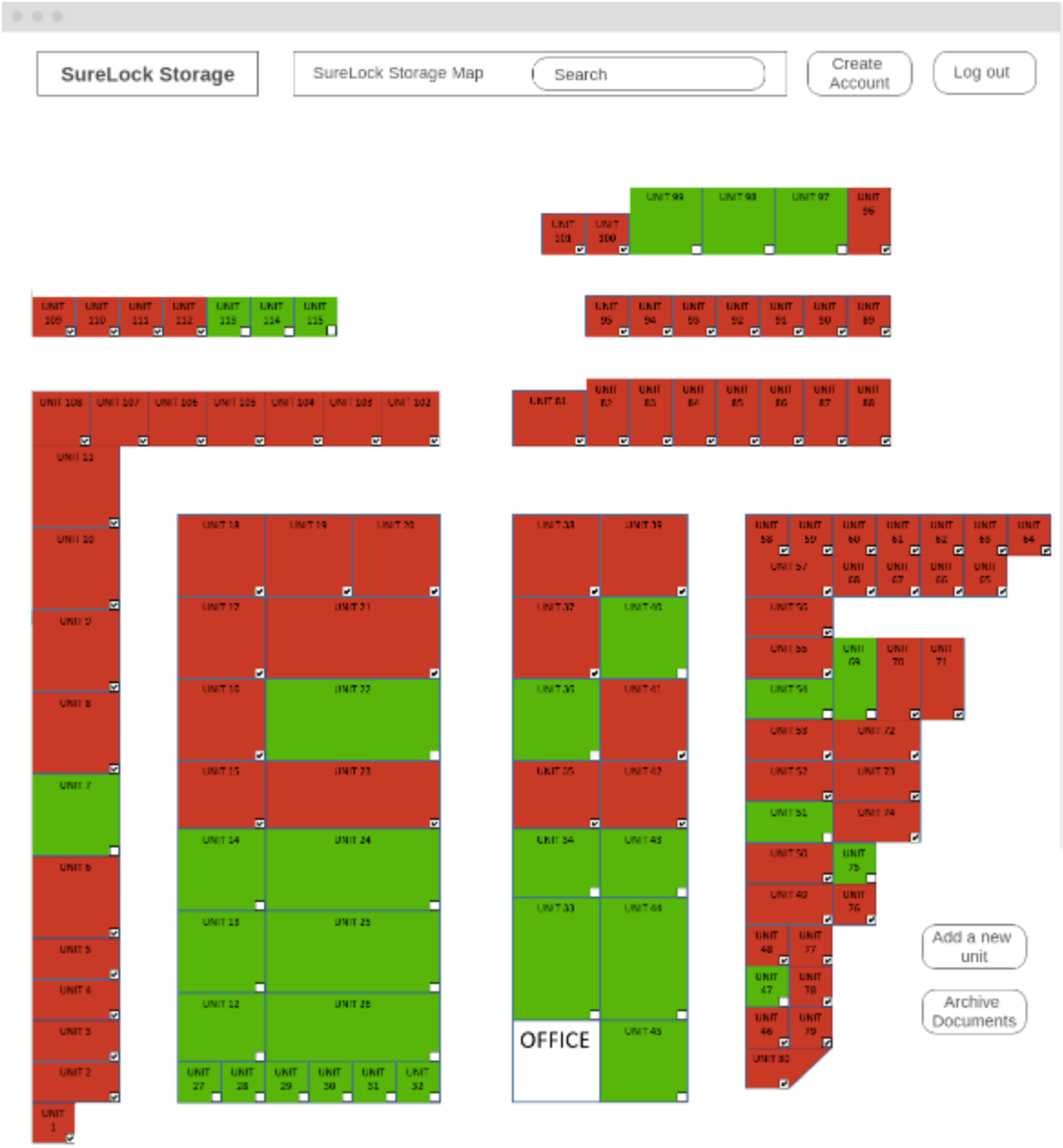

Figure 16.1: UCSUI-05 UI Screen 1 – Map Screen

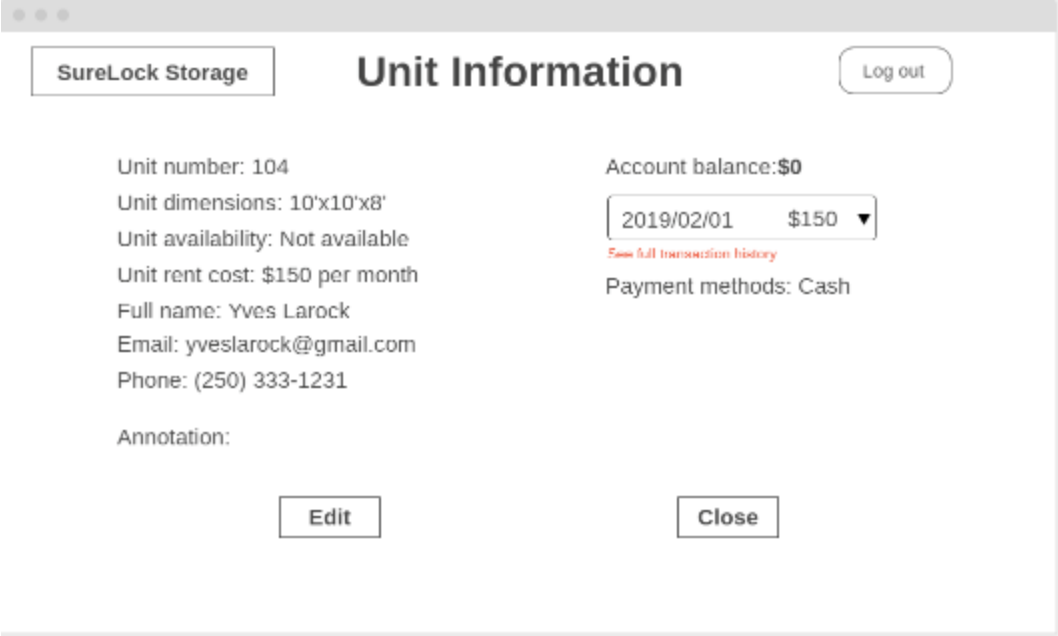

Figure 16.2: UCSUI-05 UI Screen 2 – Unit Information Screen

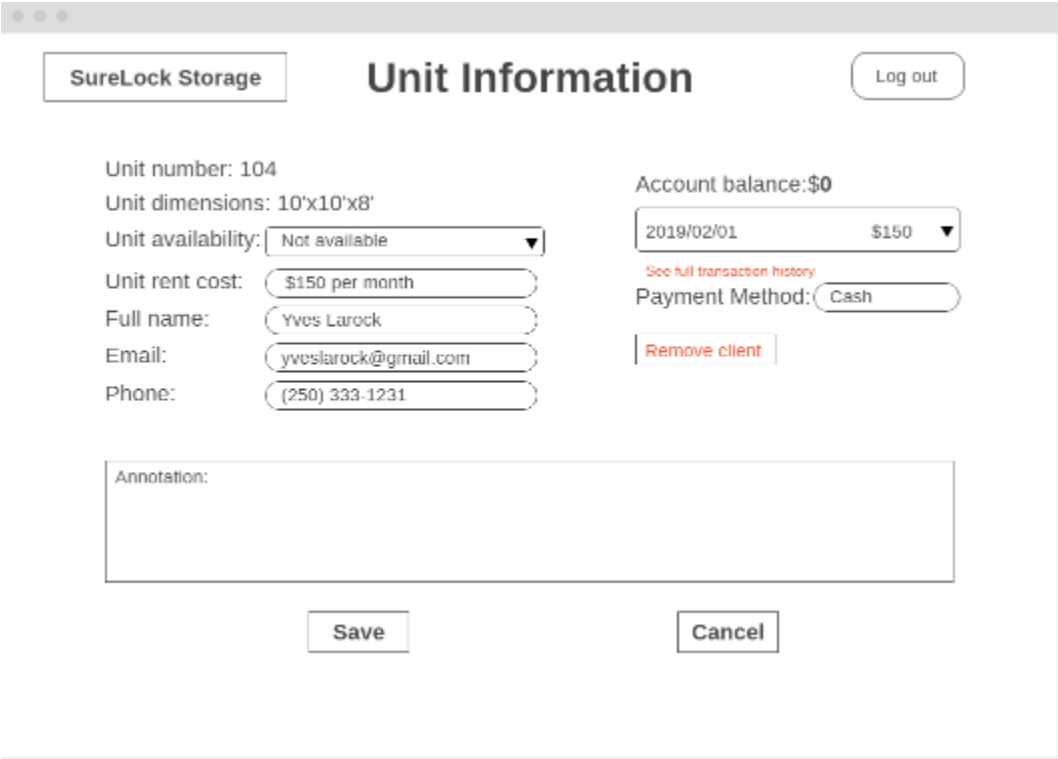

Figure 16.3: UCSUI-05 UI Screen 3 – Unit Information Editing Screen

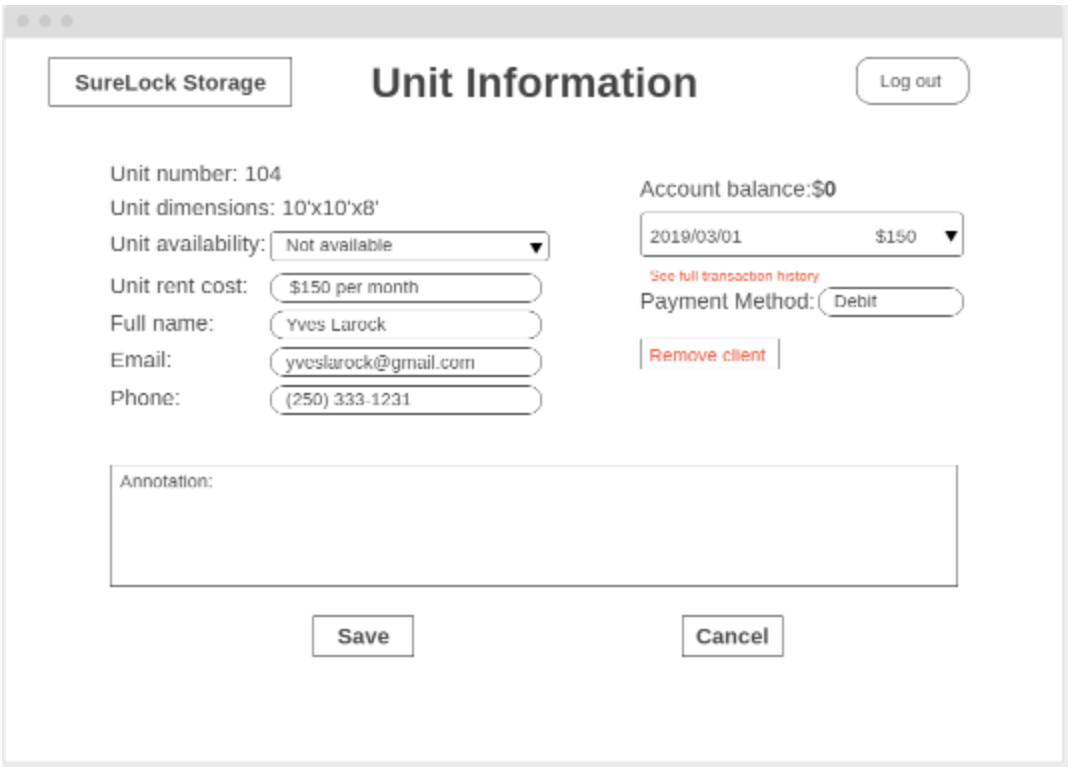

Figure 16.4: UCSUI-05 UI Screen 4 – Unit Information Editing Screen with Debit

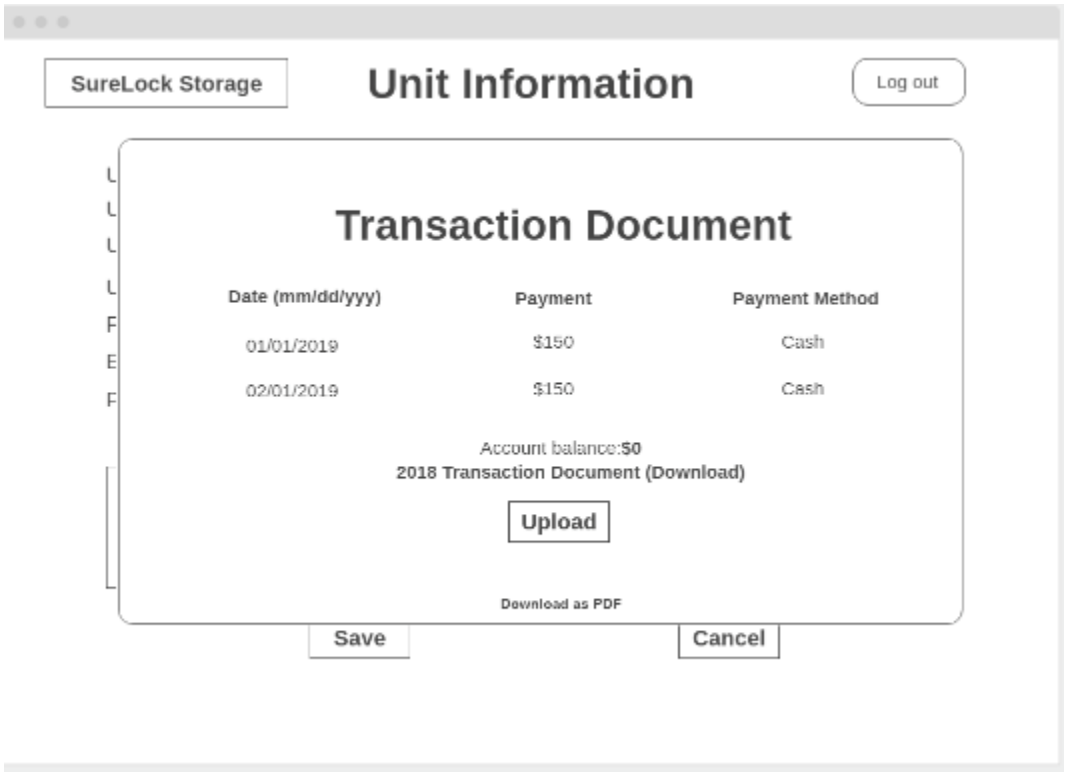

Figure 16.5: UCSUI-05 UI Screen Alternate 1 – Uploading Transaction Document Screen

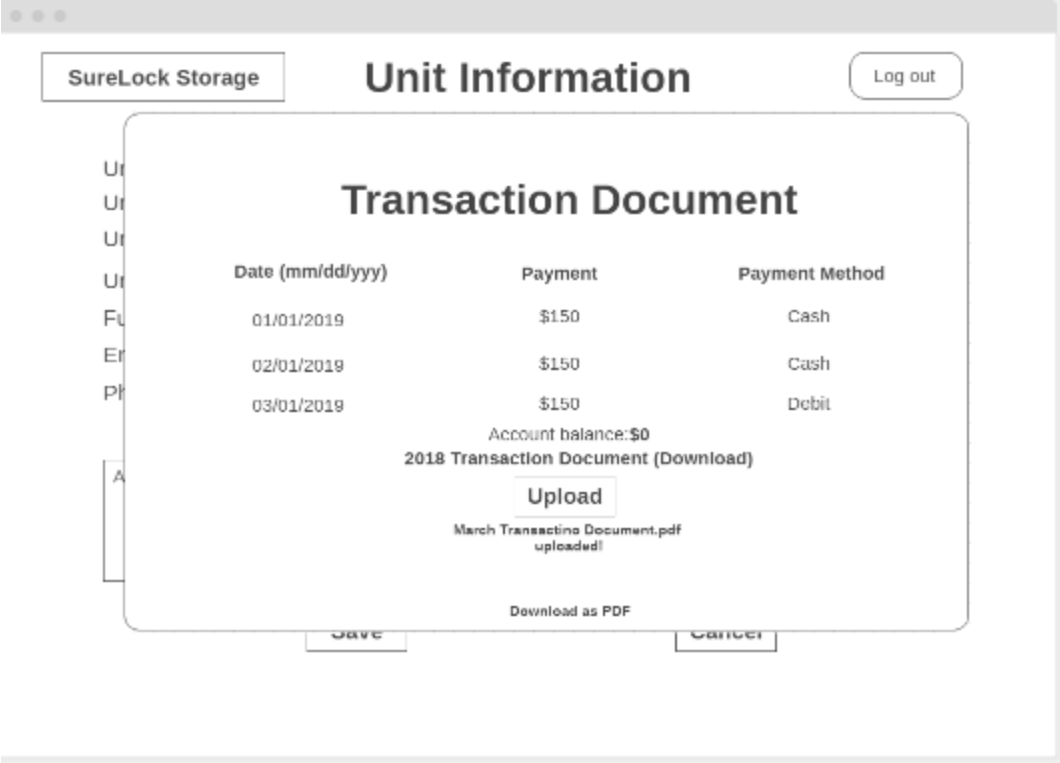

Figure 16.6: UCSUI-05 UI Screen Alternate 2 – Uploaded Transaction Document Screen

The user will be able to click on a unit in the facility map. The user will be directed to the unit information page of the selected unit. The user will be able to select the payment method and enter a payment amount. This will update the account balance corresponding to the amount paid. The user will be able to see the full transaction history by clicking on the “See full transaction history” button. They will also be able to upload a document a transaction document by clicking on the “Upload” button. A success message will be displayed after the file has been uploaded.

Use Case UCSUI-06: Edit Unit Information
Actors: Administrators
Precondition: The user has logged in under an Administrator account
Steps:

1. The user selects a unit from the map
2. The user views the information specified in Use Case SUI-01
3. The user edits the following fields:
    - Unit Availability
    - Unit Rent Cost
    - Unit Current Balance
    - Client’s Full Name
    - Client’s Email
    - Client’s Phone Number
    - Client’s Payment Methods

- Transaction Documents
- Last Payment Date

Success Condition: The user views the updated unit information

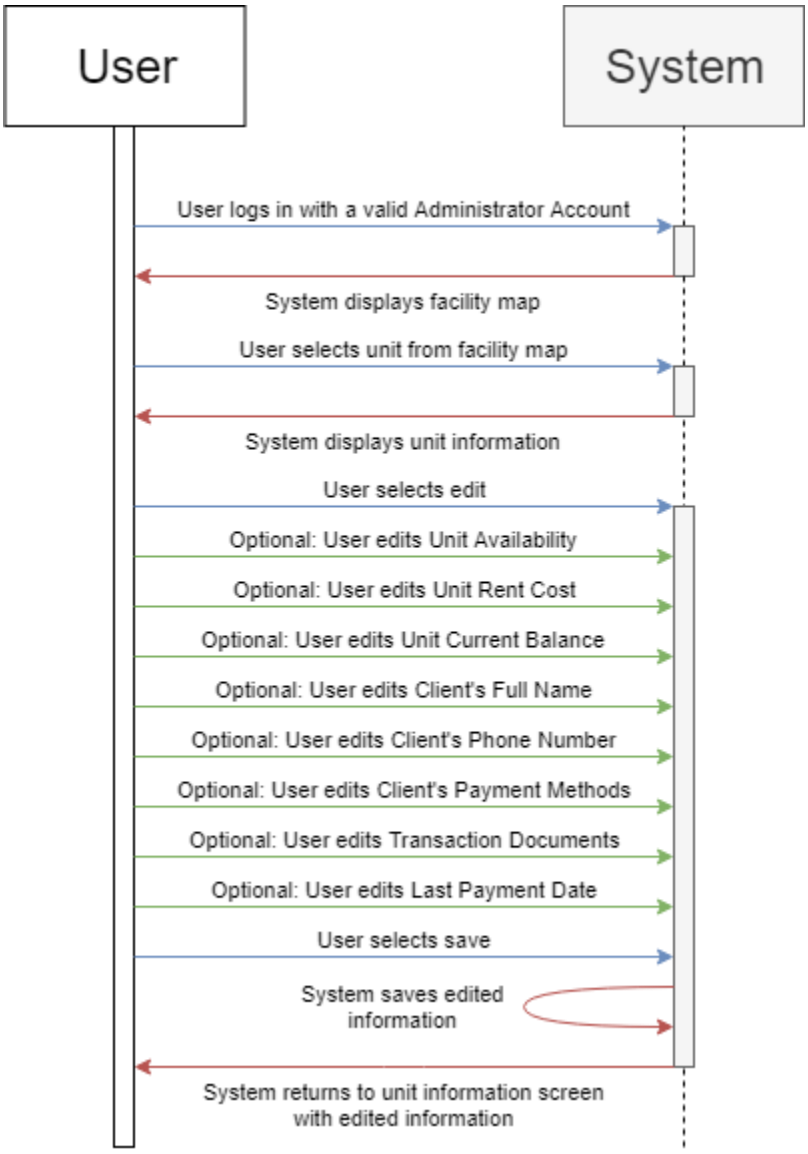

Figure 17: UCSUI-06 Sequence Diagram

Figure 17.1: UCSUI-06 UI Screen 1 – Map Screen

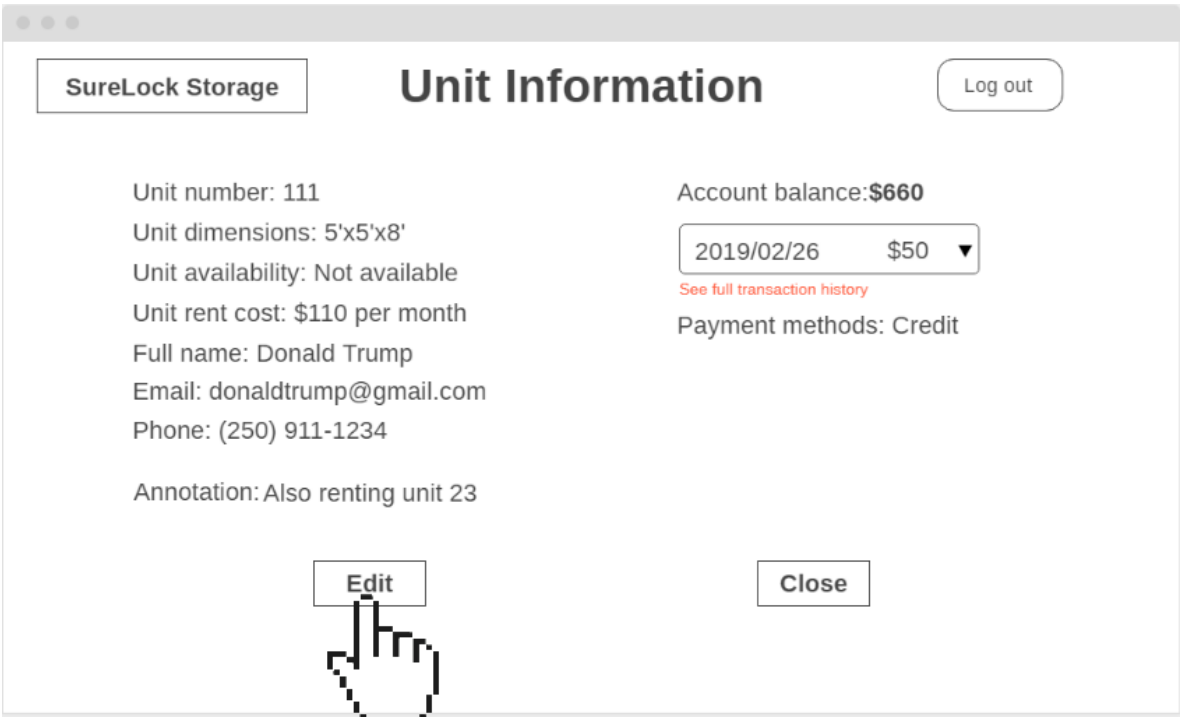

Figure 17.2: UCSUI-06 UI Screen 2 – Unit Information Screen

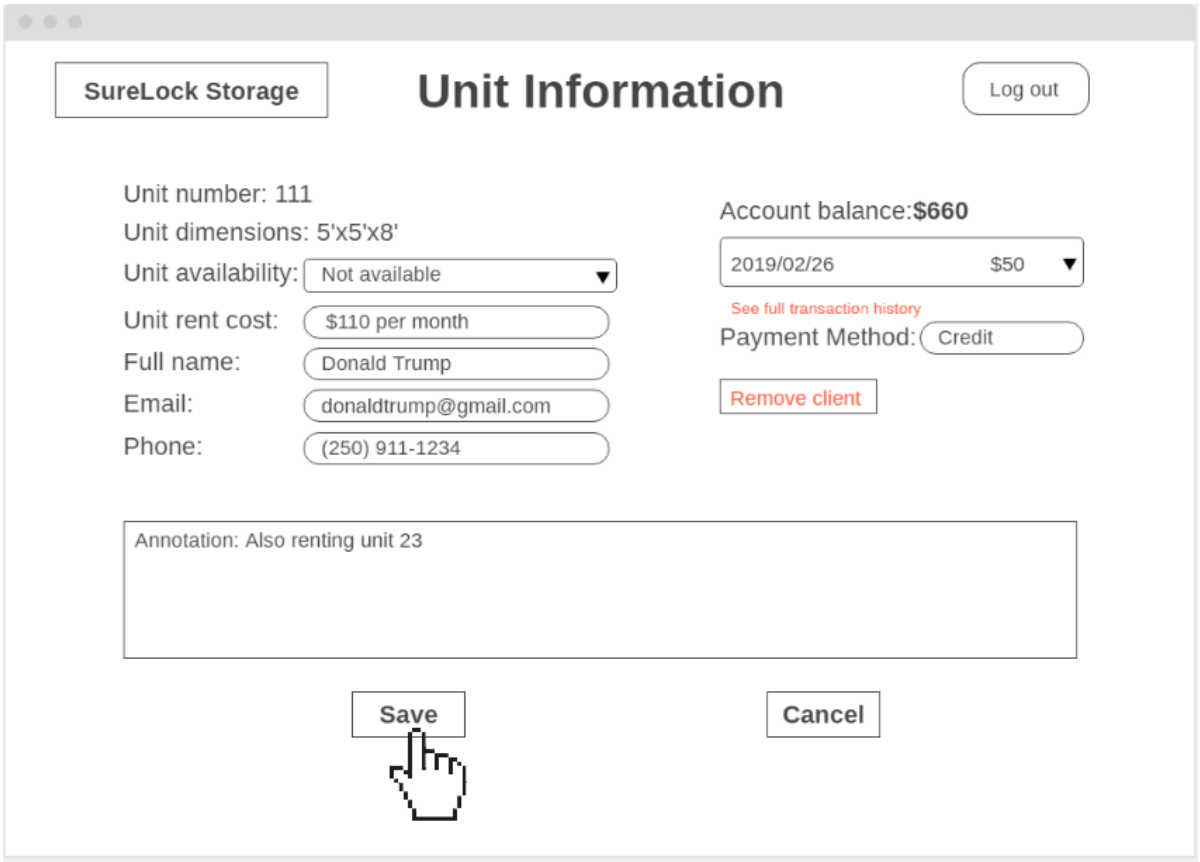

Figure 17.3: UCSUI-06 UI Screen 3 – Unit Information Editing Screen

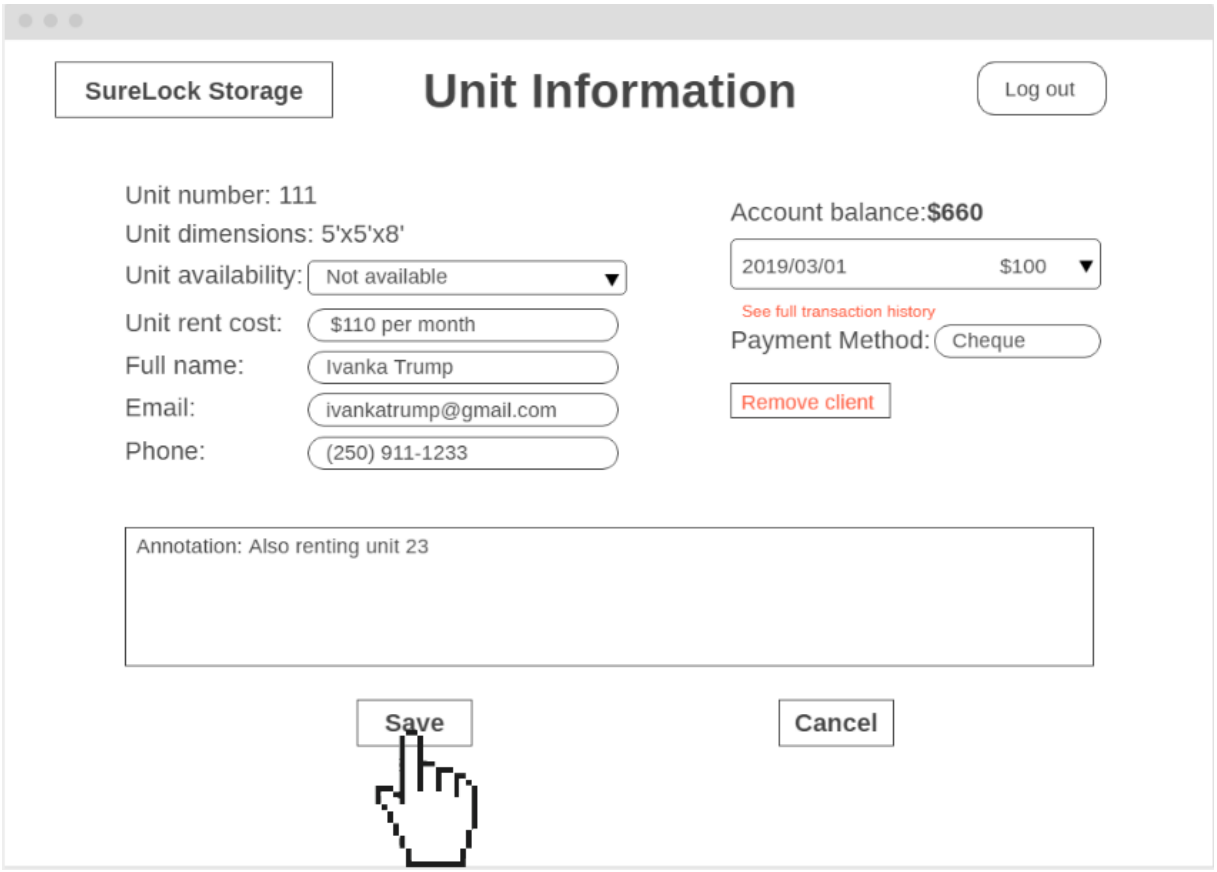

Figure 17.4: UCSUI-06 UI Screen 4 – Unit Information Editing Screen Edited

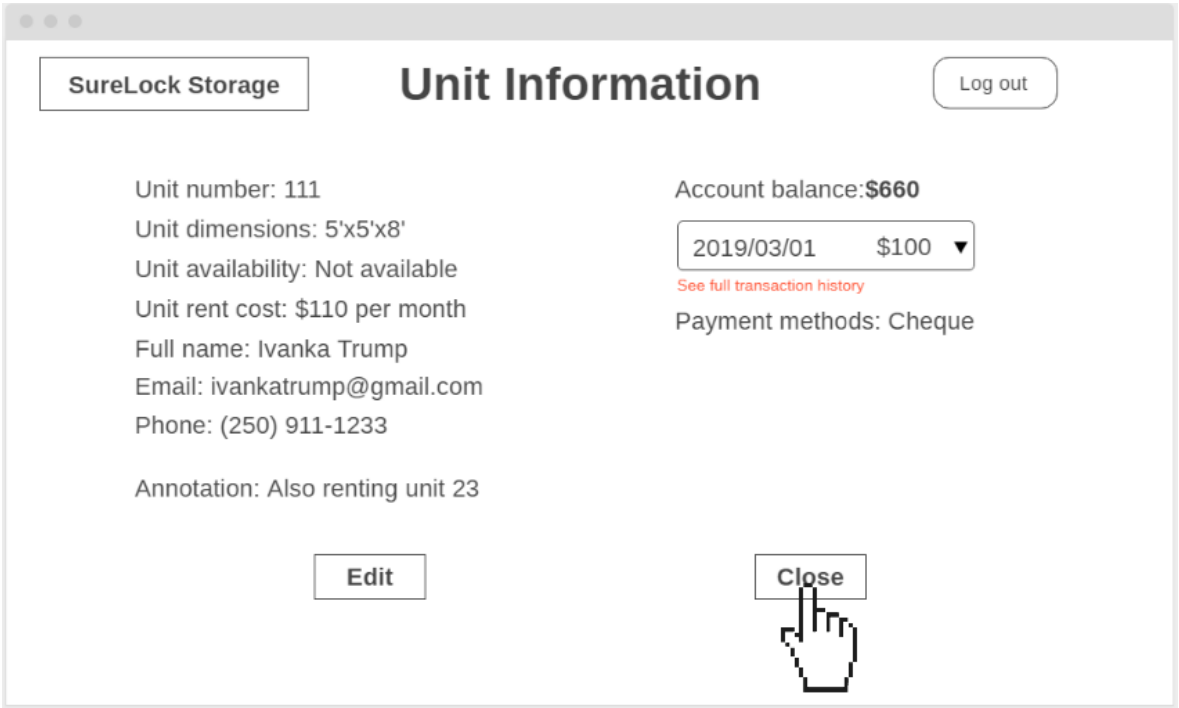

Figure 17.5: UCSUI-06 UI Screen 5 – Unit Information Screen Edited

The Administrator selects the unit in the facility map. The Administrator enters the view mode of the unit information. The Administrator selects the “Edit” button to enter the edit mode of the unit information. The Administrator edits the unit availability, unit rent cost, unit current balance, client’s full name, client’s email, client’s phone number, client’s payment methods, transaction documents, and last payment date. The Administrator selects the “Save” button to save the changes. The Administrator sees the new changes in the view mode of the unit information.

7.3.4 System Searching Feature Use Cases

Use Case UCSSF-01: Search by Client Information
Actors: Staff Members and Administrators
Precondition: The user has logged in under a valid account
Steps:

1. The user selects the searching feature
2. The user enters a client’s full name
3. The system displays one or more units with the full name of the specified client assigned
4. The user selects the desired unit and views the unit information

Success Condition: The desired unit information is displayed to the user
Alternate Paths:

- 2a) The user enters a client’s phone number
- 2b) The user enters a client’s email

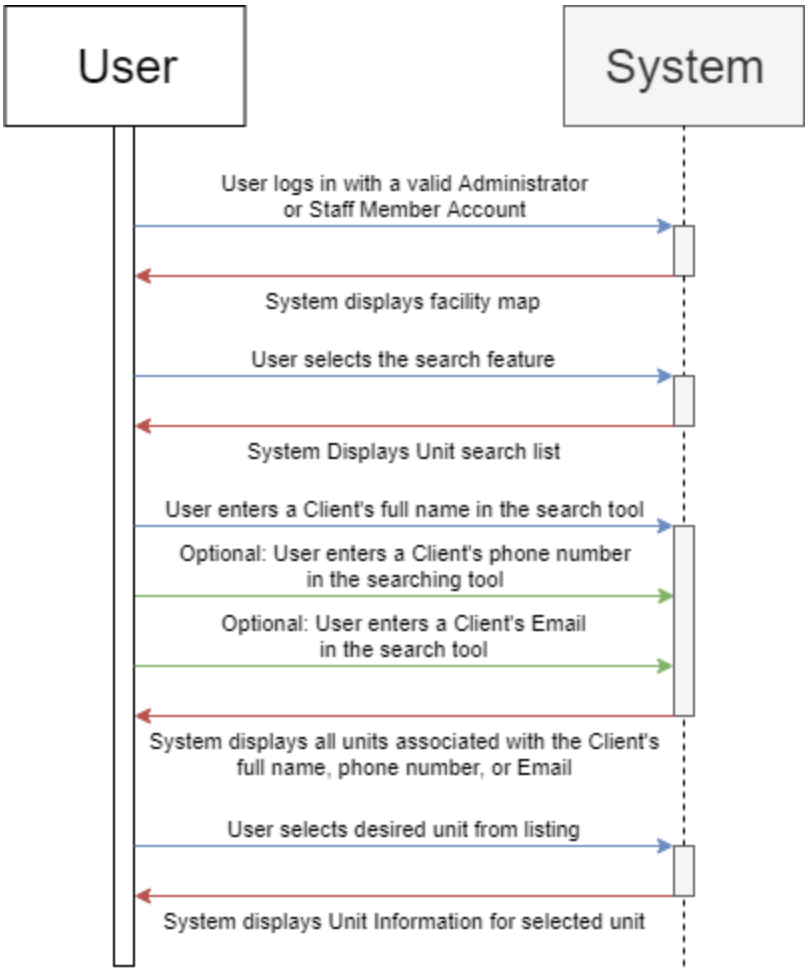

Figure 18: UCSSF-01 Sequence Diagram

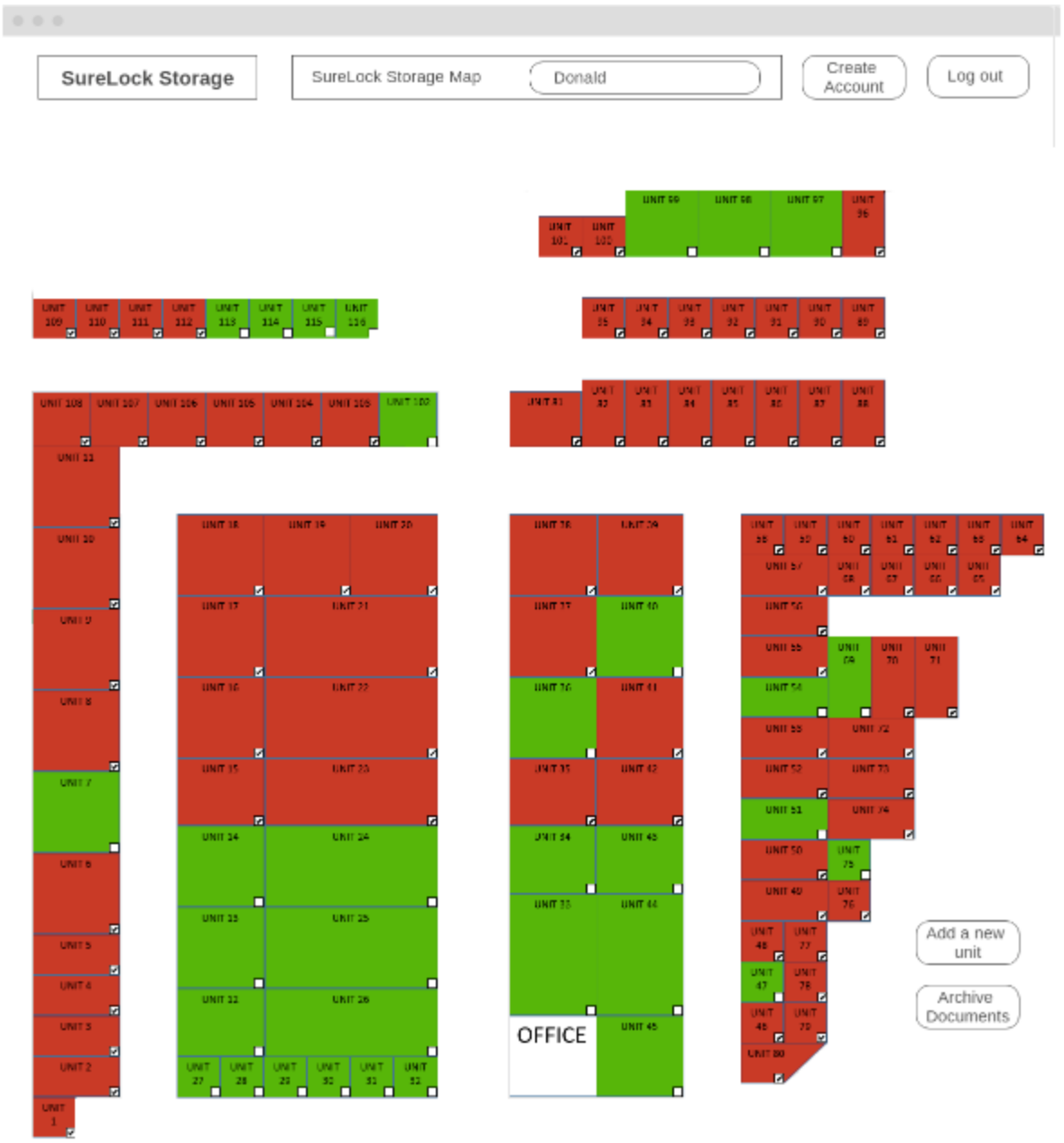

Figure 18.1: UCSSF-01 UI Screen 1 – Map Screen

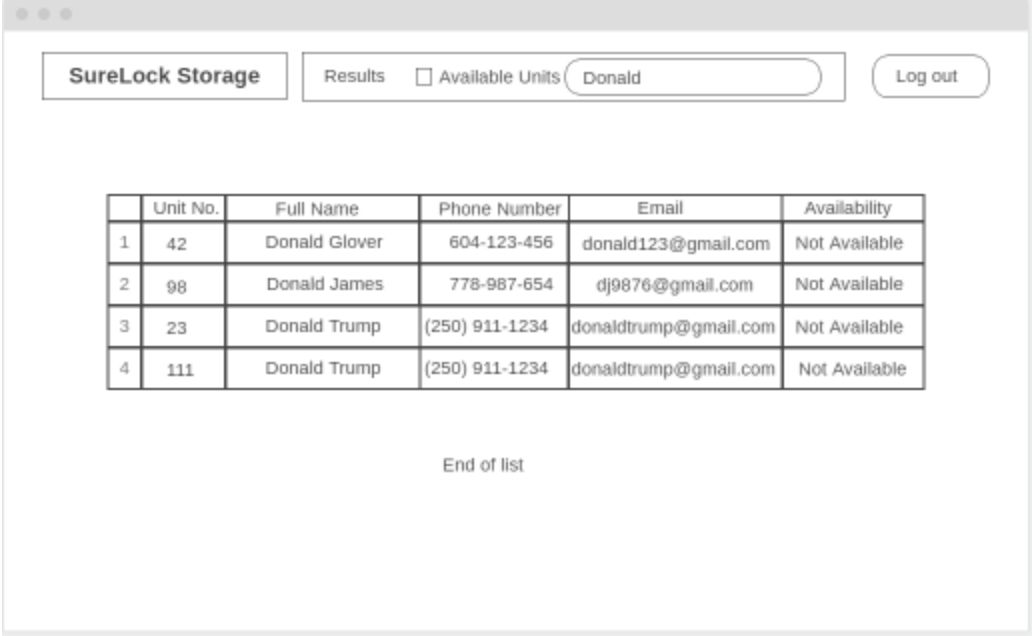

Figure 18.2: UCSSF-01 UI Screen 2 – Search Feature Screen

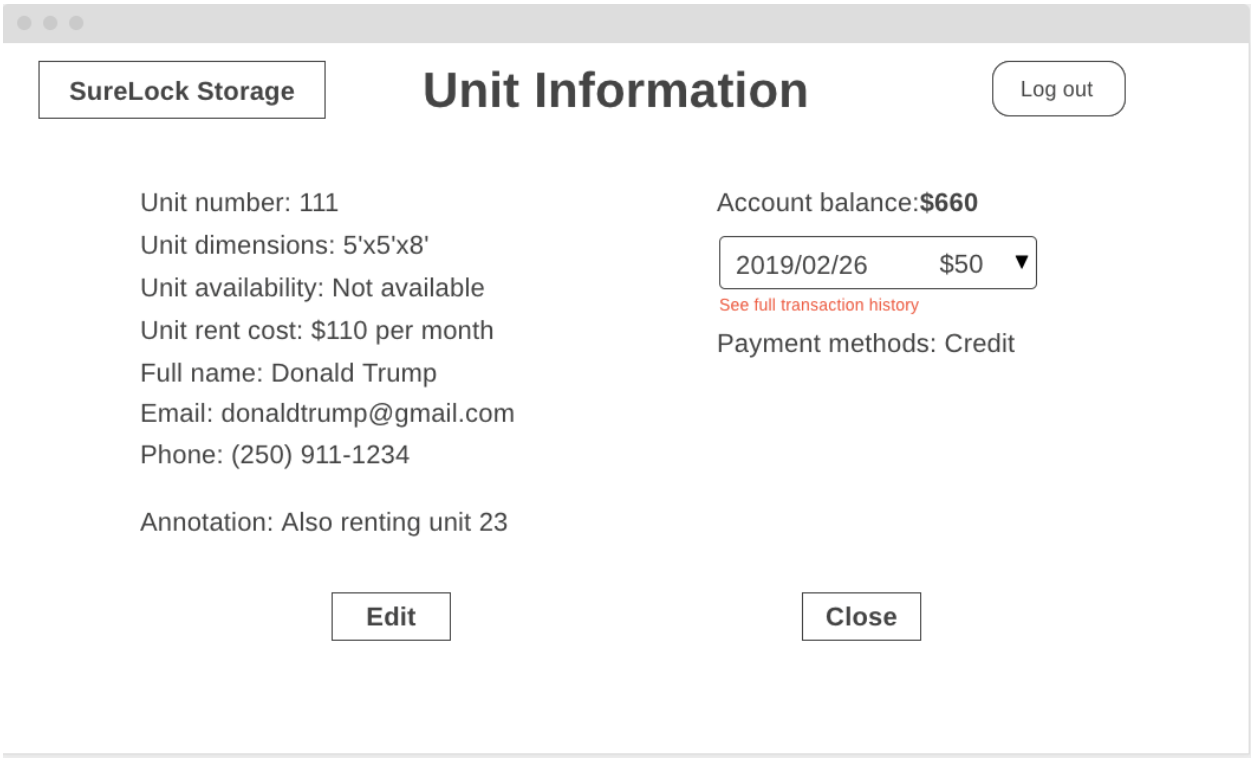

Figure 18.3: UCSSF-01 UI Screen 3 – Unit Information Screen

The user enters a client's full name in the search bar on top of the facility map page. The system will display one or more units with the name entered in the search bar. The user will be able to select the desired unit, which will direct the user to the unit information page of the

selected unit. The user will be able to search the units with client's phone number or email as well.

Use Case UCSSF-02: Search by Unit Information
Actors: Staff Members and Administrators
Precondition: The user has logged in under a valid account
Steps:

1. The user selects the searching feature
2. The user enters a unit number
3. The system displays one or more units with the matching unit number
4. The user selects the desired unit and views the unit information

Success Condition: The desired unit information is displayed to the user

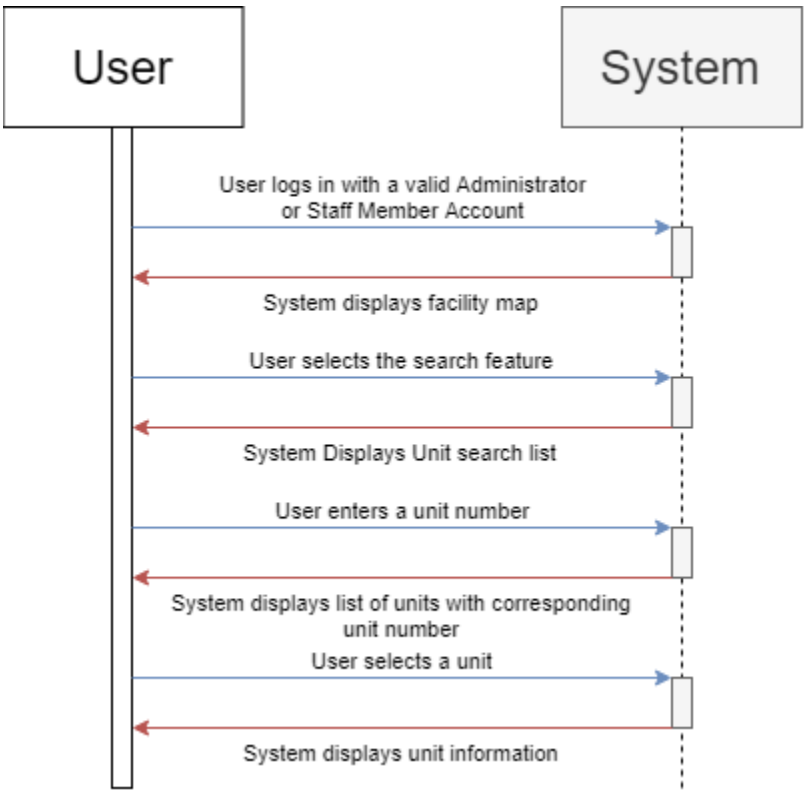

Figure 19: UCSSF-02 Sequence Diagram

Figure 19.1: UCSSF-02 UI Screen 1 – Map Screen

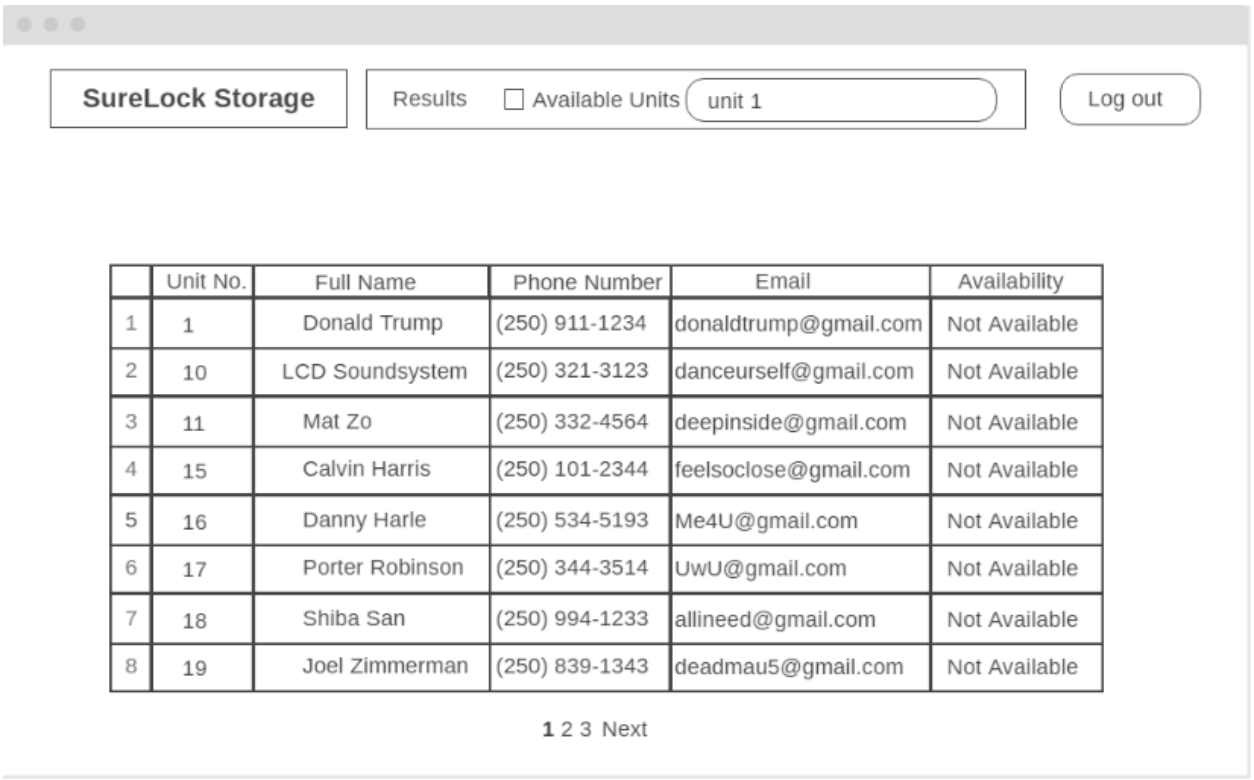

Figure 19.2: UCSSF-02 UI Screen 2 – Search Results Screen

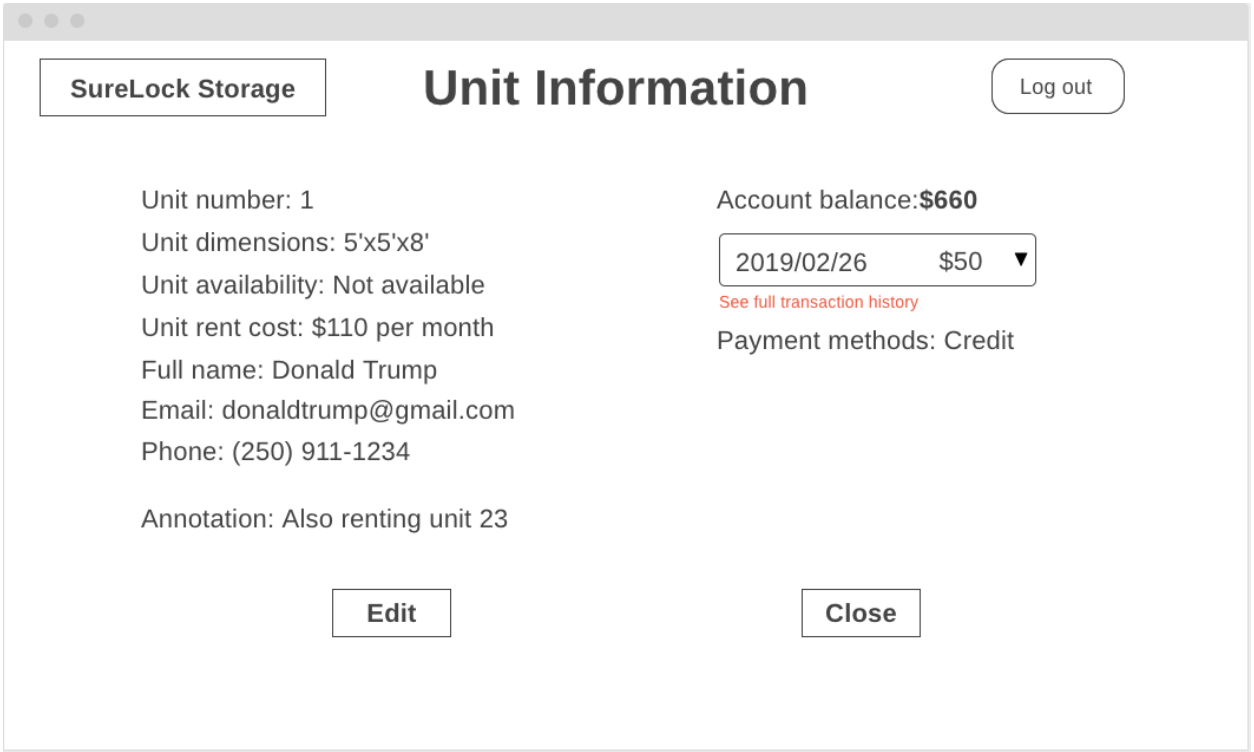

Figure 19.3: UCSSF-02 UI Screen 3 – Unit Information Screen

The user will be able to enter the unit number in the search bar on top of the facility map page. The system displays one or more units with the matching unit number. The user can then select the unit from the list, and they will be directed to the unit information page of the selected unit.

Use Case UCSSF-03: Filter by Availability
Actors: Staff Members and Administrators
Precondition: The user has logged in under a valid account
Steps:

1. The user selects the searching feature
2. The user sets the filter to available units only
3. The system displays a list of each available unit
4. The user selects the desired unit

Success Condition: The desired unit information is displayed to the user
Alternate Path: 2a) The user filters for not available units

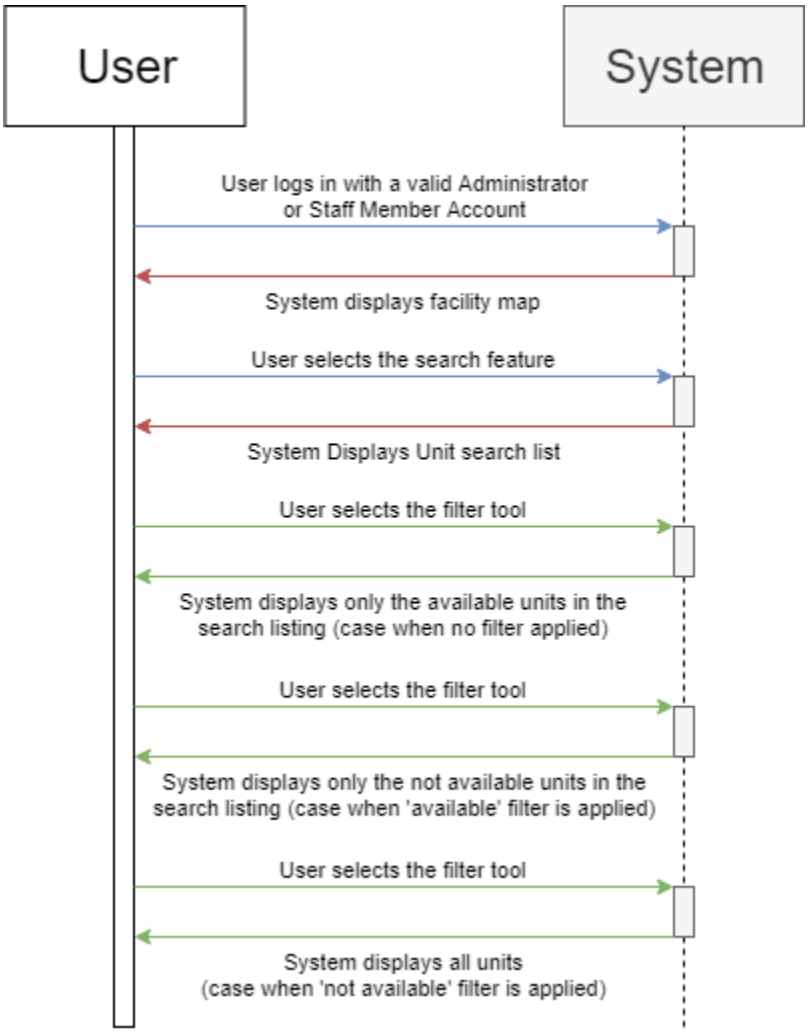

Figure 20: UCSSF-03 Sequence Diagram

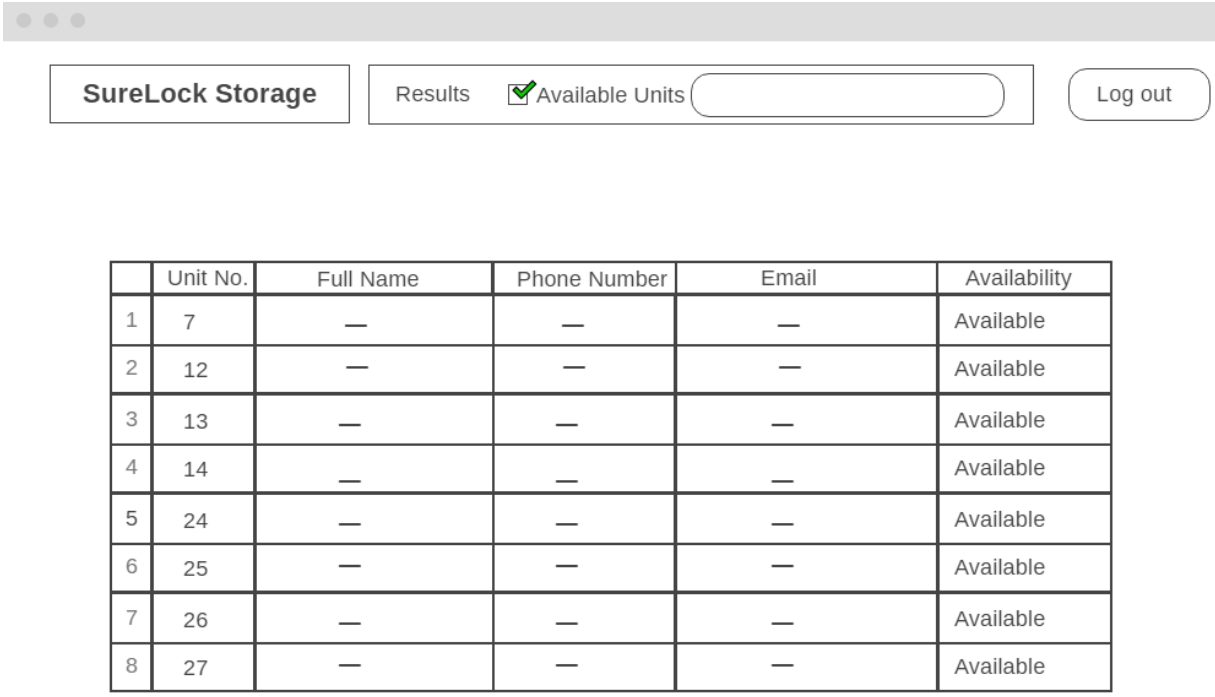

Figure 20.1: UCSSF-03 UI Screen – Available Units Search Screen

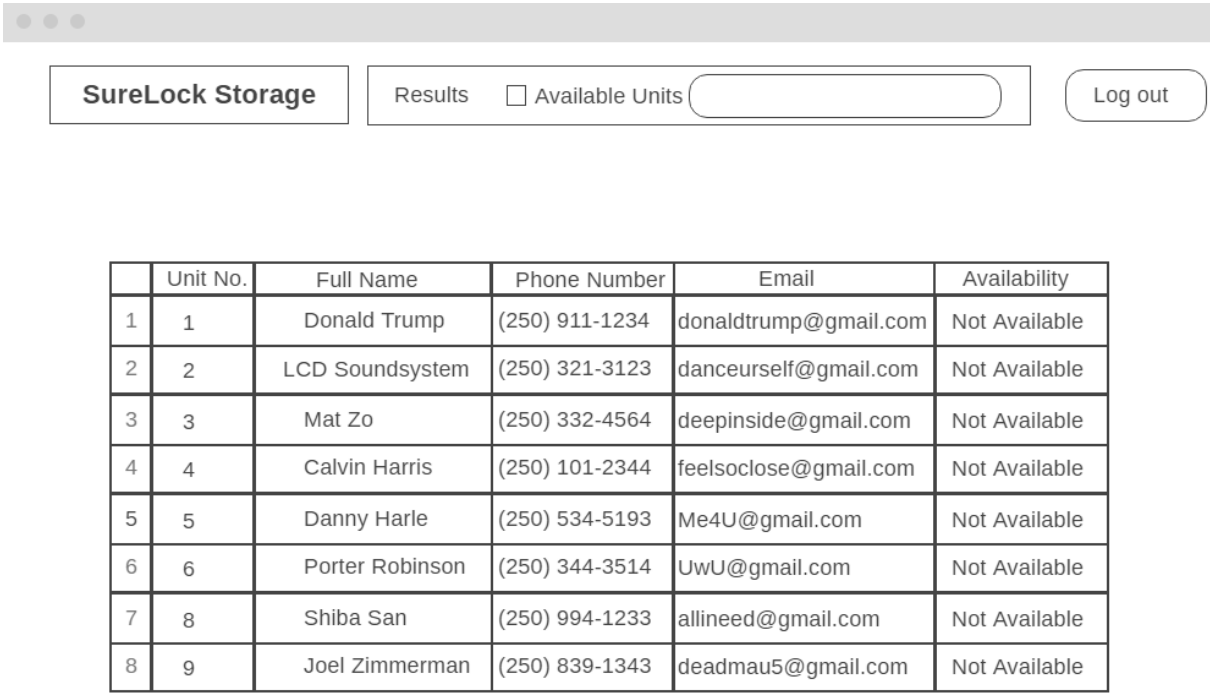

Figure 20.2: UCSSF-03 UI Screen Alternate – Unavailable Units Search Screen

The user clicks a search bar. By clicking on the checkbox next to “Available Units”, the system will display the list of currently available units. For the alternate path, the system will display the list of unavailable units if the user does not click on the checkbox.

Use Case UCSSF-04: Search for Archived Transaction Documents
Actors: Administrators
Precondition: The user has logged in under an Administrator account
Steps:

1. The user selects the archive search feature
2. The user enters the unit number associated with the desired transaction document
3. The system displays one or more transaction documents that match the inputted information

Success Condition: The desired transaction document is displayed to the user
Alternate Paths:

- 2a) The user enters a file name
- 2b) The user enters the full name of the client associated with the desired transaction document

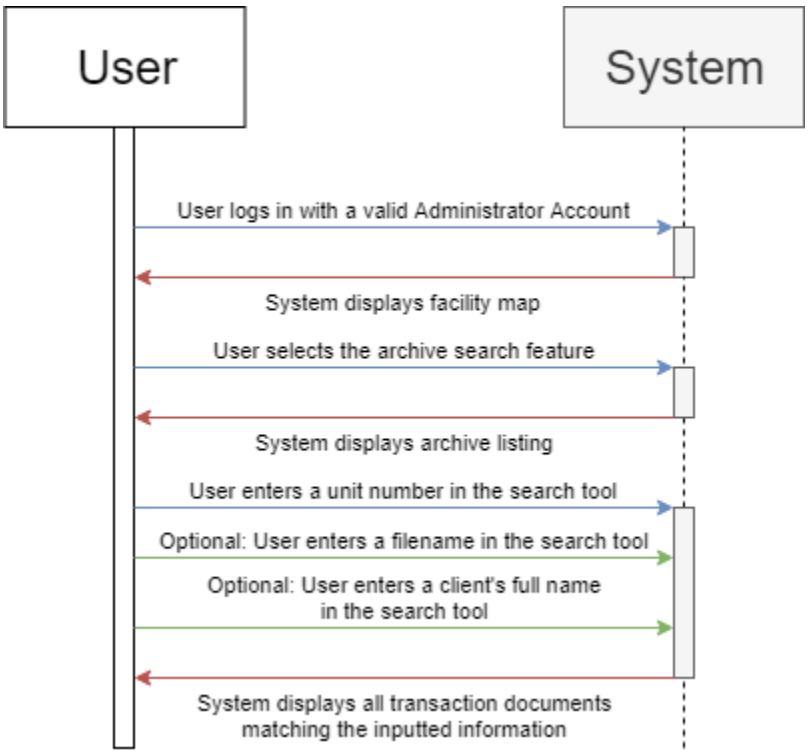

Figure 21: UCSSF-04 Sequence Diagram

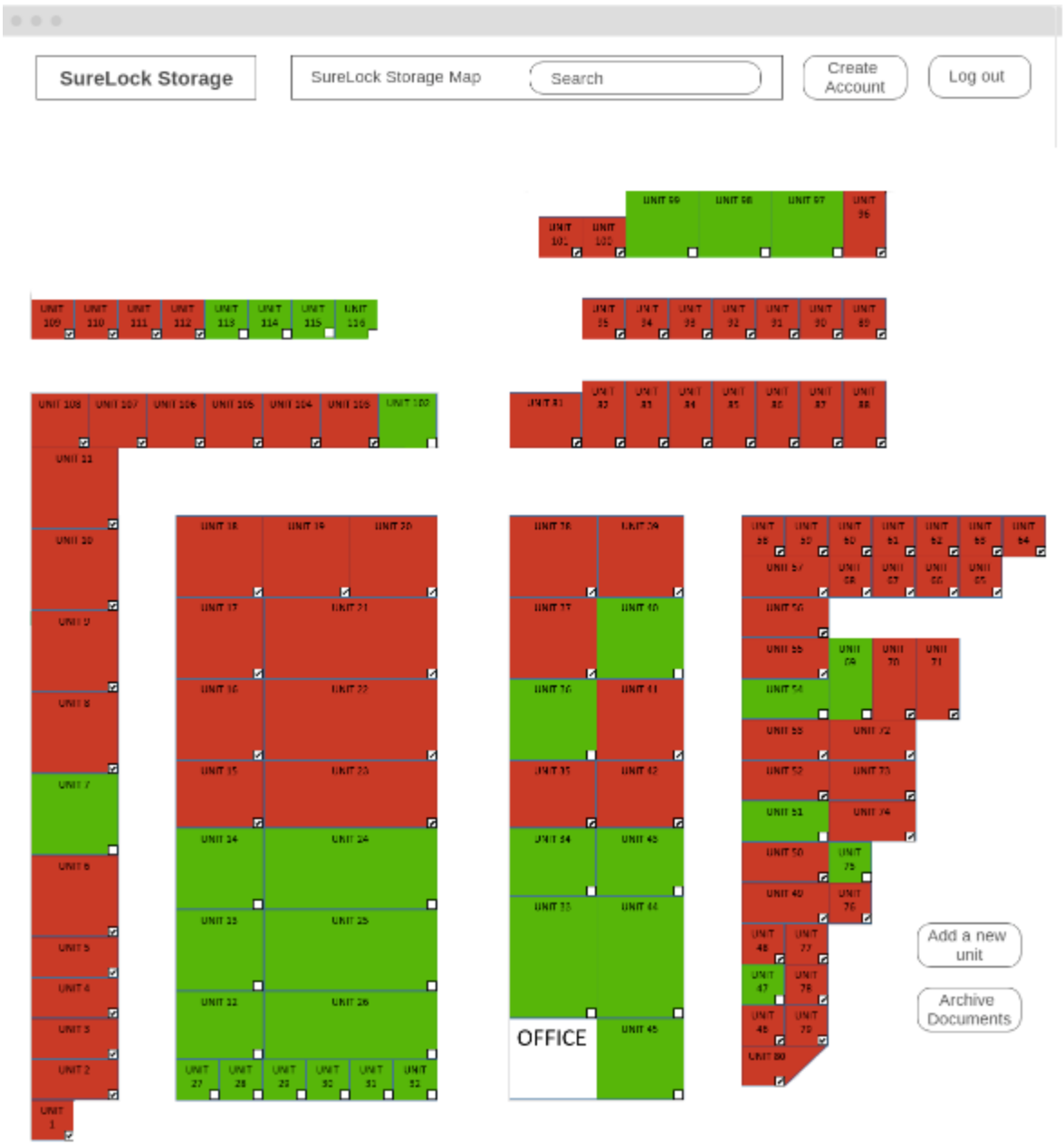

Figure 21.1: UCSSF-04 UI Screen 1 – Map Screen

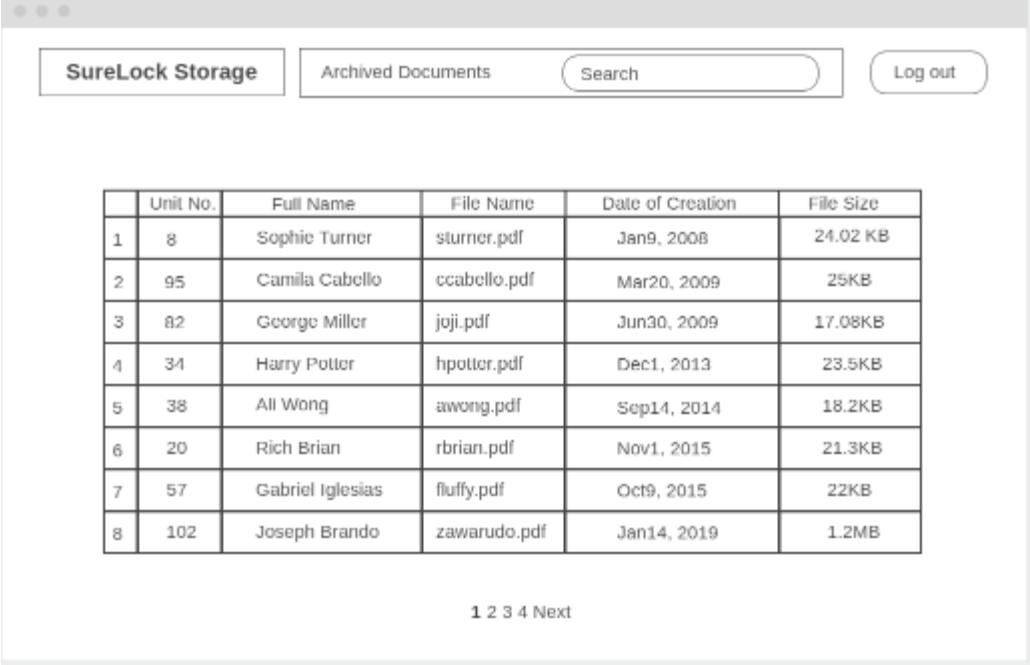

Figure 21.2: UCSSF-04 UI Screen 2 – Archive Screen

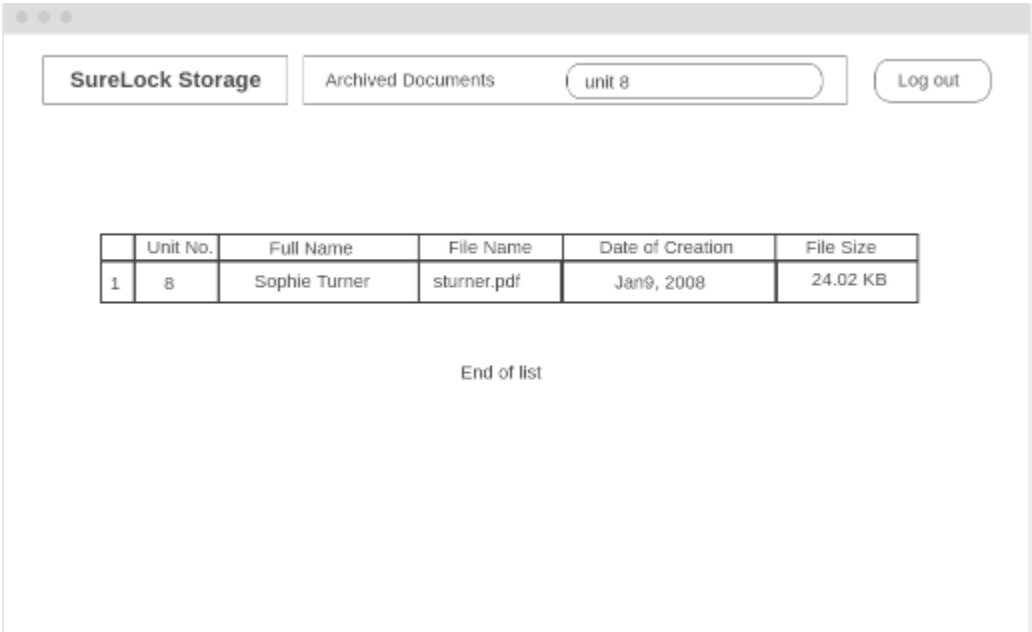

Figure 21.3: UCSSF-04 UI Screen 3 – Archive Screen with Search Results

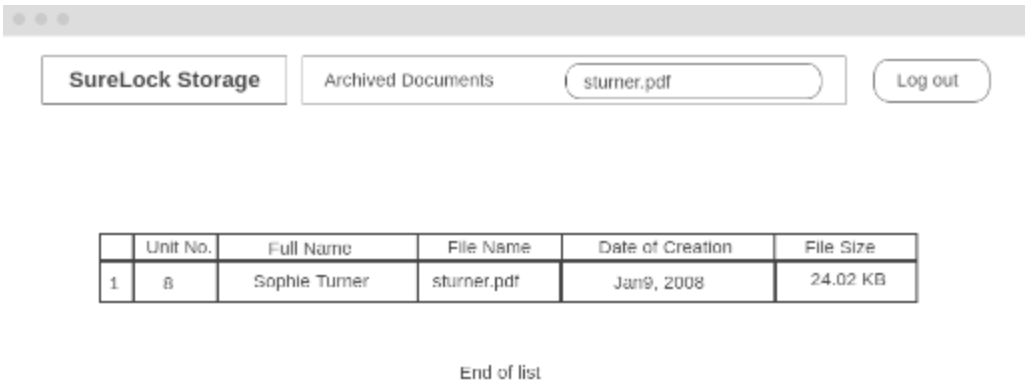

Figure 21.4: UCSSF-04 UI Screen 4 – Archive Screen with Search Results by File

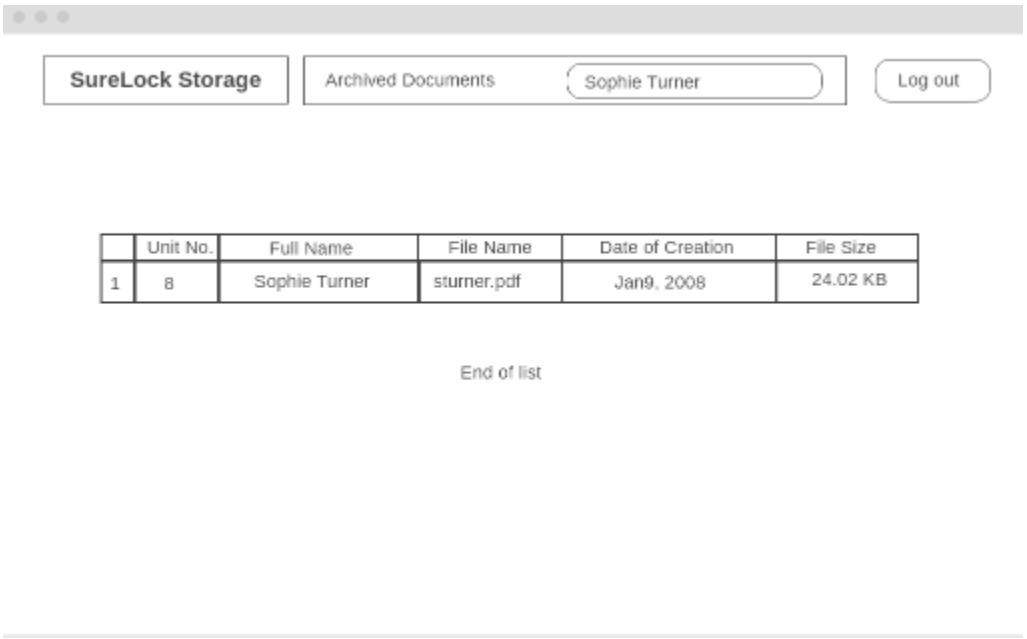

Figure 21.5: UCSSF-04 UI Screen 4 – Archive Screen with Search Results by Name

The user will be able to click on the “Archive Documents” button on the facility map page. The user will be directed to the Archived Documents page where they can enter a unit number, file name or full name of the client associated with the transaction document in the search bar on the top of the page. The system will display one or more transaction documents that match the entered unit number.

7.4 Use Case Model

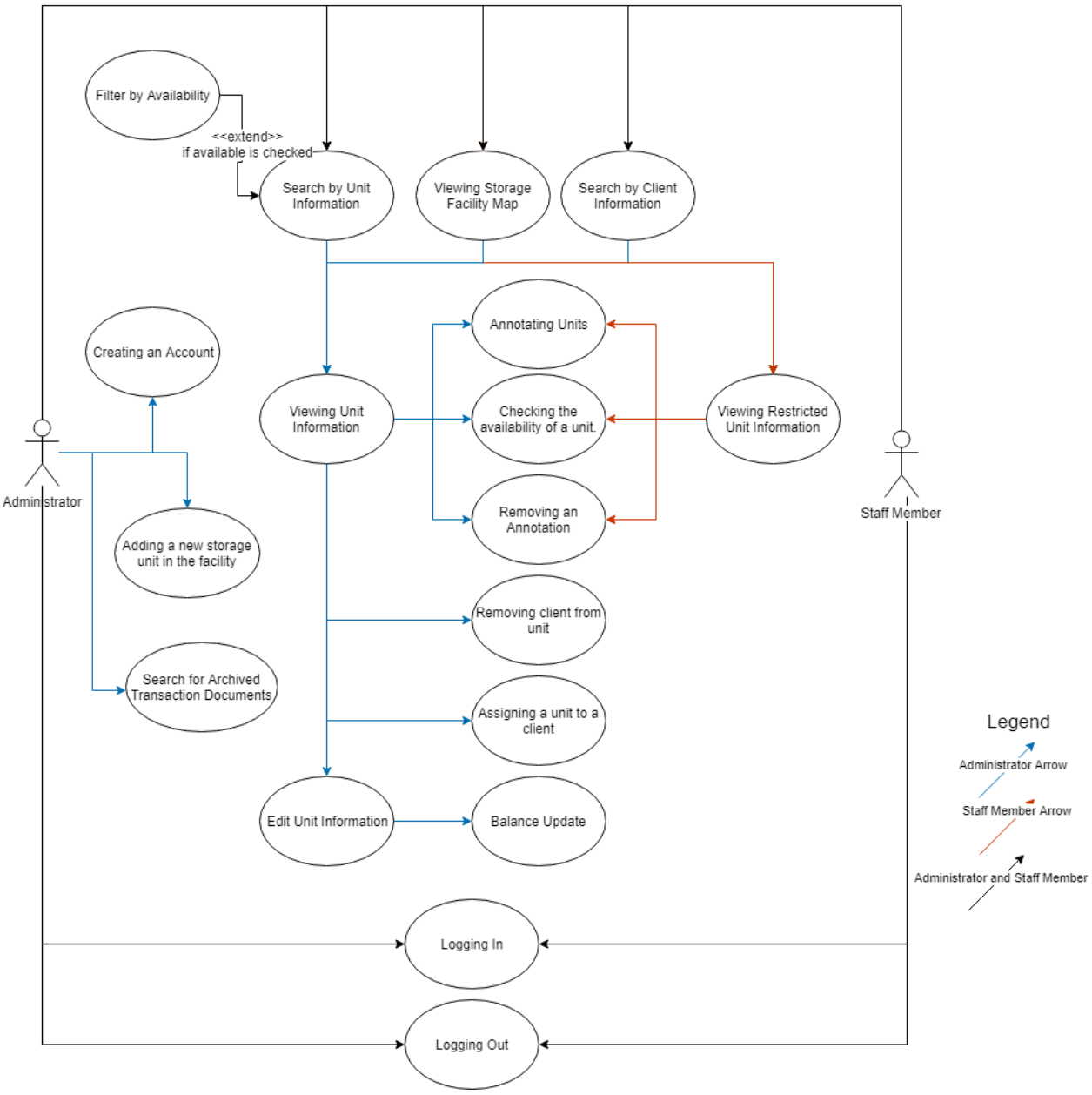

Figure 22: Use Case Model