Requirements Document
SureLock Storage Management System

Golf Island Software

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Revision History

Name	Date	Reason for Changes	Version
Entire Team (Group 4: Andy Smith, Eric Wiebe, Jared Larter, Jeremy Megyesi, Mona Soleimanieh, Rhett Devin, Ryan Russell, Subah Mehrotra)	Jan. 30th, 2019	Initial document creation	1.0
Entire Team	Feb. 2nd, 2019	First formal review	2.0
Entire Team	Feb. 5th, 2019	Second formal review and document submission	3.0

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 looks 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 the client's 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. Administrators will have the ability to view and edit all client and unit information, while hourly employees can only view specific information regarding unit status and the unit's corresponding client. Accounts for both levels of user will be password protected. This security will protect client information and make changes traceable.

All data will be handled and displayed using three subsystems: a storage unit viewing system, a client account system, and a searching system. The three subsystems will provide users with context of where storage units are located and who is renting the unit, in addition to making client 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 employees. The IT Team has full system access.

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

User: The hourly employee or administrator who will be using the software system.

Administrator: The higher-level employee/manager of SureLock Storage who has access to all system features and client information.

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 6 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.

2 Overall Description

2.1 Product Perspective

The new software 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 payment info, 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. The administrative staff will have full access to the system, while the hourly employees will have restricted access credentials.

2.2 Product Features

The system has five main features: storage facility information, storage unit information, client account, account balance update, and the system searching feature. The storage facility information features a map of the storage units in the facility. Each unit displayed in the storage facility interface will link to the corresponding storage unit in the storage unit

information interface. The storage unit information interface will include unit details such as current client renting the unit, unit dimensions, and unit cost. The client account interface details the client information for each client renting storage units. Client information includes full name, contact information, currently rented units, current balance, and current rate. Client information will be editable by system administrators. The account balance update system is used to add and subtract funds from client accounts. Finally, the searching system will search through the storage units by unit number, and will search through the clients by last name.

2.3 User Classes and Characteristics

The two intended user groups for this system are the administrators and the hourly employees at SureLock Storage. The system will require the employees to login with a username and a password.

The administrators will have different accounts that will allow them to add, remove, and edit information for units and clients. Additionally, they will be able to add new storage units to the system if needed in the future.

Hourly employees will be restricted to accessing unit specific information (such as unit vacancy) and basic client information (full name, email, and phone number). They will not be able to access sensitive client information. They will not be able to add or edit information, but they will be able to annotate unit information.

Stakeholders of the system consist of the employees and management 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 administrator accounts specific to each individual, with each account having a corresponding password. Hourly employees must have access to the new system using separate hourly employee accounts and passwords (specific to each individual), where the accounts are created and assigned by management with the help of the IT team. 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
SureLock management (administrators) must have full access to updating and editing client information on the new system. SureLock's hourly employees must be able to view information relating to storage locker vacancy and add necessary notes, but must not have access to any sensitive client information such as payment details.

Payment Ledger
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 new system is to record transactions, it is not required to interact with payments directly. Rather, payments occur separately and are logged in the new system.
- Hourly employees are not responsible for adding new clients or updating client information. That is, strictly SureLock management will add or update client information.

3 System Features

This section details five 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. It is of high importance and consists of viewing the location of individual units in the facility and assigning units to clients.

Priority: High

3.1.2 Functional Requirements

REQ-SFI-01: The system must have 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 the unit's information.

REQ-SFI-03: The system must be able to identify and display the storage units that are empty and available to rent.

REQ-SFI-04: The user must be able to assign available units to a client using the system.

- If the client does not have an account, there will be an option to redirect to the new client account creation. Then, the newly created account will be assigned to the available unit.
- If the unit is not available, the user will not be able to assign an additional client to it.

REQ-SFI-05: The system must allow additional units to be added, which includes updating 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 from the facility.

Priority: High

3.2.2 Functional Requirements

REQ-SUI-01: The system must allow users to view unit information.

- The information must include:
  - Client that rents the unit
  - Dimensions of the unit
  - Availability of the unit
  - Cost to rent the unit
  - Additional information on the unit

3.3 Client Account

3.3.1 Description and Priority

Being able to view a client's personal information, payment methods, current balance, and which storage units the client is renting is of high importance to users of the system. Therefore, the client account is a primary function of the system.

Priority: High

3.3.2 Functional Requirements

REQ-CA-01: The system must allow a user to create new client accounts and delete existing client accounts.

REQ-CA-02: The system must allow users to view and update personal information for each client.

- The personal information must include:
    - Full Name
    - Email
    - Phone Number
    - Current Rate
    - Payment Methods
    - Account Balance
    - Last Payment Date
    - Currently Rented Units

REQ-CA-03: Each client account must contain links to the unit information for each currently rented unit and the storage facility map.

REQ-CA-04: Each client account must allow users to add, remove, and view associated transaction documents for that client.

3.4 Account Balance Update

3.4.1 Description and Priority

Updating the account balance is required for users to quickly check if a client has paid for their storage unit. An accurate account balance is necessary information for administrators and management to determine if a client should be offered a second storage unit.

Priority: High

3.4.2 Functional Requirements

REQ-ABU-01: The system must allow users to update a client's account balance: entering a payment amount decreases the account balance and entering an owed amount increases the account balance.

3.5 System Searching Feature

3.5.1 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 and management valuable time when interacting with the system.

Priority: Medium

3.5.2 Functional Requirements

REQ-SSF-01: The system must allow users to search for a client by last name and view transaction documents associated with that client account specified in section 3.3.

REQ-SSF-02: The system must allow users to search for a unit by unit number and view the unit information specified in section 3.2.

4 External Interface Requirements

4.1 User Interfaces

REQ-EI-01: The system should share a similar screen layout as Microsoft Excel.

REQ-EI-02: The system should include shortcuts from Microsoft Excel for interacting with tables.
- The included shortcuts should be implemented to:
  - Select an entire row
  - Select an entire column
  - Hide rows
  - Hide columns

4.2 Software Interfaces

REQ-EI-04: The systems must be able to import and export Microsoft Excel documents.

REQ-EI-05: The systems must be able to function in Microsoft Windows 7, 8, 8.1, and 10.

5 Other Non-Functional Requirements

5.1 Performance Requirements

REQ-NF-01: Searching for a storage unit in the system should take less 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: The system must support at least 200 storage units.

REQ-NF-05: The system should be able to handle 5 users simultaneously.

5.2 Security Requirements

REQ-NF-06: The system must require a username and password for sign-in.

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

REQ-NF-08: The system must have two different levels of access hierarchy for the administrator accounts and the hourly employee accounts.
- The hourly employee accounts are prevented from adding, editing, or deleting any client or storage unit information.
- When viewing client accounts, the system must restrict the hourly employee accounts to only displaying a client's name, phone number, and email address.
- The administrator accounts have full system access and control.

REQ-NF-09: The system must automatically delete a client's information 2 years after the client ceases renting units.

REQ-NF-10: The hourly employee and administrator accounts in the system can only be created by other administrators in cooperation with the IT team.

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 system must be compliant with Alberta's Personal Information Protection Act [4].