Software Requirements Specification

for

Property Maintenance Management

Version 1.0 approved

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Revision History

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| --- | --- | --- | --- |
| **Name** | **Date** | **Reason For Changes** | **Version** |
| Property Maintenance Management Software | March 6th 2023 | Phase 1 | 1 |
|  |  |  |  |

# Introduction

## Purpose

Property management software can be used to handle leases and screen renters. There are communication tools so that property managers and renters may exchange information about maintenance needs, make public announcements, and keep track of accounting.

## Document Conventions

Headings have been written in bold font and Subheadings have been written in bigger font to provide emphasis. The points in all sections have been written in the order of their priority, from higher priority points to lower priority points, so that important points are not missed out. Key points and Abbreviations are used in some places which will be understood by the developers of the application.

## Intended Audience and Reading Suggestions

The intended audience is the team of developers who will be designing and implementing the Property Maintenance Management Software. Also, the document is to be utilized by the teasting team who will be testing and evaluating the performance and design of the application. The document consists of all the necessary information that will be required by the team of software engineers who will be working on the project.

## Product Scope

The property maintenance management software gives management a simple way to get in touch with tenants, collect rent, and organize their financial activities. For tenants who can log in to their account to set up automated payments or request maintenance, it also makes things more convenient.

## References

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# Overall Description

## Perspective

The management and maintenance of properties should be handled effectively and systematically with the help of property maintenance management software. Property owners and managers should benefit from time and money savings as well as an overall improvement in property maintenance.

For the backend databases to accurately track each tenant, include the pertinent tenant-related data. Publish information that property managers can post, such as messages to all tenants in general or messages tailored to a particular unit.

## Product Functions

* User/Tenant Account

Each tenant will have their own account

They will have the ability to login and out

Users will be able to retrieve/reset forgotten passwords.

* Paying rent

Users will be able to pay their rent through the software

Upon submitting payment, a confirmation number will be provided

Users will be able to review their payment history

Users will be able to schedule future, recurring payments

Users will be able to see if they currently have an outstanding balance.

* Maintenance request

Users will be able to submit a maintenance request through the software

A log will be kept of all previous maintenance request

Users will have the ability to attach images to maintenance request

Users will be able to see a notification of any fees associated with the maintenance.

* Communication

Users will be able to send an email to their property manager through the software

Property managers will be able to send out a mass alert through the software.

* Rent Remainder

Tenant can see how many days remaining to pay rent and any dues.

* Documents

Allows uploading leasing or other important documents to a particular resident.

## User Classes and Characteristics

**Client Class**

Client has has Attributes

* Id
* First Name
* Last Name
* Email
* Phone

Operations

* Property info
* Payment Info
* Pay Amount
* Text Admin
* File Complaint
* Complaint Status
* Payment History

**Manager Class**

Manager Class has attributes

* Id
* User Name
* Password

Operation of it

* Property Info
* Client info
* Rent Property
* Reply Client
* Respond Complaint
* Show History

## Operating Environment

Disk Space: 20 MB or more.

Browsers: Mozilla Firefox 30+, Google Chrome 27.0+, Microsoft Edge.

Other browsers can also be used.

Internet connection: Strong internet connection with speed of at least 1

Mbps for best experience.

## Design and Implementation Constraints

* Platform Implementation

The property management software is designed to work with any media player. The browser interfaces are handled by HTML5, and the application will be native for both iOS and Android. It would be necessary to translate the HTML5 interface to an effective Android and iOS without sacrificing any security and privacy standards in order to fully customize to all operating systems.

* Privacy and Security

All user data must be flawlessly protected by the software. but is unable to do so since it requires third-party purchases and permissions.

* Time

The time allotted for this project is at most 3 months.

* Language

Python will be used as the language for the backend of the software.

The website will be in English language. Users who do not know English will face difficulties in using the website.

## User Documentation

In order to ensure that users have no problems using the software, appropriate instructions will be given at each step. You will receive instructions for completing forms and attaching photos. In the event that a user accidentally enters incorrect information or makes another error while using the software, the appropriate error messages will be presented.

## Assumptions and Dependencies

## Assumptions

Only the English language is supported by the application. We assume that the software's users are well-versed in English. Users of the software should be familiar with the basics of image uploading.

* Dependencies

The application will require Django web framework as a dependency, since we use Python as the backend language. Bootstrap Framework will be used for the front end of the application.

# External Interface Requirements

## User Interfaces

Users can register with a unique id and password to gain access to the system's portal and examine all accessible features and information about their property if they are registered with the property. Upon logging into the system, users could view payments, work orders, communication, rent due, and other options.

## Hardware Interfaces

The system must be compatible with any device that has a web browser that supports HTML5, CSS, and JavaScript. We can abstract our system from talking directly with the hardware and instead utilize the web browser to communicate with both the centralized database backend and the device itself.

## Software Interfaces

The application is being designed using a cross-platform graphical user interface that is accessible via any web browser. The development team is utilizing pycharm-created web containers to give better experience on operating systems such as iOS and Android. The application will interface with backend servers using the Django framework, and data will be saved in MYSQL.

Tenants and property management will communicate via email or software, while maintenance requests will be sent via Property Maintenance Management Software. Property Maintenance Management Software allows the property manager to obtain and review maintenance request information.

## Communications Interfaces

The program will be accessible through the device's web browser. A login will be required to ensure that only registered users may access the software and to safeguard their data.

While logged in, the user has access to payment, rent due, work order, communication, and package selections. Choices shall be readily discernible and straightforward to follow in order to achieve the desired activity. The database will save information to avoid inaccurate information from being stored from many devices. The product utilizes the most recent data entered on the forms.

# System Features

The Software system features as Rental and Leasing, Work Orders, Documents Storing, Payments, Communication and Package Notifications.

## System Feature 1

Management to handling rental and leasing for new and existing residents.

4.1.1 Description and Priority

The leasing procedure can be time-consuming for rentals and management. The rental and leasing tool expedites the screening of residents, keeps track of their information, and facilitates quick and efficient moving in and moving out. It has a high priority, as acquiring an apartment or property comes first. This feature has the ninth highest importance on a scale from 1 to 9 (highest).

4.1.2 Stimulus/Response Sequences

This tool allows the property management to manage tenant move-in requests, track the move-in lease process, complete the check list more quickly, and store all documents securely in one location.

4.1.3 Functional Requirements

REQ 1: Manager shall be able to search through different type of available property types and there details by using property class.

REQ 2: Manager shall be able to allot one available rental unit to the new rental.

REQ 3: Manager shall be able to add new tenants to the particular property.

## System Feature 2

Complaining about building maintenance

4.2.1 Description and Priority

To protect the safety and comfort of the building's residents, building upkeep must be a top priority. It is vital to be thorough and detailed when describing maintenance issues so that maintenance employees can address them effectively. It’s a high priority as hygiene goes in highest preference.

4.2.2 Stimulus/Response Sequences

This tool allows the property management to manage tenant work orders, track the repair process, and acknowledges after completion and stores completed history.

4.2.3 Functional Requirements

REQ 1: Tenants shall be able to place complaint about the maintenance by writing description and adding images and check the status.

REQ 2: Manager shall be able to see places work orders and schedule repairs.

REQ 3: Manager shall be able to acknowledge upon completion.

## System Feature 3

Getting lease agreements and other documents

4.3.1 Description and Priority

There is importance for priority documents like lease agreements and maintenance records. Important documentation are required when a renter decides to move-in to or vacate a property. Having these paperwork organized and up-to-date will assist ensure a smooth leasing procedure and prevent future legal difficulties.

4.3.2 Stimulus/Response Sequences

This tool allows the property management to manage documents related between tenants and management, stores them in the database and makes it accessible for both management and respective property tenants.

4.3.3 Functional Requirements

REQ 1: Tenants shall be able to view and download the documents.

REQ 2: Manager shall be able to upload the agreements and important documents.

## System Feature 4

Paying rents and other maintenance bills.

4.4.1 Description and Priority

It is essential to prioritize these bills according to their urgency and potential implications for nonpayment. To avoid legal action and late fees, rent should always be paid promptly. It is simplified by the payment alternatives.

4.4.2 Stimulus/Response Sequences

This tool manages rent payments and other bills and fines that can be paid in different options like bank account, cards or cash. Then stores payment history in the database and makes it accessible for both management and respective property tenants.

4.4.3 Functional Requirements

REQ 1: Tenants shall be able to make payment and get payment confirmation.

REQ 2: Manager shall be able to receive payment and update it in accounting.

## System Feature 5

Interaction between tenants and management.

4.5.1 Description and Priority

Whether you are attempting to connect with a property manager or vice versa you should use the software that allows to message in it and get response from the other end. Its very important to communicate with each other for better property maintenance.

4.5.2 Stimulus/Response Sequences

This tool manages communication between management and tenants know all the required information about the property.

4.5.3 Functional Requirements

REQ 1: Tenants shall be able to place a message through the software to management and get responses.

REQ 2: Manager shall be able to receive texts from tenants and clarify their doubts through it.

## System Feature 6

Receiving the delivered packages safely.

4.6.1 Description and Priority

Property management can ensure that residents receive their packages safely and efficiently. Once the delivery is received by the management they will enter the details to the respective resident for pick up.

4.6.2 Stimulus/Response Sequences

This tool manages information of when the package was received by management and updates concerned residents.

4.6.3 Functional Requirements

REQ 1: Tenants shall be able to get updates regarding their packages which were delivered at the residents office.

REQ 2: Manager shall be able to update residents about their package pick ups.

# Other Nonfunctional Requirements

## Performance Requirements

Performance requirements for property management software will vary depending on the specific needs and use cases of software like speed must respond within seconds, it should be stable and reliable, it should be able to handle a growing number of properties and tenants without sacrificing performance and be easy to use and navigate.

## Safety Requirements

The software should require users to authenticate themselves with a unique username and password to access the system. Additionally, it should have a role-based access control system that allows administrators to control which users have access to specific data. The software should be hosted on a secure server that uses modern security technologies such as firewalls, intrusion detection systems, and antivirus software.

## Security Requirements

The software should maintain detailed logs of all user activity, including login attempts, data access, and changes made to data. This helps detect and investigate any unauthorized access or suspicious activity. It should have a disaster recovery plan and backups to ensure that data is not lost in case of a system failure, natural disaster. It should be kept up to date with the latest security patches and updates to protect against known vulnerabilities.

## Software Quality Attributes

**Usability:** The software should be user-friendly, intuitive, and easy to navigate, with a consistent and clear user interface.

The software should protect the privacy and secrecy of all user data, including financial and personal information. It must have the proper access controls and authentication mechanisms to prevent unauthorized access to sensitive data.

**Performance:** Even during peak usage hours, the software should have quick response times and be able to handle a large volume of data without delays or lags.

**Scalability:** The software should be able to accommodate a growing number of users, properties, and maintenance tasks without degrading in performance or losing data.

**Compatibility:** The software must be compatible with various operating systems, web browsers, and devices, allowing users to access it from a variety of platforms.

## Business Rules

A rental property must comply with all applicable housing laws and regulations, and all maintenance work must adhere to these regulations.

Except for emergency repairs, tenants must be given a reasonable notice period before any maintenance work is performed in their rental unit.

When necessary, only qualified and licensed professionals should perform maintenance tasks.

Property managers must maintain comprehensive records of all maintenance requests and work performed, including copies of invoices, receipts, and other pertinent paperwork.

Any renovations or upgrades made to a rental property must be approved by the property owner and adhere to all applicable building codes and regulations.

The software for the rental property maintenance management system must be routinely updated and maintained to ensure its functionality and suitability to its users.

Any personal or sensitive data collected by the software, such as tenant contact information, must be kept secure and confidential.

# Other Requirements

An essential consideration is insurance. Some form of property insurance is required, so it is great when applicable policies can be easily updated through property management software like electricity linkup

# Appendix A: Glossary

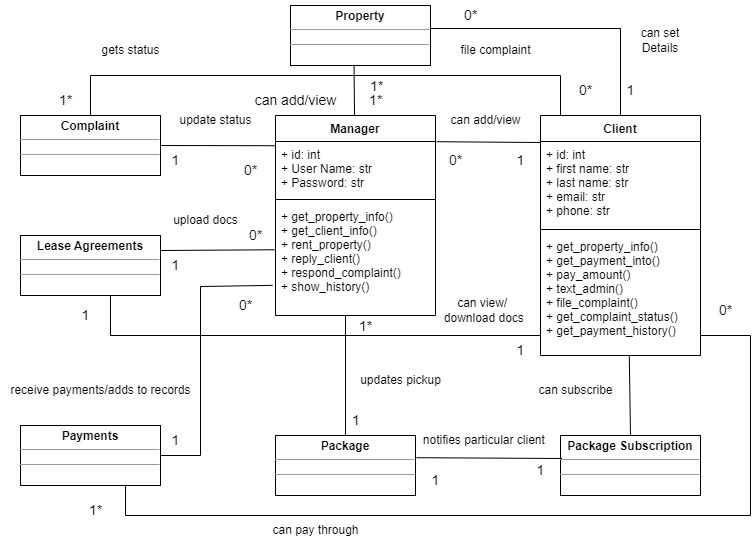
HTML- Hyper Text Markup Language

CSS- Cascading Style Sheets

MYSQL- My Structured Query Language

REQ- Requirement

Appendix B: Analysis Models

Appendix C: To Be Determined List

Detailed feature functions for some features are not finalized and will be added to the Software Requirement Specification document once finalized.