

**iACADEMY**  
**School of Computing**

3rd Term AY 2022-2023

**SOFTWARE ENGINEERING THESIS PROJECT PROPOSAL**

**Proposed Title: MyHomeHub - Residential Management System**

**Proponents:**

- 1. *Baquiran, Rhob Lester***
- 2. *Corales, John Rommel***
- 3. *Tupaz, Lee Aaron***
- 4. *Lopez, Paul Ryan***

**Short Description of the Study:**

A residents management system is a software tool that helps manage information related to the residents of a particular community or property. Developing a web application for such a system can have significant benefits for both the residents and the property management team.

Firstly, a web application can provide residents with easy access to important information related to their community or property, such as upcoming events, maintenance schedules, and emergency contact information. This can help residents feel more connected to their community and stay informed about important news and updates.

Secondly, a web-based residents management system can streamline communication between residents and property management. Residents can submit maintenance requests or report issues directly through the web application, reducing the need for phone calls or emails. Property management can also use the system to communicate important information or updates to residents, such as changes in policies or upcoming construction projects.

Overall, developing a web application for a residents management system can improve communication, increase transparency, and streamline operations for both residents and property management. It can help build a stronger sense of community and improve the overall resident experience, ultimately leading to higher satisfaction rates and increased retention.

**Functionalities:**

- Software-as-a-Service (SaaS) is a software delivery model where a software application is provided to users over the internet. Instead of purchasing and installing software on their own computers or servers, users can access and use the software through a web browser or a dedicated application.
- Software-as-a-Service (SaaS) is applied on the residential management system web application. This web application is accessed over the internet, eliminating the need for users to install software locally. Users can have their respective accounts, access information, submit repair requests, and view announcements

through the web application. The system ensures data encryption, privacy, and two-factor authentication for security. Different user roles have varying levels of access, such as residents, administrators, super administrators, and moderators. Overall, the SaaS model allows for easy access, secure data management, and improved communication between residents and property management.

- A residential group representative may visit our website to make an account and view our service application. If they're interested in availing our services, they will need to submit legal documents (certificate of title) related to the residential group to the super administrator first for approval of creating accounts for them.
- To secure the privacy of data and the personal information of residential users, Field-level data encryption will be implemented on the database. In this approach, specific columns or fields within a database table are encrypted to protect sensitive data stored in those columns. This encryption is performed at the column level, rather than encrypting the entire database or table. By encrypting specific columns, an additional layer of security is provided for sensitive information (Billing Information, Passwords, Email, Usernames, Visitor Time-in and Time-out, Codes generated by Two Factor Authentication, Activity Logs) while still allowing other non-sensitive information (Unit Owner's ID, Repair Requests, Announcements, Current Community Budget) to remain unencrypted.
- Users are required to follow 2FA (Two-Factor Authentication) by using email when accessing their accounts to ensure security. The verification code will expire in three (3) minutes after it has been used or when the time limit has been reached.
- The residential users will login using their respective account usernames along with their roles and passwords, and see the homepage full of announcements (they can also check their emails for the announcements and circulars) from the homeowner's association.
- The residential users can view fields and they can check the inventory available, billing information. (Electricity bill, water bill, cable and internet. For example, Meralco, Maynilad, PLDT), current projects, and current budget of the community.
- The residential users can submit repair requests that the building may be able to provide (For example, Plumbing and carpentry).
- The residential users can only access their own accounts only.
- The Administrator will have access to every field such as Registered Residents, Activity Logs, Inventory Available, Billing Information, Budget of the Community, Current Visitors of the Community, and Repair Requests.
- The Front Desk (The Staff assigned) can only add and view the current visitors of the community (if there are outside visitors, they need to write their names, email, phone number including time-in and time-out for safety measures.).
- The web application will implement a Secure Sockets Layer (SSL) certificate which is a good practice to ensure the secure transfer of information between the client's browser and the server. SSL certificates use encryption to protect sensitive data such as login credentials, financial information, and personal details from unauthorized access. This helps to build trust with users and protects their data from potential eavesdropping or tampering.

References:

D. Roy, A. Chowdhury, & S. Biswas. (2018). Design and Development of a Web-Based Residential Management System for Effective Communication and Management of Residential Complexes.

Jiang, Y., Zhang, Y., Sun, Z., & Liu, J. (2020). Design and implementation of a residents' management system for community management.

Aljohani, M., Alharthi, M., Alqahtani, M., Almarhabi, M., Alamri, A., & Alruwaili, A. (2020). Design and Implementation of a Residential Management System.

**Area of Specialization:** Web Application Development

**Tools/Programming Language to be used:** PHP, HTML, CSS, Javascript, MySQL

**Reviewed by/date:**

  
**Engr. C. Raymond Zalameda**  
SETHES0 Adviser

  
**Bennett Tanyag**  
Final Approver

**Comments/Remarks:**

Approved

Approved