JoshSiah's Boarding House : A Boarding House Management System

A Computer Science Course Project
Submitted to the Faculty of The College of Computing Education
University of Mindanao
Matina, Davao City

In Partial Fulfillment of the requirements for the courses
Software Engineering 101 and Advanced Database

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TABLE OF CONTENTS

1.0 SUMMARY

A boarding house in the Philippines represents a standard lodging option for individuals seeking affordable and short-term accommodation. These accommodations cater to a variety of clients, including students, tourists, and budget-conscious individuals, by offering basic yet cost-effective rooms. Tenants can choose between single rooms or double rooms which can be shared and it is equipped with essential amenities like beds, fans or air conditioning, and shared bathrooms. Some boarding houses may even provide additional conveniences such as Wi-Fi at a slightly higher rate. Situated in various locations, boarding houses are most likely positioned near universities, business districts, and tourist attractions, ensuring accessibility to their target demographics. These informal and owner-managed establishments foster a sense of community, making them an attractive choice for those seeking a homely atmosphere during their short-term stays. While tenants are expected to adhere to specific house rules, the relatively affordable rent payments often include utilities like water and electricity, with discounts available for longer stays. Boarding houses prioritize safety and security through measures such as gated entrances and lockable rooms, assuring tenants of a comfortable and secure lodging experience. In essence, boarding houses in the Philippines offer a pragmatic and sociable accommodation option for those on a budget or looking for temporary housing.

2.0 PURPOSE AND DESCRIPTION OF THE SYSTEM

The purpose of a boarding house is to provide short-term and budget-friendly accommodation for individuals who need a place to stay temporarily. These establishments cater to a wide range of people, including students studying away from home, tourists exploring a new city, or individuals seeking affordable lodging options. A boarding house management system is crucial for efficiently running and maintaining such an establishment. It helps streamline operations, manage bookings, and ensure a pleasant experience for tenants. A boarding house management system primarily focuses on maintaining a tenant database, handling billing and payment processing , allocating rooms efficiently , managing inventory, and monitoring room occupancy. It also facilitates maintenance and housekeeping tasks to ensure the upkeep of the property and effectively manages data, securely storing tenant information, financial records, and other critical data these essential functions collectively streamline operations, simplify data management, and contribute to an improved overall experience for both tenants and property owners.

2.1 DEVELOPMENT APPROACH

The Waterfall Model is a well-established and structured approach to software development that is being applied in the development of a comprehensive Boarding House Management System. In this model, the project progresses through a series of distinct and sequential phases, ensuring a systematic and organized development process.

1. Requirements Gathering and Analysis:

- The project begins with a comprehensive analysis of the requirements for the Boarding House Management System.
- Stakeholders, including the caretaker responsible for collecting tenant data, room data, and utility data, collaborate to define and document the project's scope and functional requirements.
- A detailed project plan is created, including timelines and resource allocation for developing the system.

2. System Design:

- Based on the gathered requirements, the system's architecture is developed.
- Detailed design specifications are created for components such as the user interface, data management, process automation, billing and payment processing, and reporting and analytics.
- Design documents are generated to guide the development team.

3. Implementation (Coding):

- Developers begin coding the software based on the design specifications.
- They create the software components for tenant data management, room data management, utility data management, process automation, billing and payment processing, and reporting and analytics.
- During this phase, thorough testing and debugging are carried out to ensure the code functions accurately.

4. Testing:

- Rigorous testing is conducted to validate the functionality of the Boarding House Management System.
- This includes testing tenant data allocation, room data management, utility data processing, process automation accuracy, billing calculations, payment processing, and reporting and analytics functionality.
- Any defects or issues found during testing are documented and addressed by the development team.

5. Deployment (Installation):

- Once the software passes all tests and is considered stable, it is deployed to the boarding house's production environment.
- Staff members, including the caretaker, are trained on how to use the system for day-to-day operations.

6. Maintenance and Support:

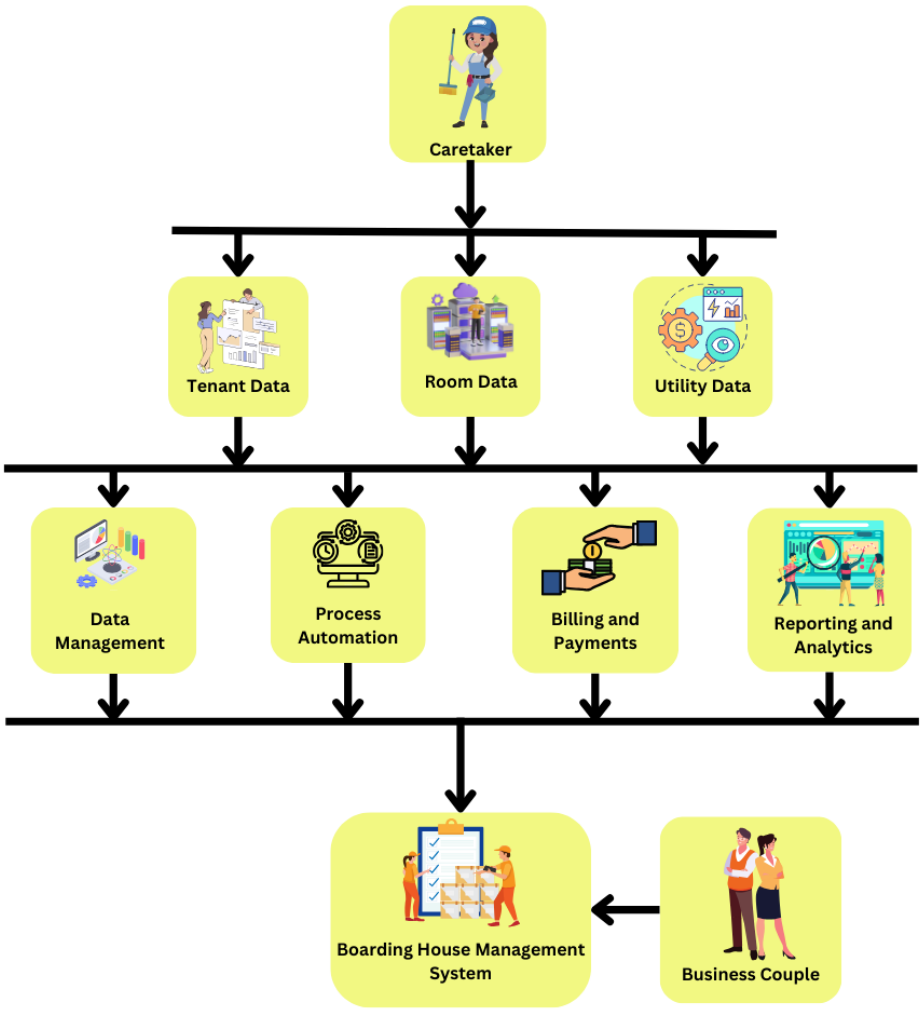
- After deployment, ongoing maintenance and support are provided.
- This involves addressing any issues that arise during daily use, applying software updates, and providing technical assistance to users.
- Additionally, as needed, further enhancements or additional reporting and analytics features can be developed and integrated into the system.

3.0 OBJECTIVES OF THE SYSTEM

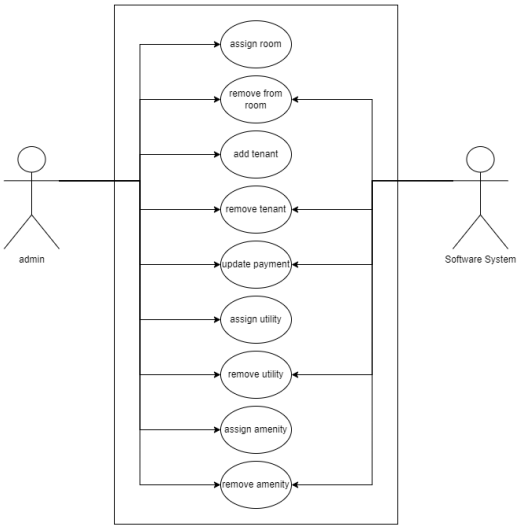
It aims to efficiently allocate rooms to tenants, ensuring that room assignments align with tenant preferences while maximizing occupancy. Additionally, the system strives to handle billing and payment processing with precision, minimizing errors and simplifying financial transactions. It maintains a comprehensive tenant database, keeping tenant information up-to-date for effective management and communication. Another crucial objective is the facilitation of routine maintenance and housekeeping tasks to uphold the quality and cleanliness of rooms and common areas. Moreover, the system prioritizes secure data management, safeguarding sensitive information such as tenant details and financial records. Through improved communication, it enhances interactions between tenants and staff, providing timely notifications and updates on important matters. Lastly, the system collects tenant feedback and reviews, aiming to identify areas for improvement and elevate the overall tenant experience. These objectives collectively contribute to streamlined operations, enhanced tenant satisfaction, financial accuracy, and the maintenance of a secure and well-organized boarding house environment.

4.0 SYSTEM REQUIREMENTS

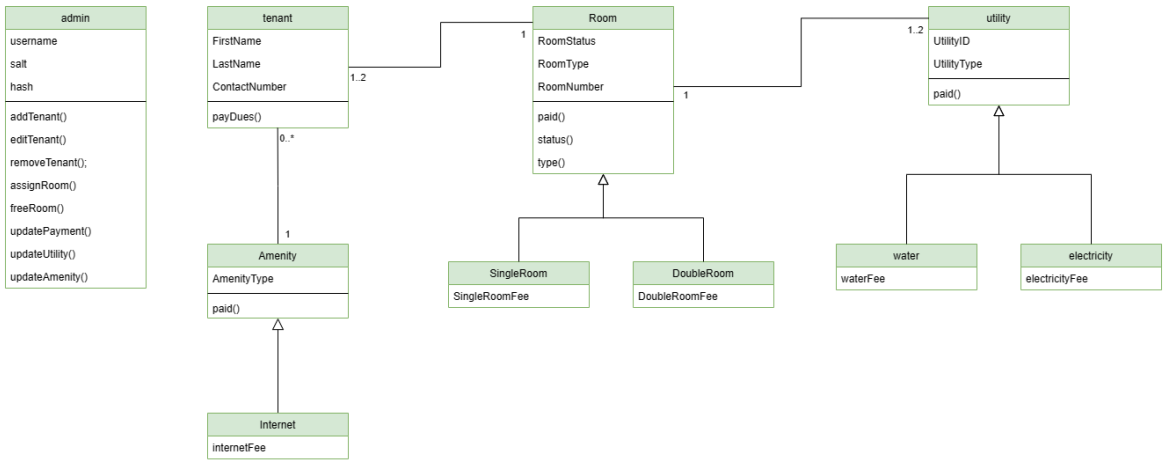
4.1 CONCEPTUAL FRAMEWORK



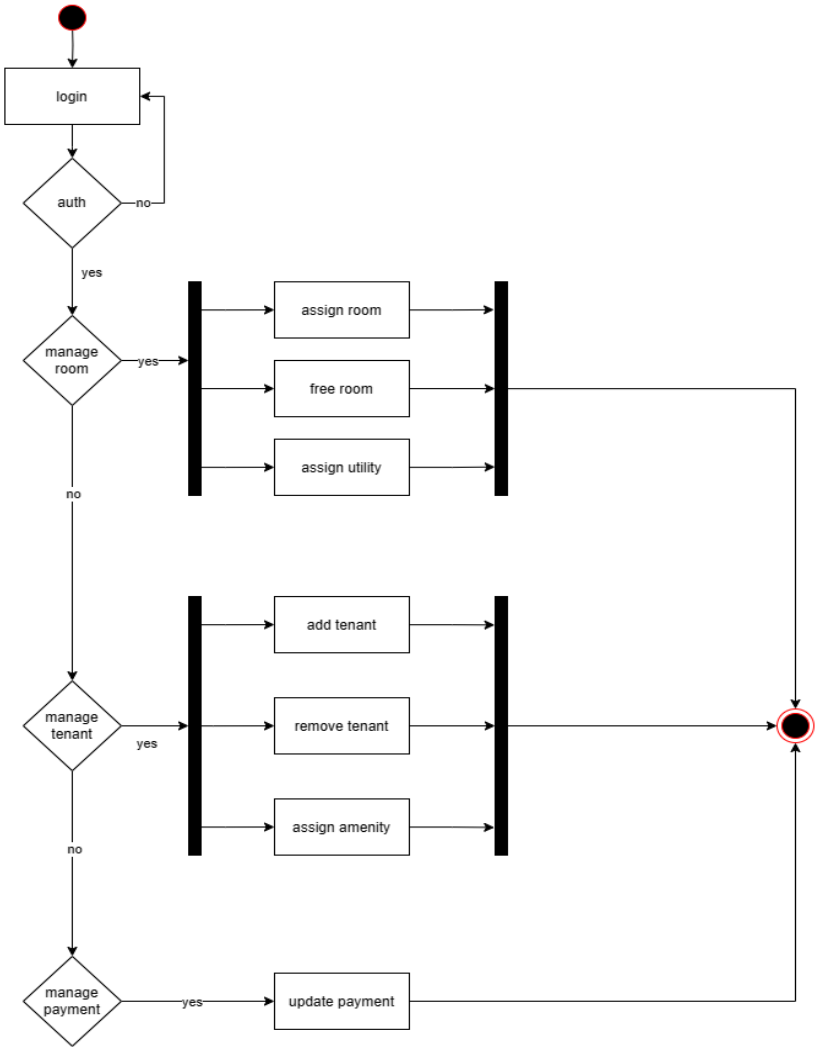
4.2 Case Diagram



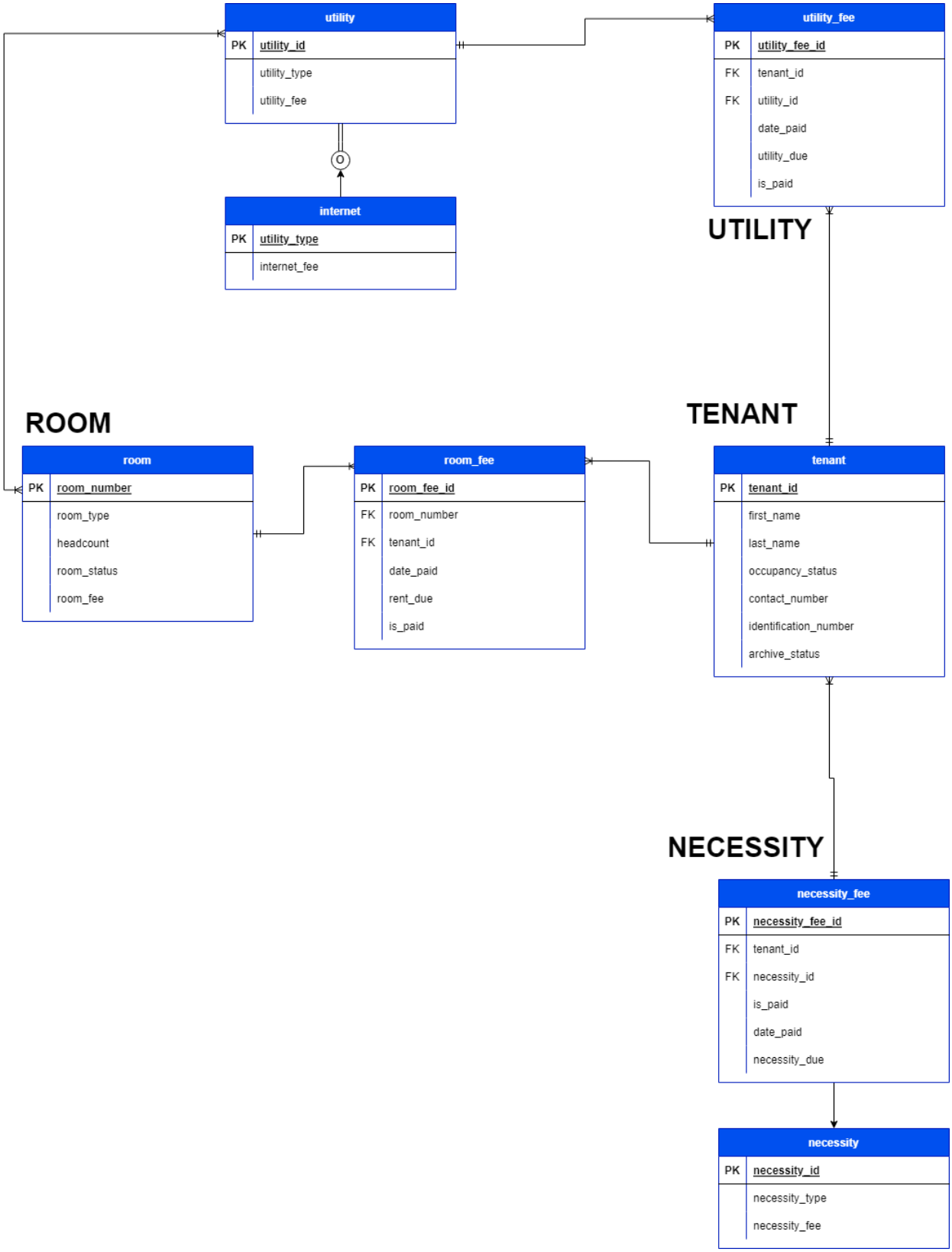
4.3 Class Diagram



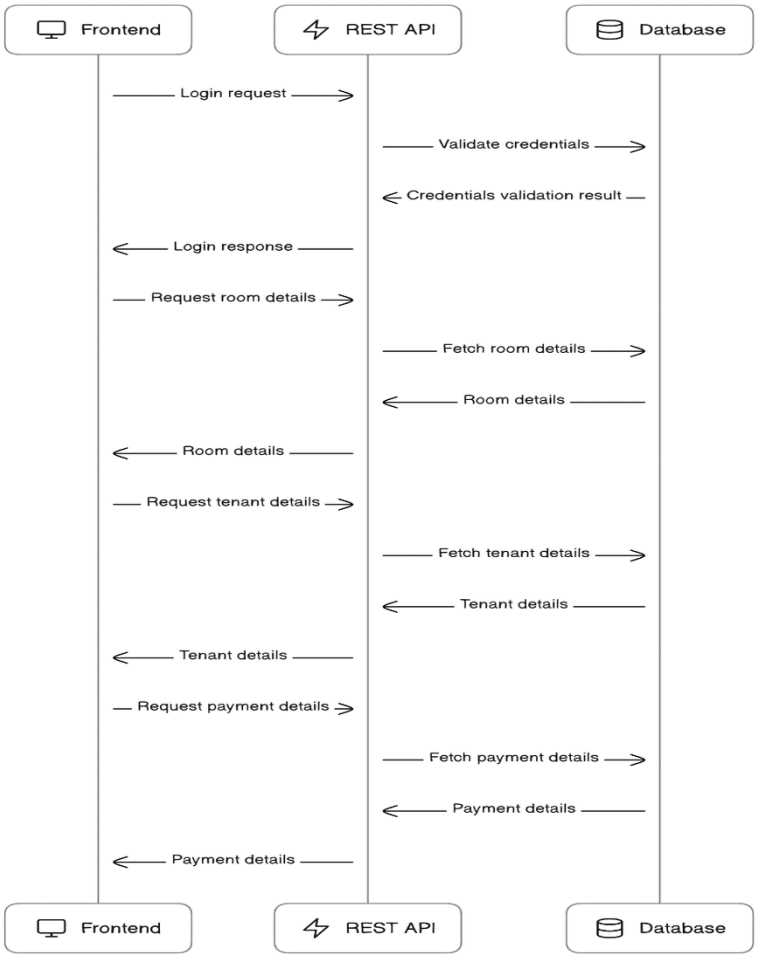
4.4Activity Diagram



4.3 Entity Relationship Diagram

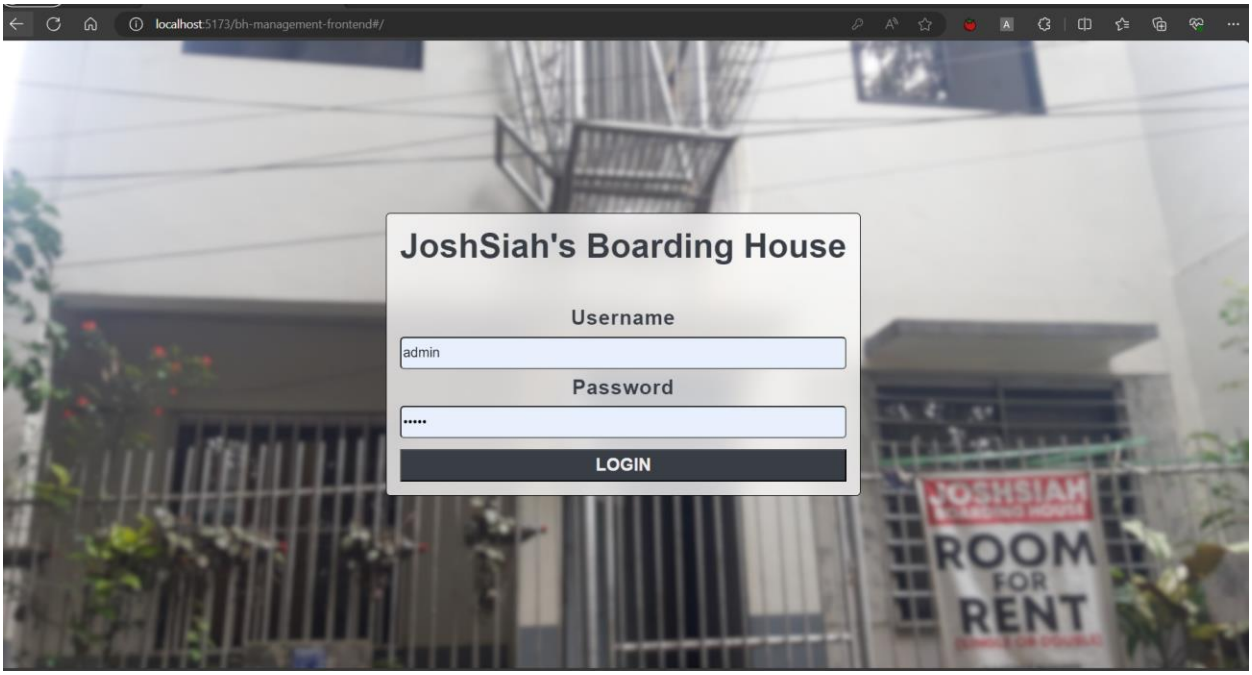


4.5 Sequence Diagram

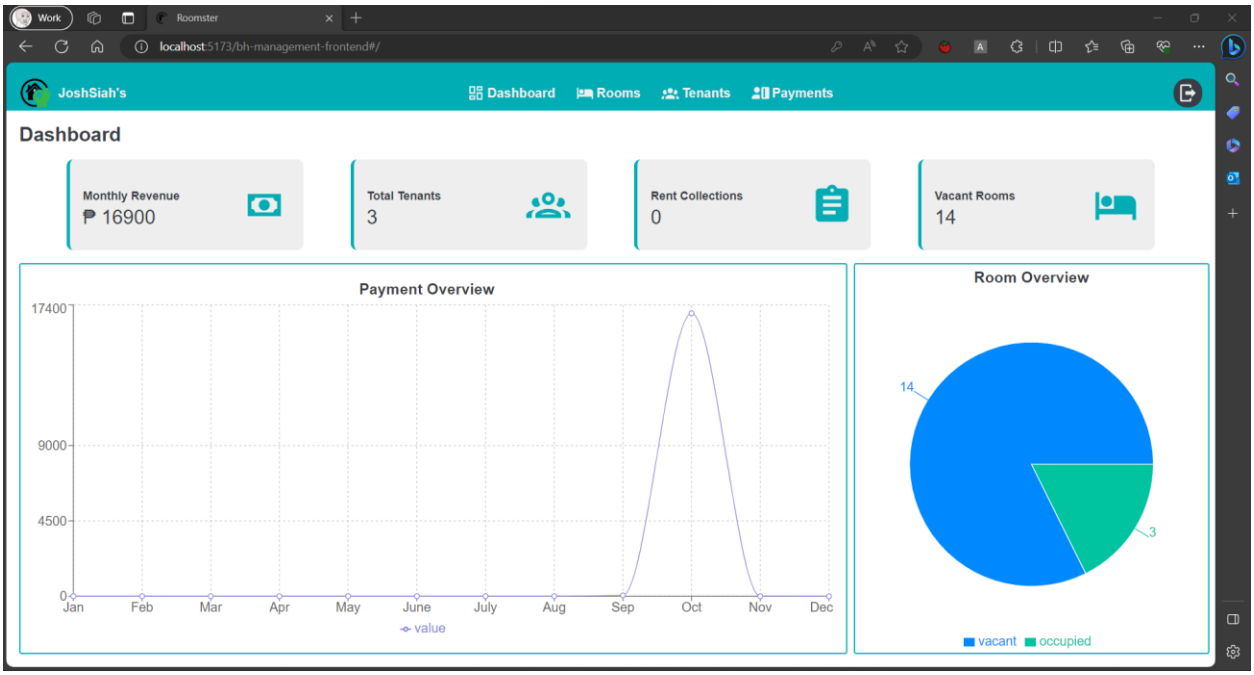


4.6 Webpage Design

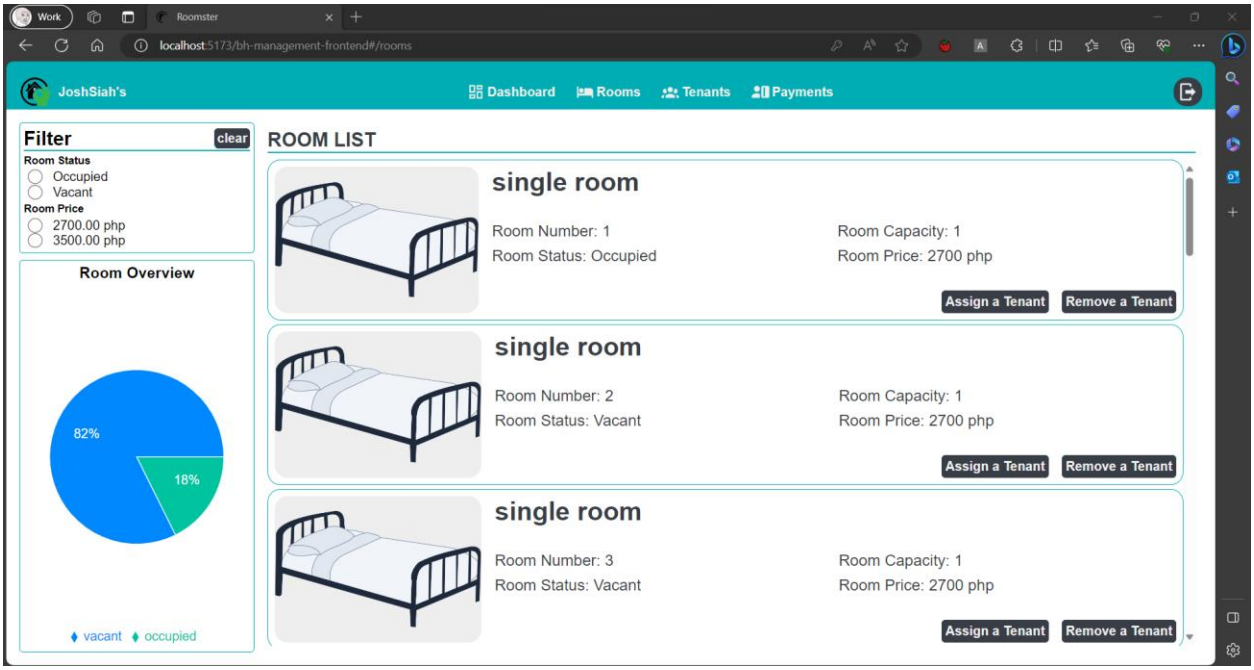
4.6.1 Login Page



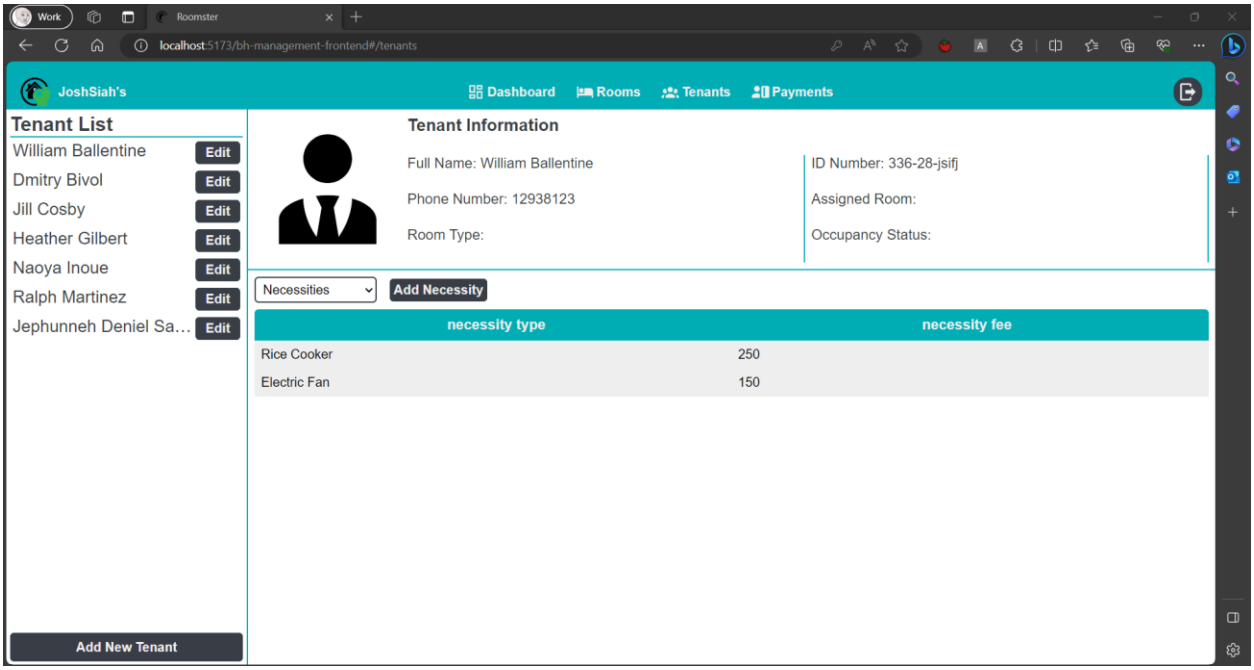
4.6.2 Dashboard



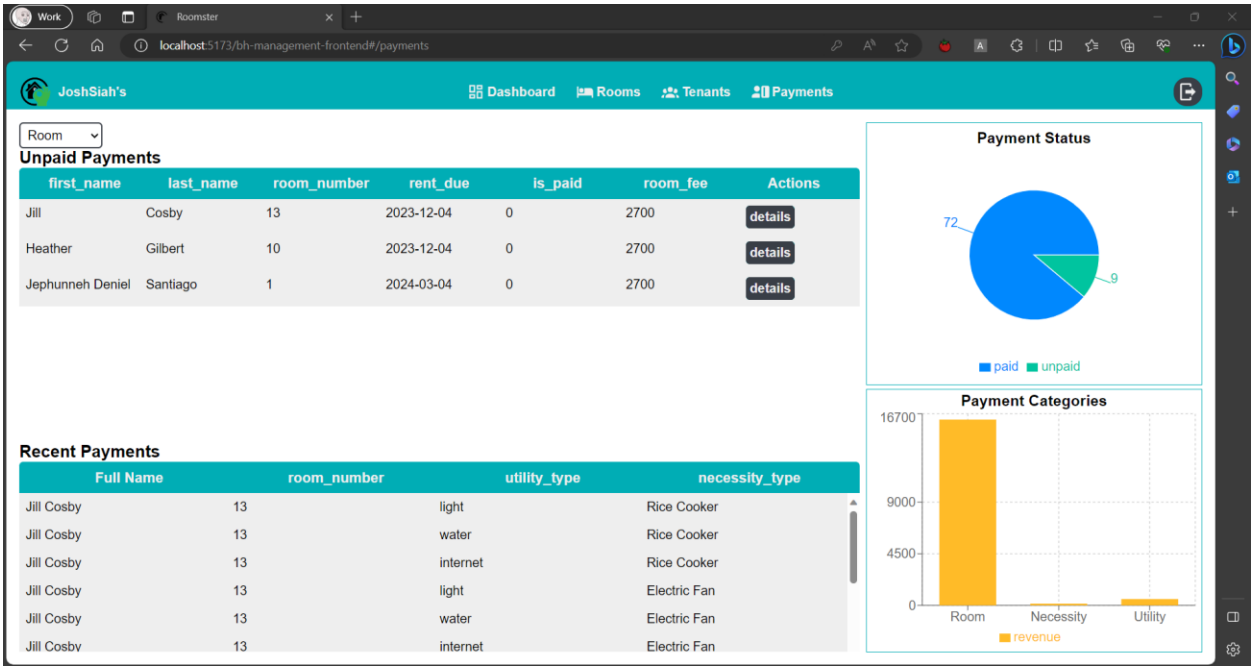
4.6.3 Room Management



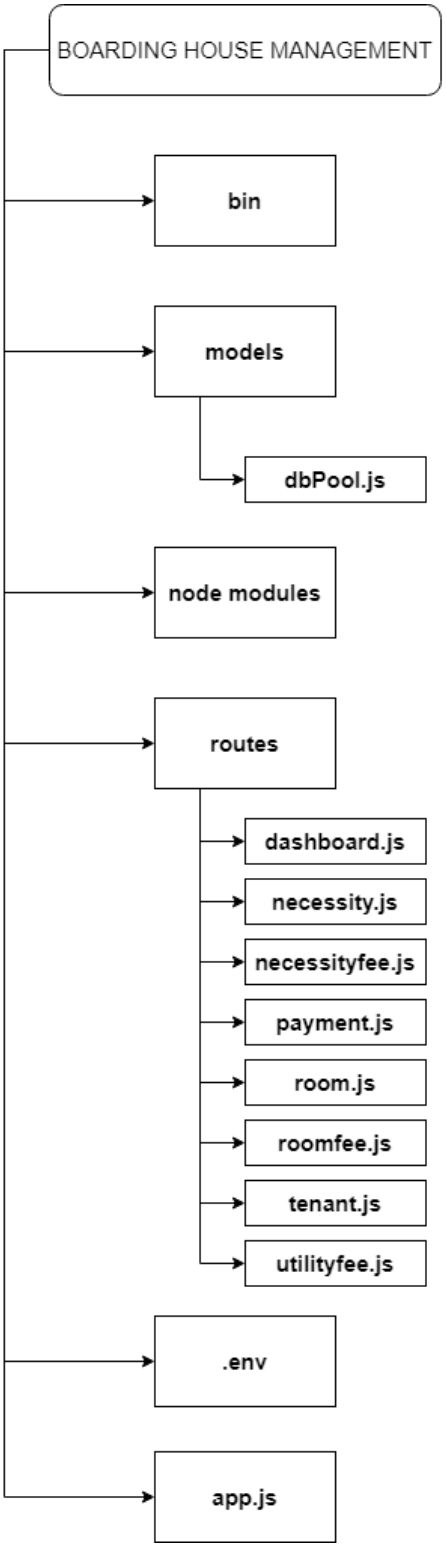
4.6.4 Tenant Management

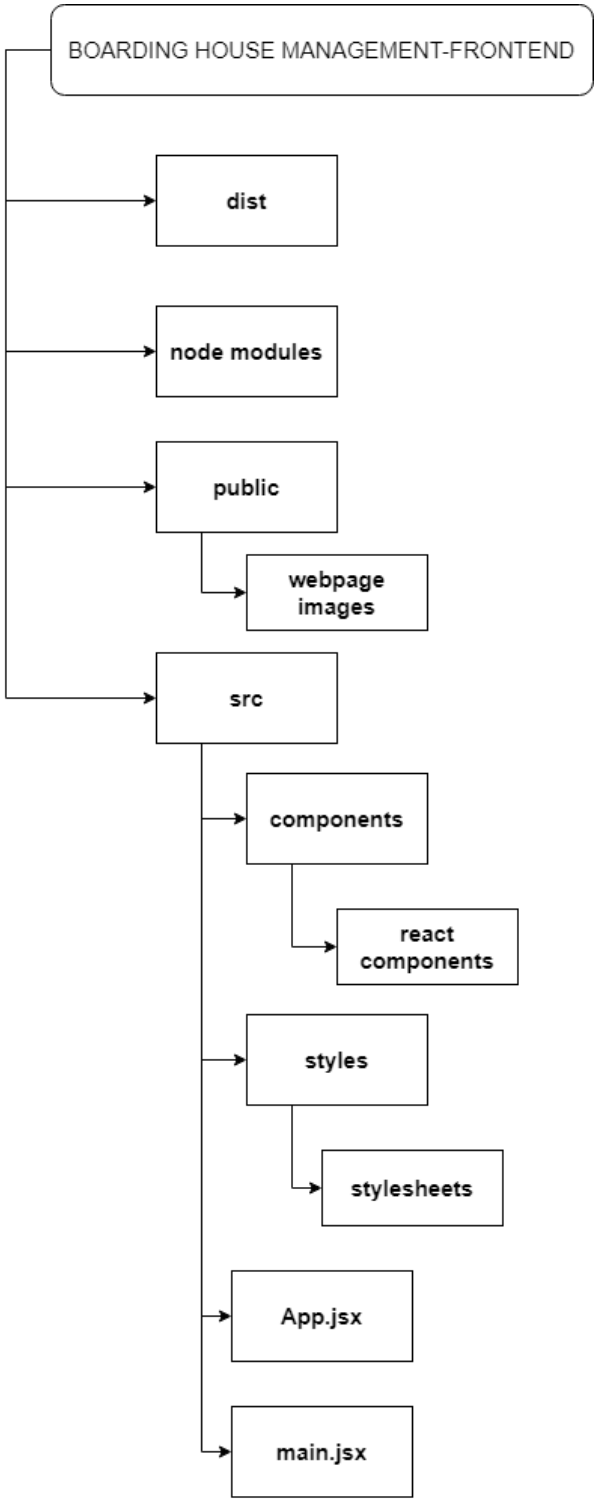


4.6.5 Payment Management



5.0 File Structure





5.1 Files Explanations

BOARDING HOUSE MANAGEMENT -BACKEND

-bin

-> bin is where the main file is located, it is where the server runs

-models

->dbPool.js is the file that allows us to connect to our database, it contains information about the host name, database name, user, connection limit, and database password.

-Node Modules

-> node modules is where all the libraries and frameworks we used is located

-Routes

-> the javascript files in this folder contains the functionalities that allow the front end to make http requests. by defining the routes we get access to various information that is in our database

-.env

-> this file is where confidential information is stored such as passwords

-app.js

->this file is where we bundle all our javascript files into one file by importing them and using them. This file also defines the middleware and error handling of the application

BOARDING HOUSE MANAGEMENT-FRONTEND

-dist

-> this folder is where the bundled and compiled front end is located

-node modules

-> node modules is where all the libraries and frameworks we used is located

-public

-> this folder is where the assets or images used in the website is located

-src

-> this is the source folder where all the functionalities of the frontend is defined, the components folder contains the react components that make up the UI, the styles folder contains all the stylesheets that style the UI. The app.jsx file is where we group the different components that make up the ui while the main.jsx file is the one that is responsible for combining all the components into one component.

APPENDICES

APPENDIX A. Functional Requirements

APPENDIX B. Non-Functional Requirements

APPENDIX C. Test Cases