

FFSD PROJECT

1st Evaluation Documentation

Domain : Real Estate and Property Management

Problem Statement : Rental Property Management Platform

Team Name : RentalWorks

Team Members :

- 1. M.K.Mirthun Vinayak (S20240010128)**
- 2. M.Anbumani (S20240010011)**
- 3. THARUNATHITHYA R (S20240010238)**
- 4. D.Govardhan (S20240010053)**
- 5. K Sanjay (S20240010098)**

Software Requirements Specification (SRS)

PG Rental Property Management System

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1. Preface

This document is intended for students, faculty members, evaluators, and developers associated with the PG Rental Property Management System project.

The purpose of this document is to clearly define the system requirements, scope, and key functionalities of the proposed PG rental management application. It serves as a foundational reference for understanding the objectives and expected behavior of the system.

This document represents Version 1.0, prepared during the initial phase of project development. The primary objective is to formally document the problem statement and establish a structured baseline for system analysis and design.

Special emphasis is given to ratings for PG hostels, smart roommate matching, and real-time occupancy tracking to ensure safety, transparency, and efficient management.

2. Introduction

2.1 Purpose

The purpose of this project is to develop a centralized, broker-free Rental Property Management Platform that supports accommodation discovery, booking, and post-booking coordination. The system is specifically focused on Paying Guest (PG) accommodations, which involve shared living spaces and continuous operational needs. It aims to enable structured tenant–warden interaction and efficient management of PG operations beyond simple property listing.

2.2 Proposed Solution

The system provides a centralized digital platform for:

- PG search and filtering
- Verified PG listings
- Online booking and secure payment
- Role-based coordination and occupancy tracking
- Preference-based roommate coordination
- Role-based coordination and occupancy tracking
- Complaint and support management

2.3 System Scope

The system enables:

- PG tenants to search, book, pay, track stay details, and raise complaints
- Wardens to manage residents, facilities, and complaints
- Property owners to manage PG properties and resolve escalated issues
- System administrators to monitor payments and system health

2.4 Objectives

- Reduce dependency on brokers
- Improve transparency and trust
- Enhance communication between stakeholders
- Provide a scalable PG management solution

3. User Requirements

User requirements define what the system should do from the user's perspective.

1. The system shall allow PG tenants to register, log in, and manage their personal profile, including preferences required for booking and stay management.
2. The system shall allow PG tenants to search, filter, and view detailed PG accommodation information, including location, rent, facilities, rules, photos, ratings, and real-time room availability.
3. The system shall allow PG tenants to apply for PG booking, track booking status, make secure online payments with receipt access, and use smart roommate matching by providing preferences to receive compatible co-tenant recommendations.
4. The system shall enable structured interaction between PG tenants and wardens, allowing tenants to raise complaints or requests and track resolution status.
5. The system shall support efficient PG operations management, including stay tracking, occupancy updates, and coordinated handling of tenant issues beyond basic property listing.
6. The system shall allow PG tenants to submit ratings and reviews.

4. System Requirements

4.1) Functional Requirements:

1) User Registration and Authentication

- Secure registration and login for all users
- Role-based access control

2) PG Search and Filtering

- Store PG data in structured database
- Support multi-criteria filtering
- Display no-results message if no PG matches

3) Booking and Occupancy Management

- Track booking status (Pending / Approved / Rejected)
- Automatically update room and bed occupancy

4) Payment Processing

- Secure payment gateway integration
- Maintain transaction history

5) Complaint and Facility Management

- Store and track complaints
- Enable warden and owner resolution workflow

4.2) Non-Functional Requirements

1) Performance

- Search results within 2–3 seconds
- Real-time booking and payment updates

2) Security

- Encrypted user credentials and payments
- +Secure authentication and authorization

3) Reliability

- No data loss during booking or payments
- Consistent occupancy records

4) Availability

- 24/7 availability except scheduled maintenance

5) Usability

- Simple and User friendly UI
- Clear error and status messages

5. Future Enhancements

- AI-based PG recommendations
- Multilingual support
- Voice-based search

6. Use Case Diagram

A Use Case Diagram is a UML (Unified Modeling Language) diagram that visually represents the functional requirements of a system by showing interactions between external users (actors) and the system.

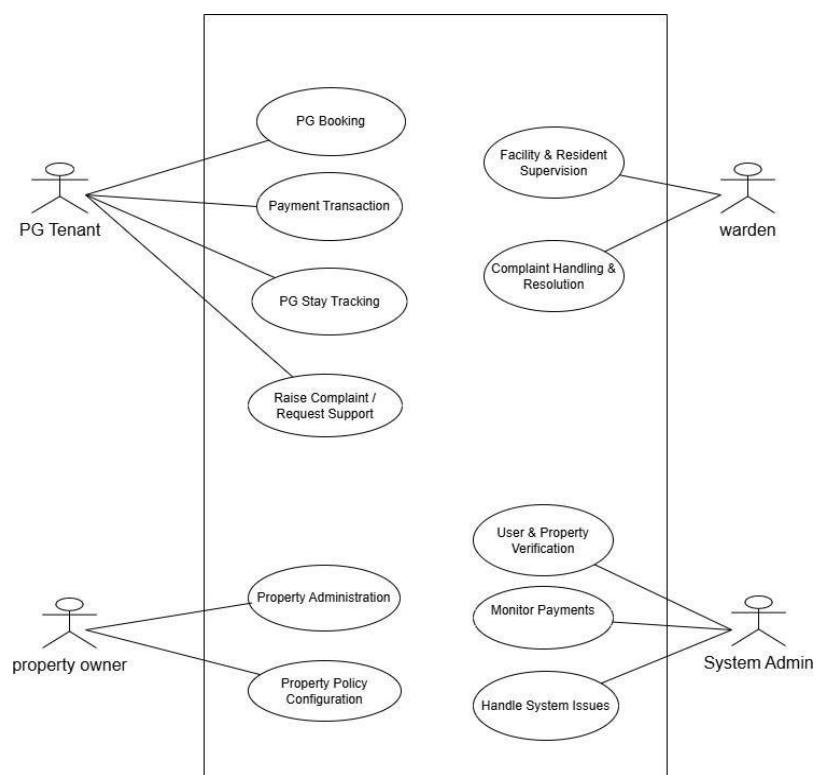
Actors in this system:

PG Tenant-Searches for PG accommodations, books rooms, makes payments, raises complaints, and provides ratings and reviews.

Warden-Manages residents and facilities, handles and resolves complaints, and communicates with tenants.

Owner-Manages PG properties and resolves issues escalated by the warden.

Admin-Monitors system operations, payments, and handles technical or system-level issues.

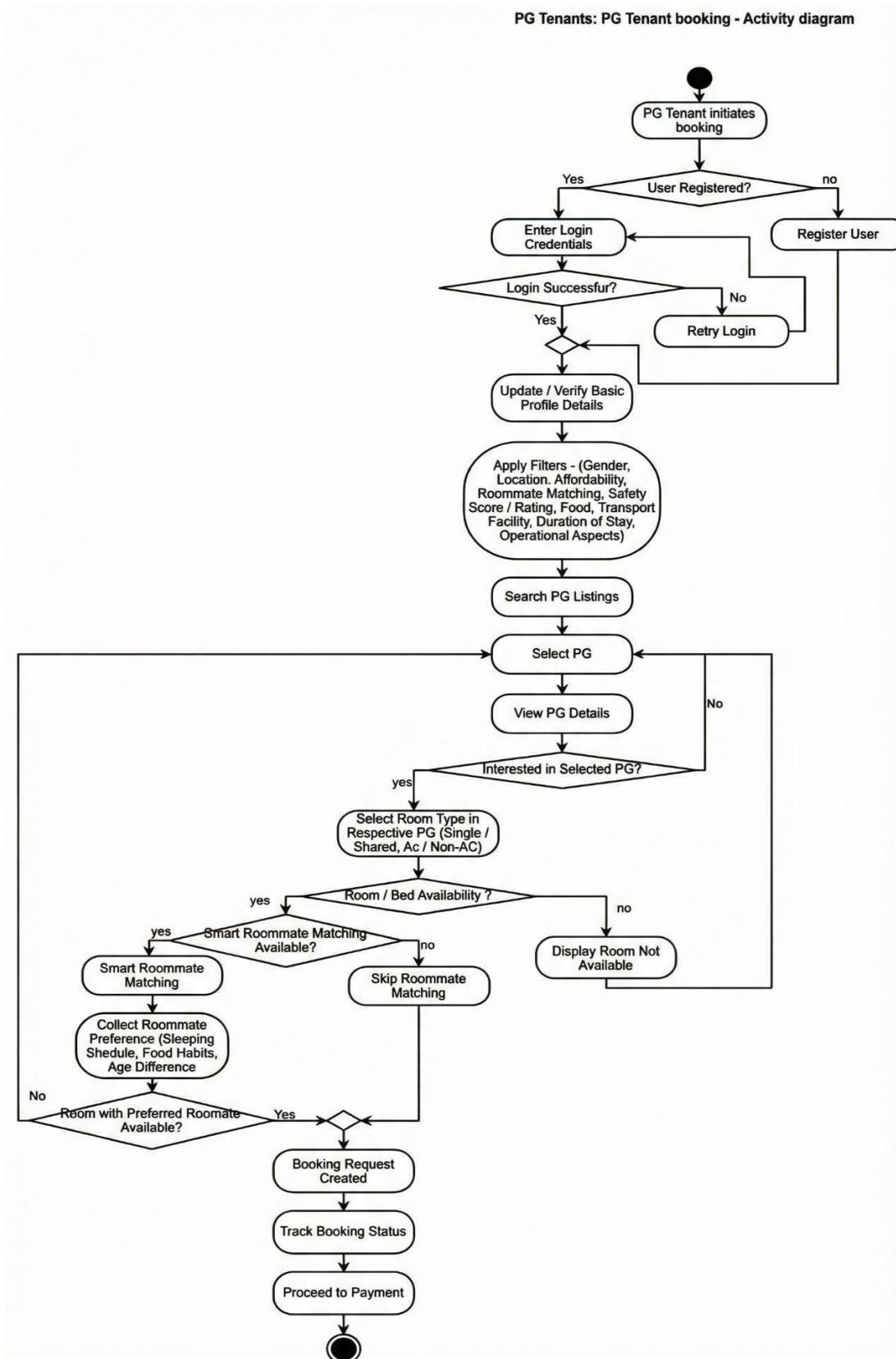


7. Activity Diagrams

Activity diagrams are used to represent the workflow and control flow of various system functionalities. The following activity diagrams describe the detailed operational flow for different actors in the PG Rental Property Management System.

7.1 PG Tenant Booking Activity Diagram

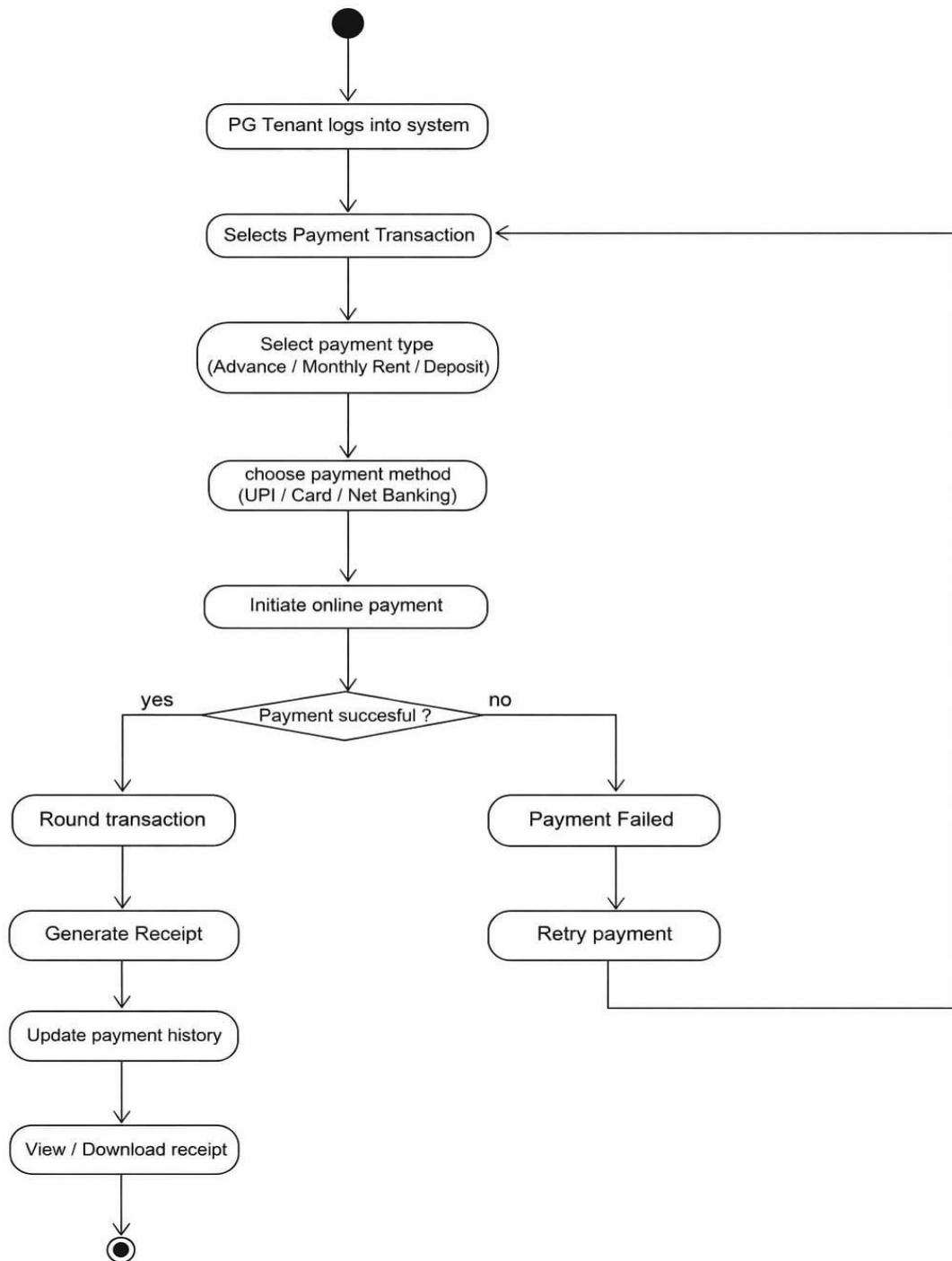
This activity diagram illustrates the complete booking workflow followed by a PG tenant, including login, PG search, room selection, availability check, optional roommate matching, booking request creation, and payment initiation.



7.2 Payment Transaction Activity Diagram

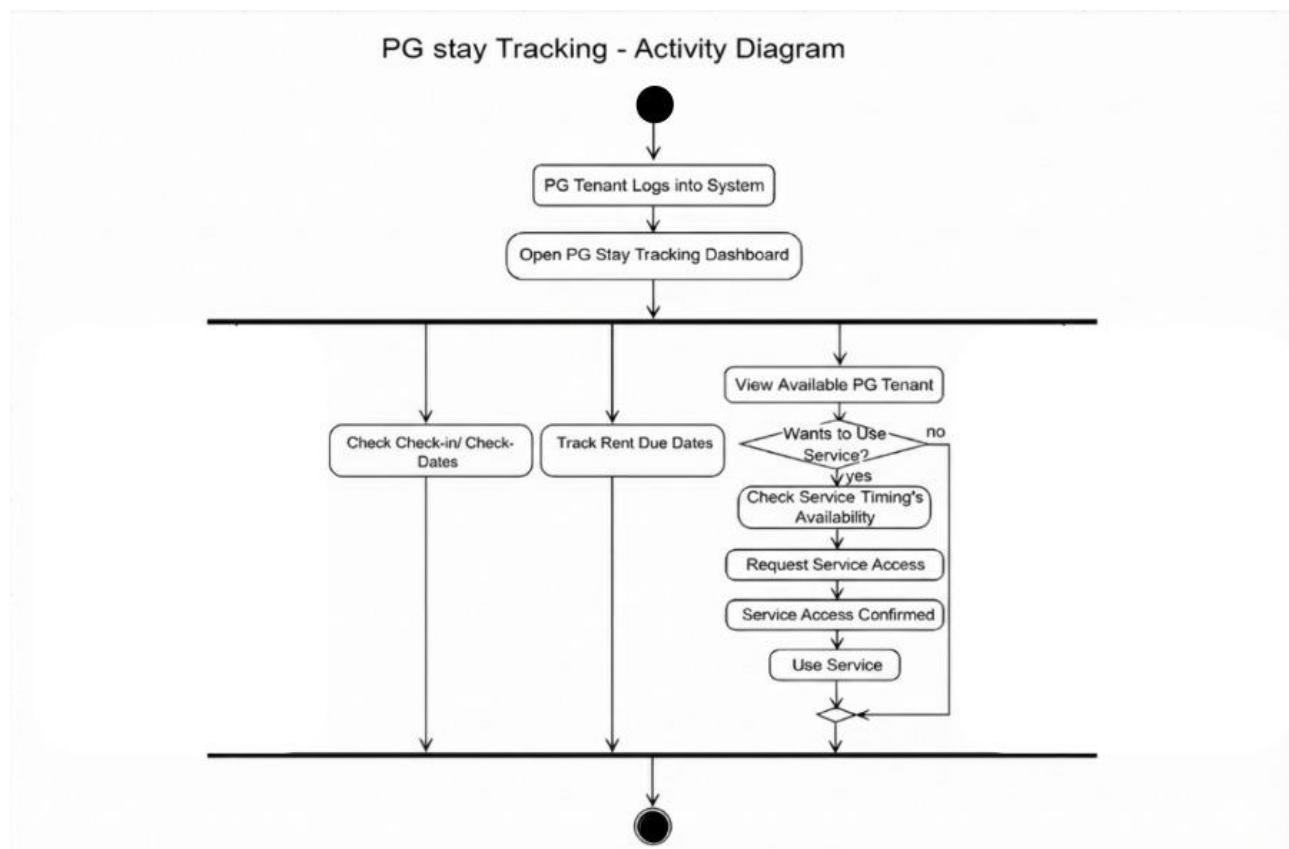
This diagram represents the workflow for processing online payments by PG tenants. It includes payment type selection, payment method selection, successful payment handling, receipt generation, and retry mechanism in case of failure.

Activity diagram - Payment Transaction



7.3 PG Tenant Stay Tracking Activity Diagram

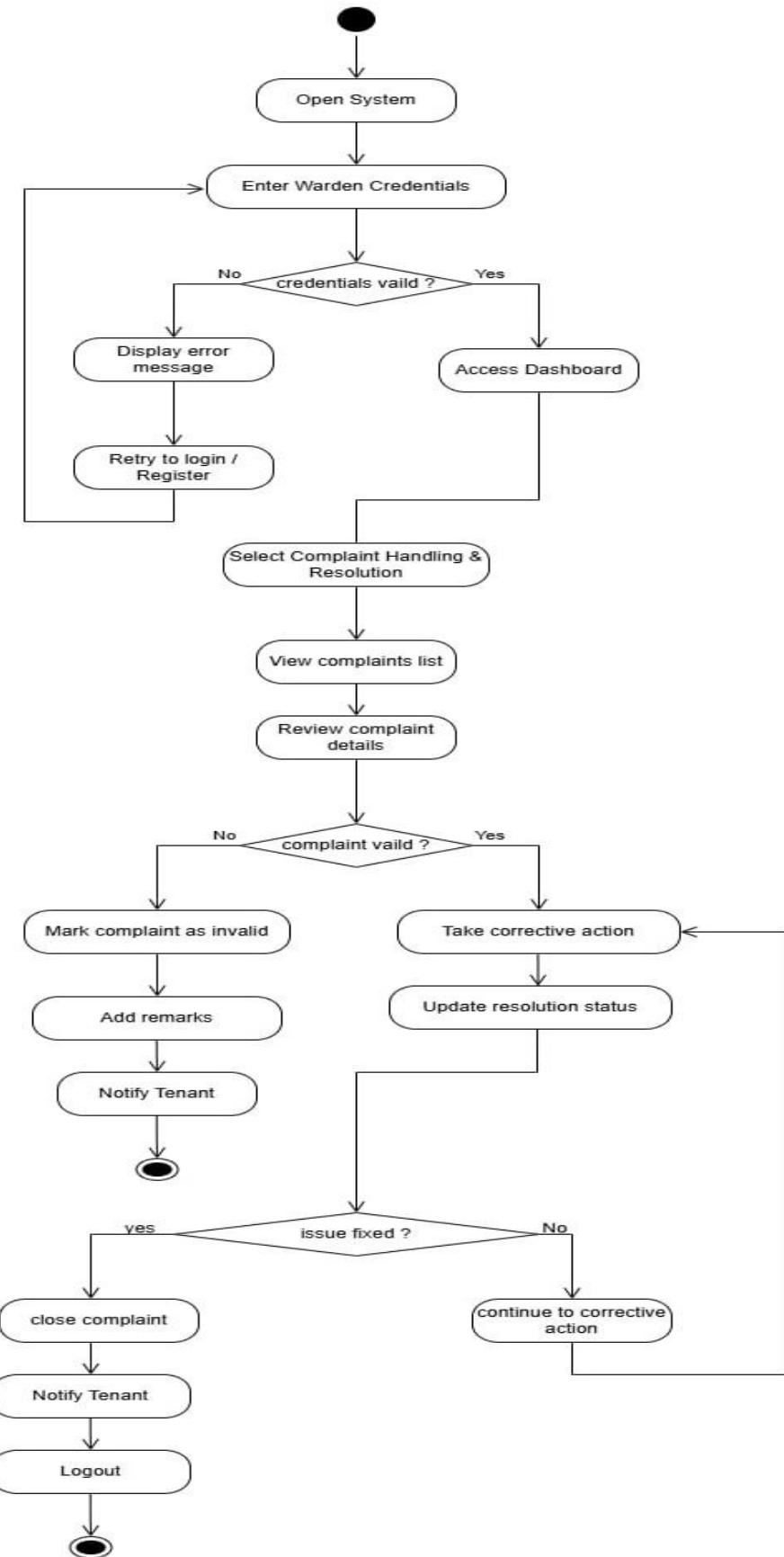
This activity diagram shows how a PG tenant tracks stay-related information such as check-in/check-out dates, rent due dates, available services, and room change requests.



7.4 Complaint Handling and Resolution Activity Diagram

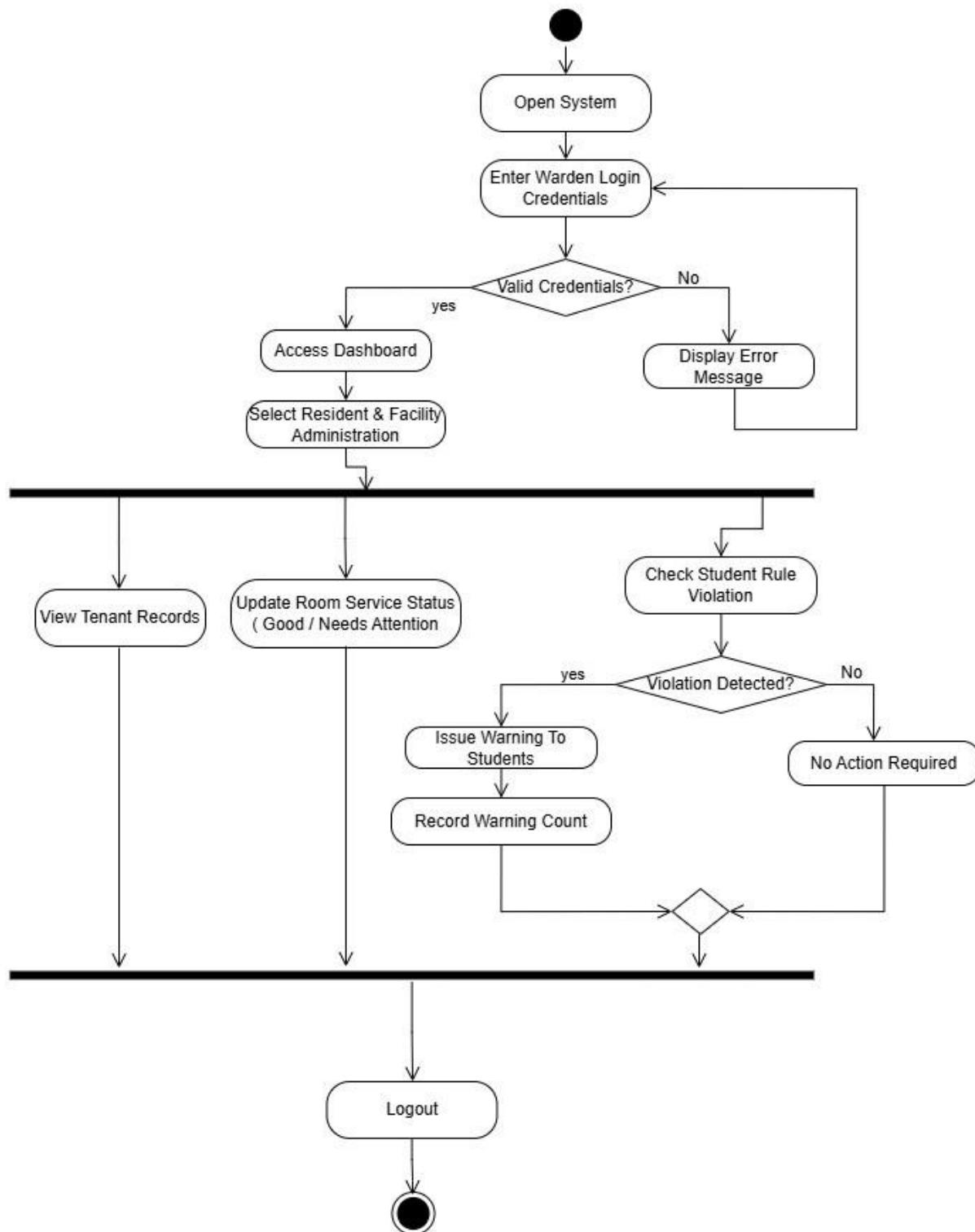
This activity diagram represents the workflow followed by the warden to review, validate, resolve, or close complaints raised by PG tenants.

Activity diagram - Complaint handling and resolution



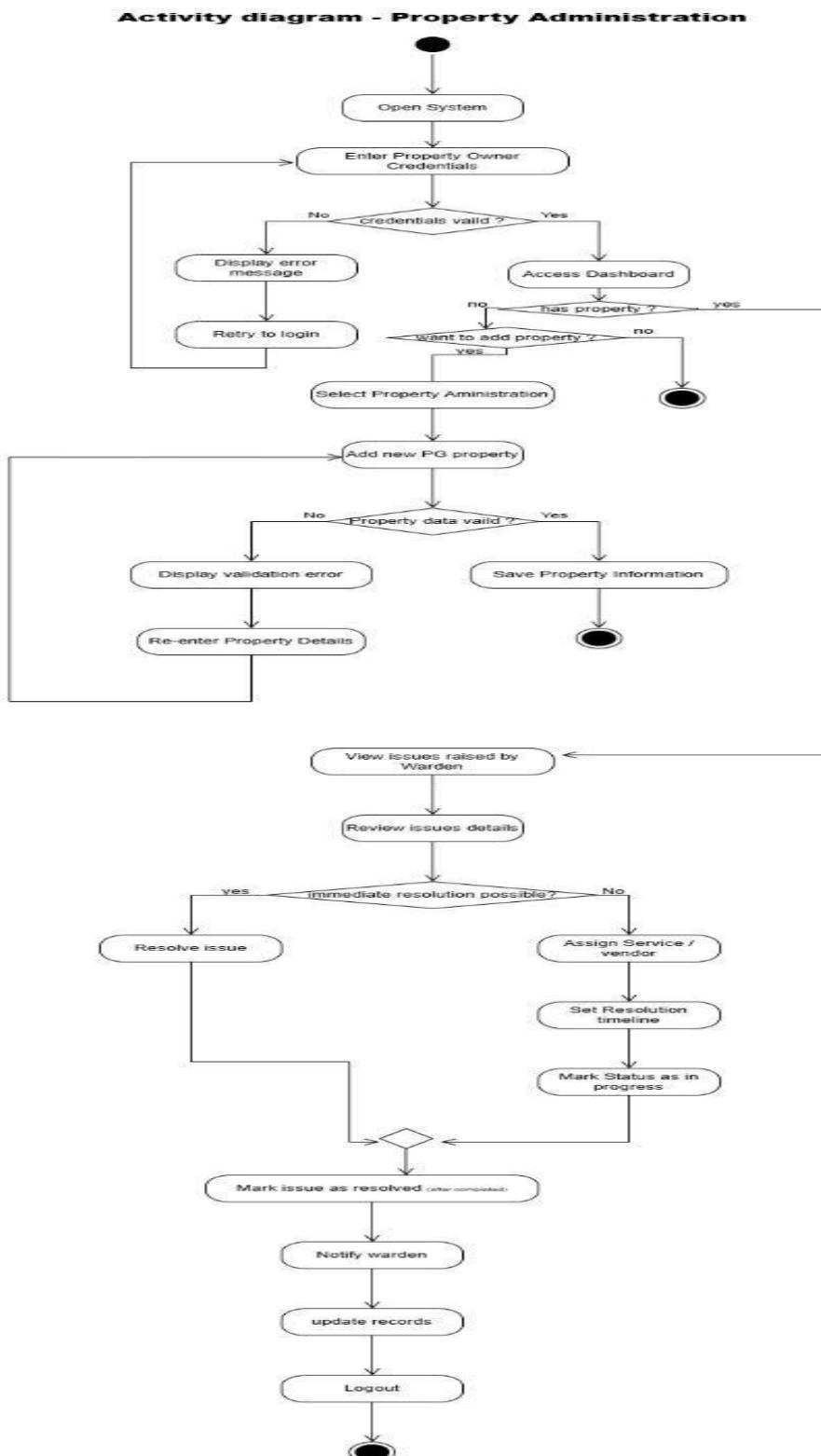
7.5 Facility and Resident Supervision Activity Diagram

This diagram shows how the warden supervises residents and facilities, monitors room services, issues warnings, records violations, and escalates issues when required.



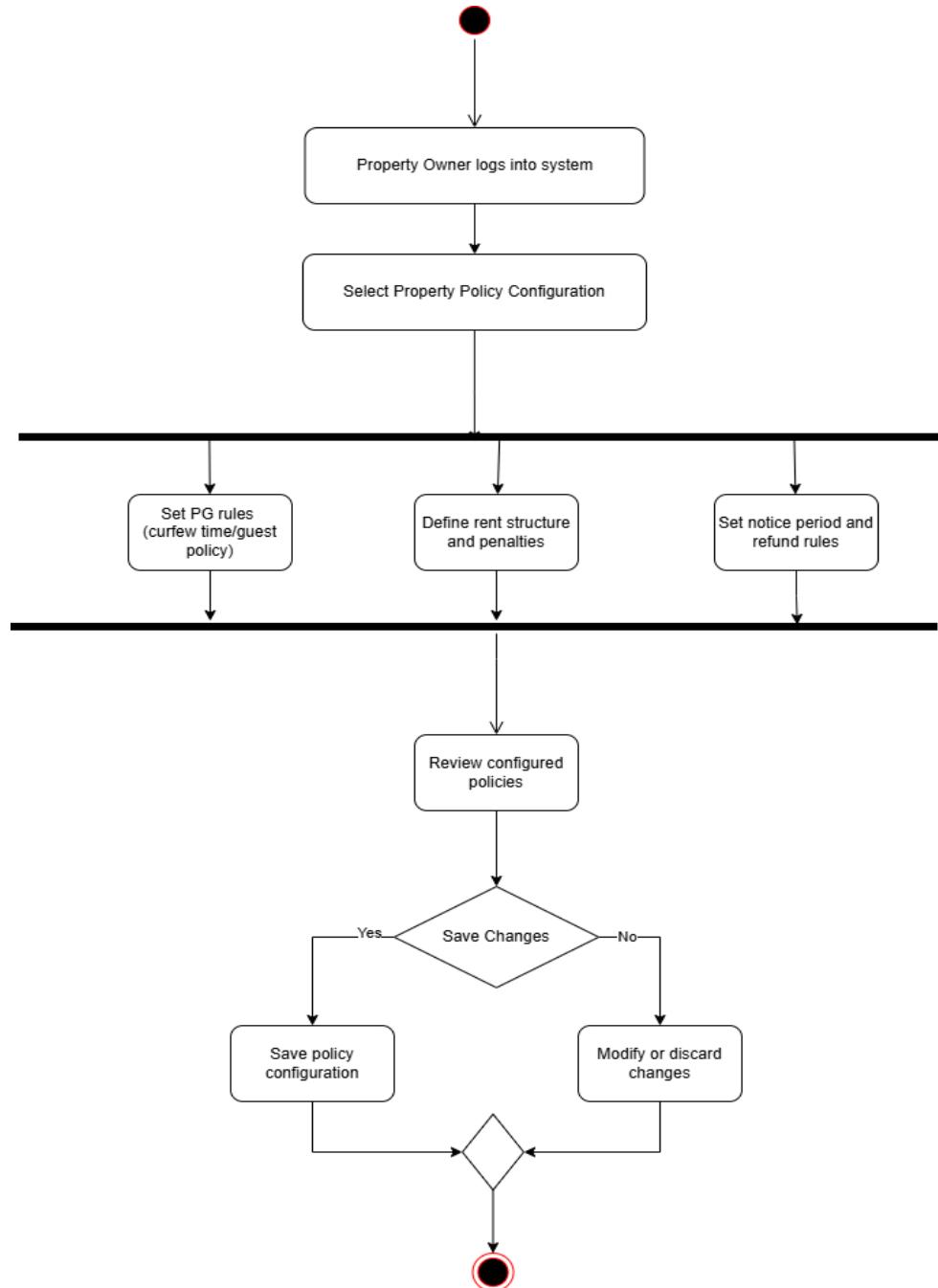
7.6 Property Administration Activity Diagram

This activity diagram illustrates the workflow followed by the property owner to add new PG properties and resolve issues raised by the warden.



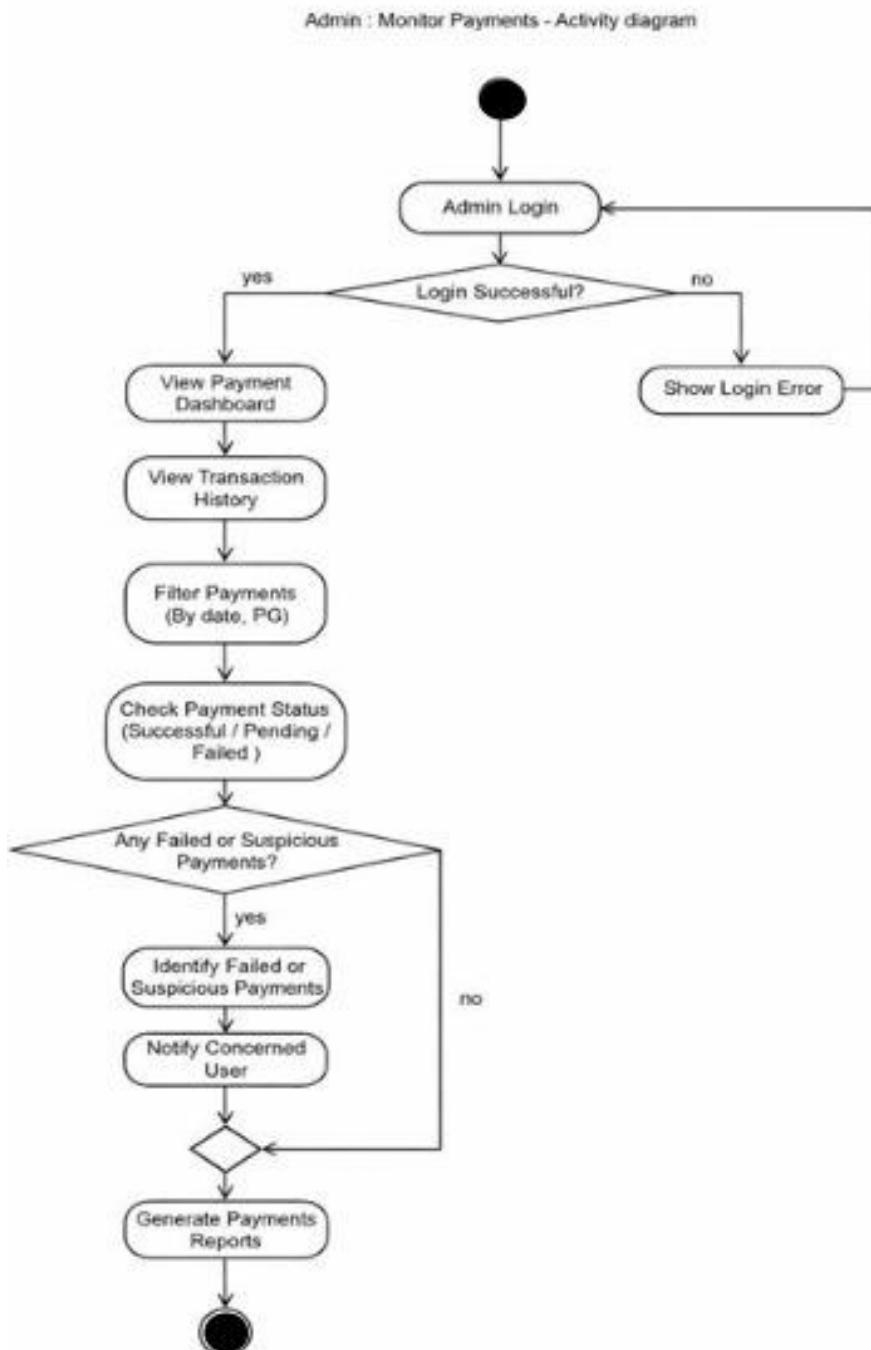
7.7 Property Policy Configuration Activity Diagram

This diagram represents the process of configuring PG rules, rent and penalties, and notice and refund policies by the property owner.



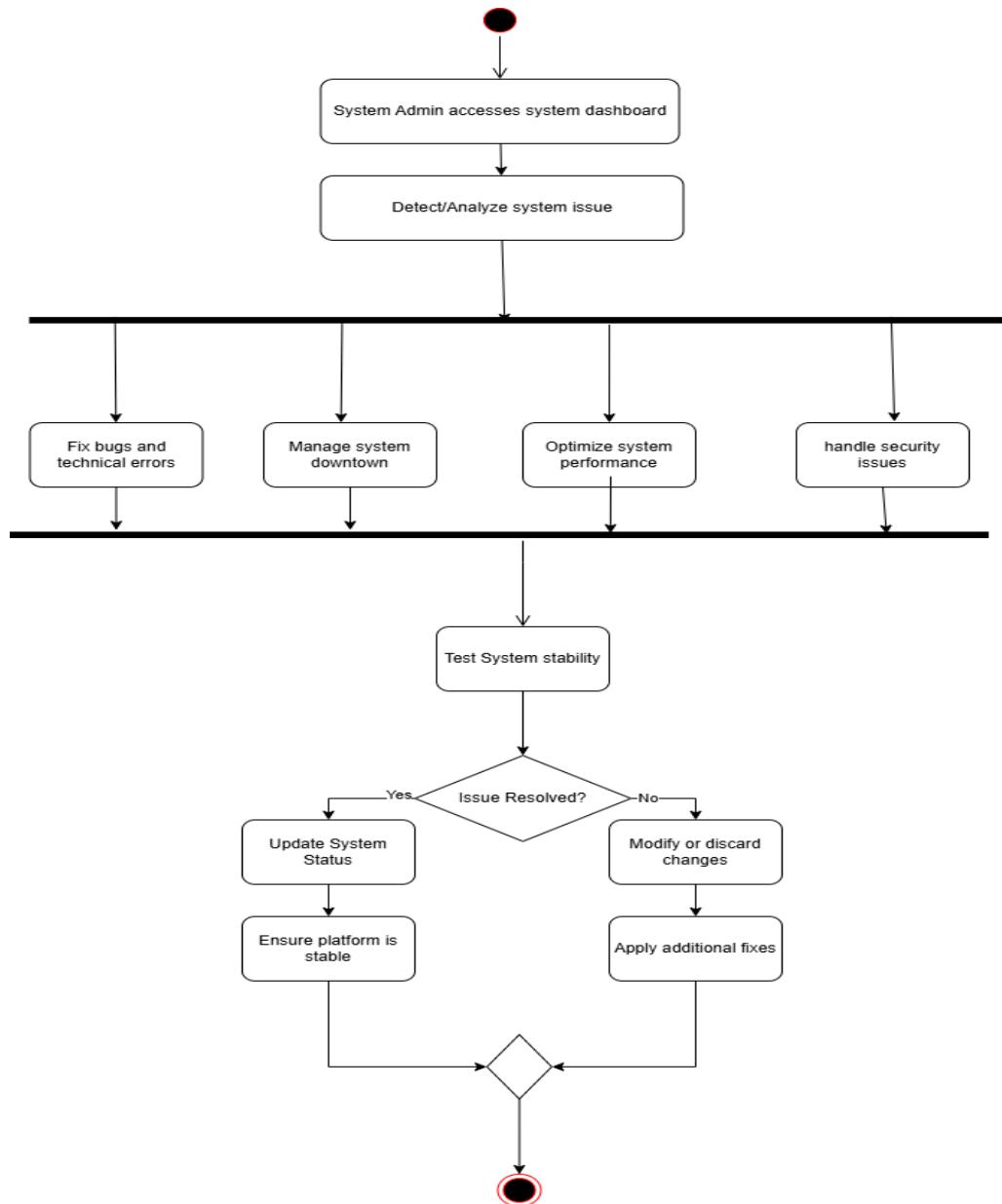
7.8 Admin – Monitor Payments Activity Diagram

This activity diagram shows how the system administrator monitors transactions, identifies failed or suspicious payments, notifies users, and generates payment reports.



7.9 Admin – Handle System Issues Activity Diagram

This diagram illustrates how the system administrator detects, analyzes, and resolves system issues such as bugs, downtime, performance problems, and security threats.



8. Sequence Diagram

The sequence diagram illustrates the time-ordered interactions between actors and system components for booking, payment processing, stay tracking, complaint handling, property administration, and system monitoring.

