

Patient Appointment and Registration Management System

Domain	Healthcare Administration (Non-Clinical)
Problem Statement	Patient Appointment and Registration Management System
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1 Preface

- Traditional healthcare management systems often face challenges such as manual data handling, limited security, and inefficient workflows.
- Patient Appointment and Registration Management System enable patients to register securely, manage their personal details, and book appointments with available doctors through a simple and intuitive interface.
- This document is for developers, testers, faculty and healthcare staff. It provides guidance on system implementation, usage, and future updates.

2 Introduction

2.1 Purpose of the System

- To automate and streamline patient and appointment management.
- To reduce manual errors and paperwork in healthcare administration.

2.2 Need for the System

- To offer convenience through 24/7 appointment booking.
- Patient records are often misplaced or inconsistently maintained.

2.3 Overview of System Functions

- To provide patients with a convenient way to register and book appointments.
- To help doctors manage schedules efficiently and provide digital prescriptions after consultations.
- To reduce front-desk workload by automating registration, appointment management, and record handling.

2.4 Interaction With Other Systems

- The system interacts with a database to store patient details, appointments, and prescriptions.
- It integrates with front desk operations, allowing receptionists to update or review patient records.

2.5 Objectives of the System

- To develop an efficient appointment scheduling and management mechanism.
- To allow doctors to manage schedules and issue digital prescriptions after consultations.
- To maintain a digital record of appointments and prescriptions for easy access.

3 Glossary

Term	Meaning
Registration	The process of collecting and recording patient information during their first visit.
Appointment	A planned visit scheduled for a patient to consult a doctor at a specific time.
Consultation	The interaction between a doctor and a patient for medical examination, diagnosis, or advice.

4 User requirements

- The system allows patients to view available doctors and book appointments online.
- The system displays the daily/weekly schedule of appointments to doctors and enables them to create and upload prescriptions and mark appointments as completed.
- The system enables staff to quickly register walk-in patients and manage all appointments, including scheduling conflicts.

5 System requirements

5.1 Functional Requirements

- Support dynamic appointment management with real-time slot validation, cancellation/rescheduling capabilities, and secure access to digital prescriptions and patient visit records.
- Facilitate real-time appointment dashboard management, status updates, and secure creation, storage, and retrieval of digital prescriptions linked to patient records.
- Facilitate walk-in patient registration, centralized appointment scheduling, and updating of patient and appointment records with secure, role-based access control.

5.2 Non - Functional Requirements

5.2.1 Ethical Requirements

- Medical data of users should not be kept publicly accessible.
- User data should not be sold or shared with third parties.

5.2.2 Performance Requirements

- Basic patient data should be automatically filled during appointment booking to reduce user effort.
- Appointment booking confirmation shall be displayed immediately after submission.

5.2.3 Security Requirements

- Ensure that only authorized users can access the portal based on their assigned roles.
- Sensitive patient information shall be accessible only to users with appropriate permissions.

5.2.4 Usability Requirements

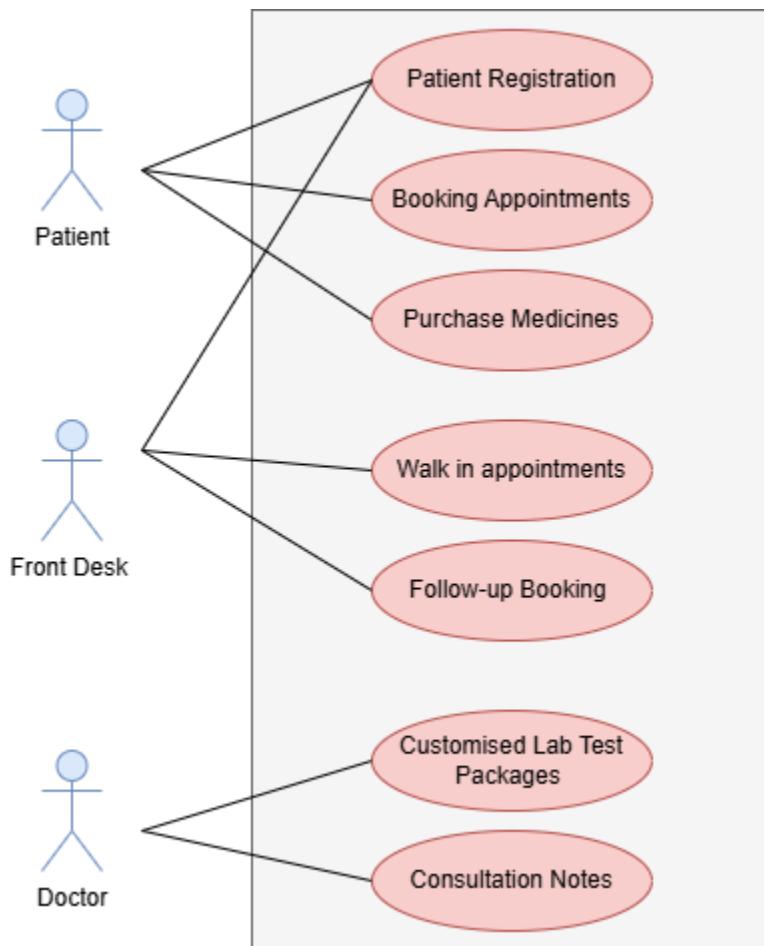
- Ensure major features are easily accessible from the opening page using a simple user interface.
- Avoid displaying complex or unnecessary information that may confuse patients.

5.2.5 Dependability Requirements

- Prevent double-booking of the same doctor for the same time slot.
- Ensure the hospital contact number is accessible to patients if the portal is unavailable.

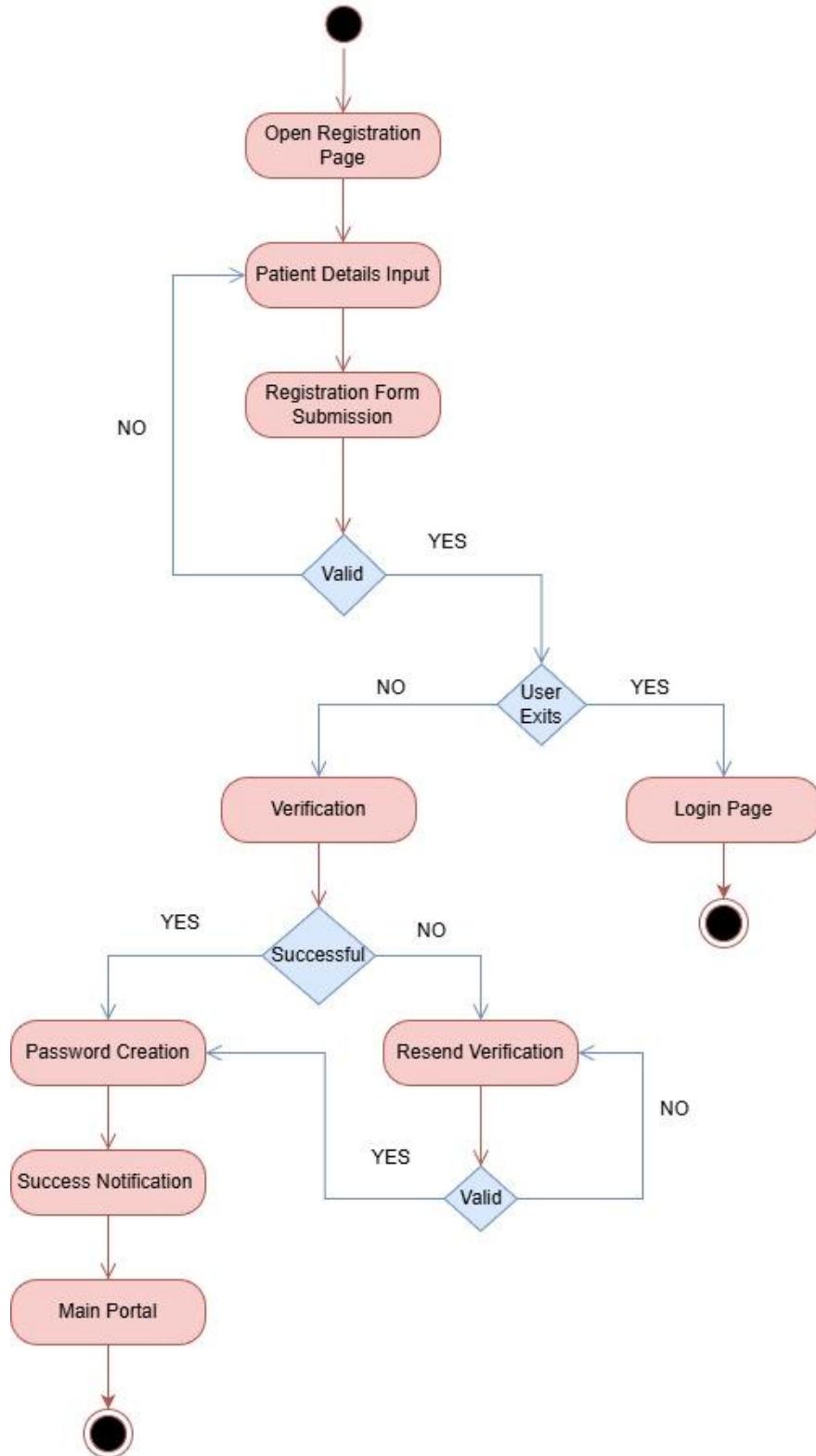
6 System Models

6.1 Use Case Diagram

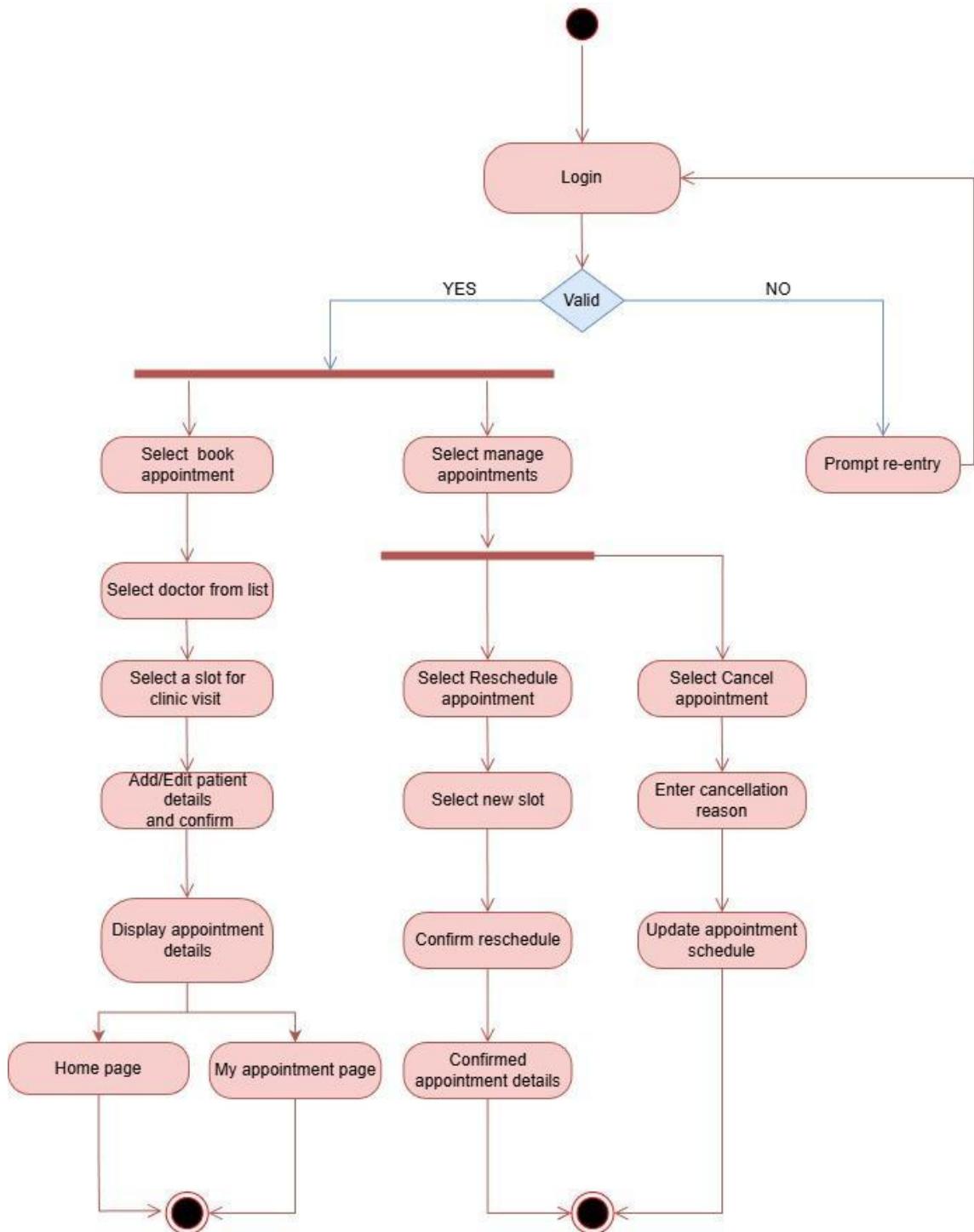


6.2 Activity Diagrams

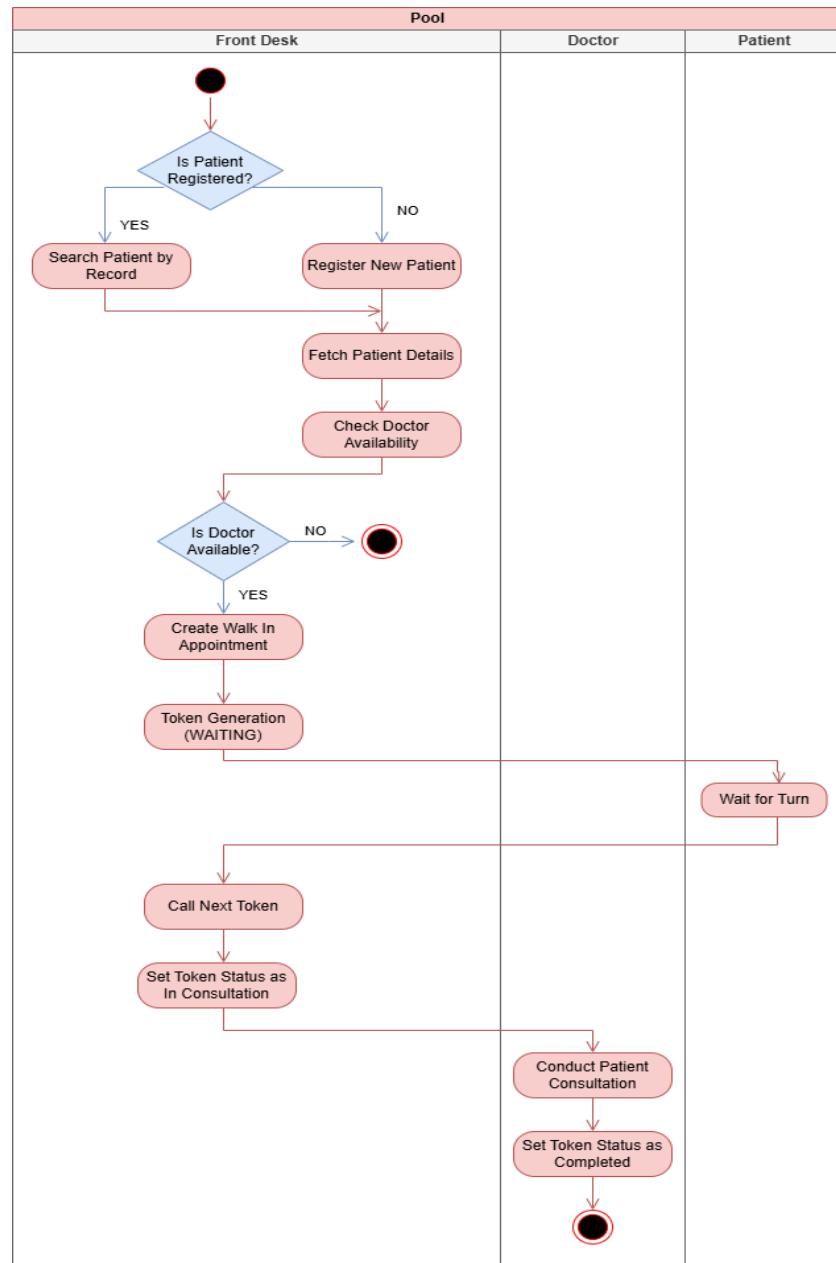
6.2.1 Online Registration



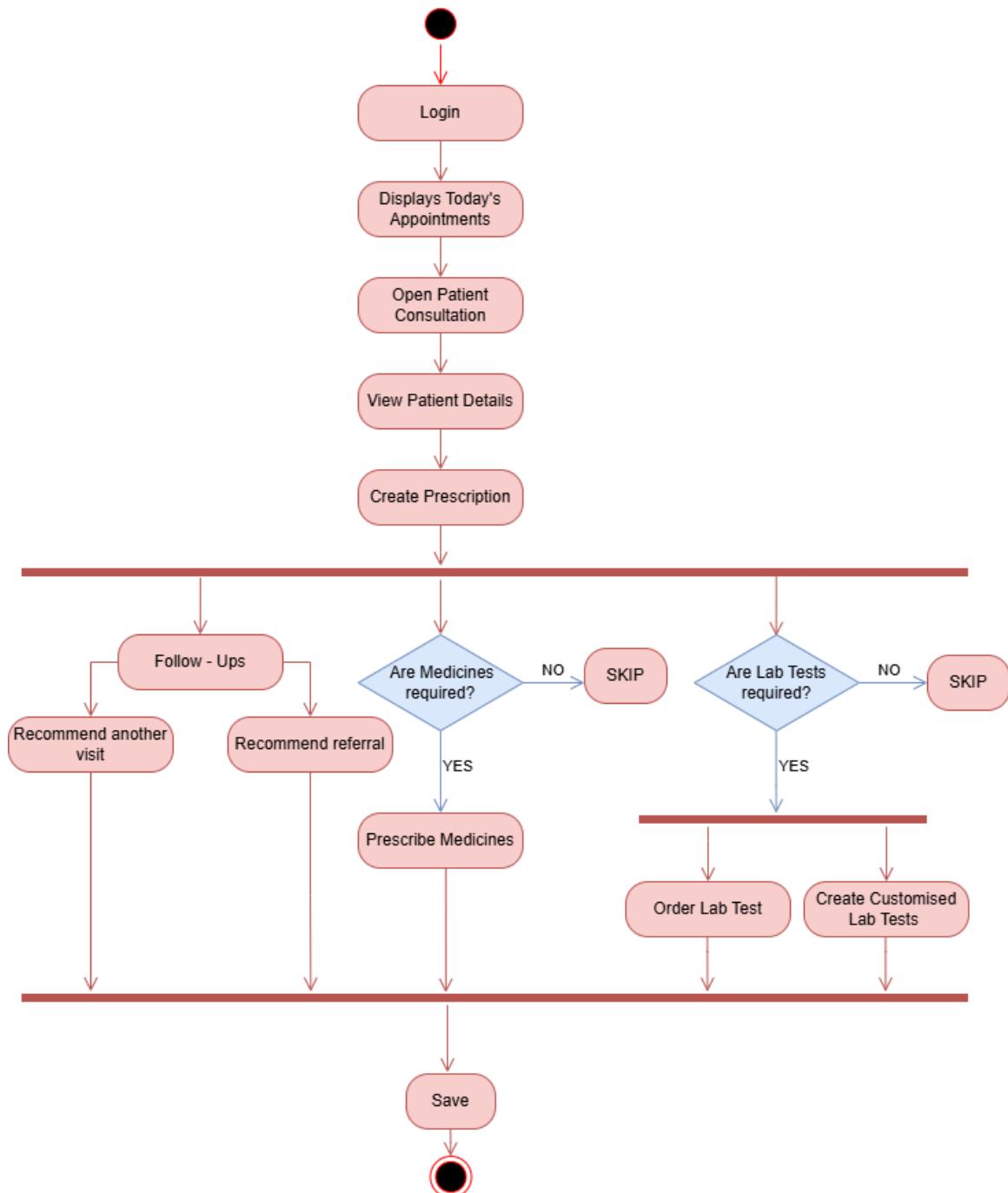
6.2.2 Online Appointment Booking



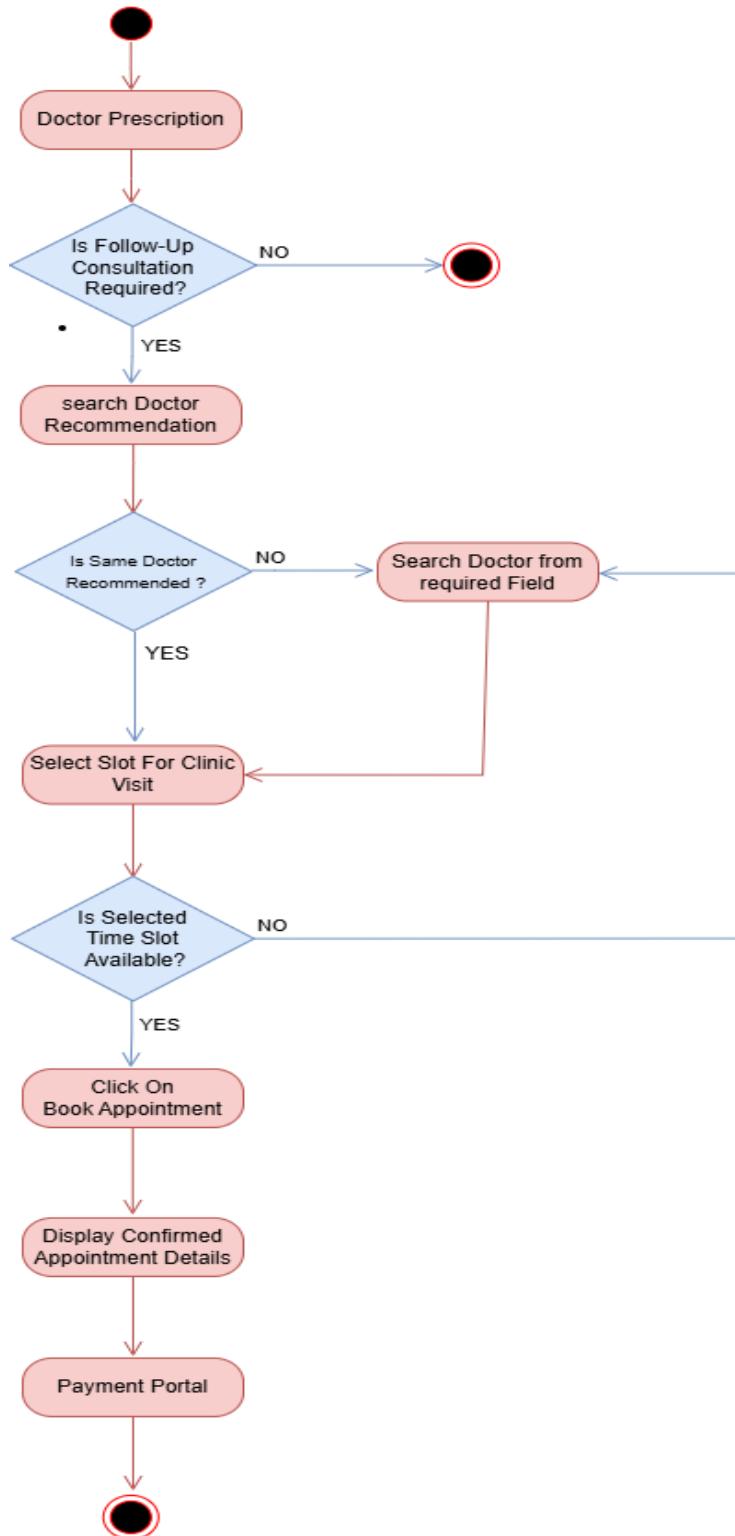
6.2.3 Walk-In Appointment



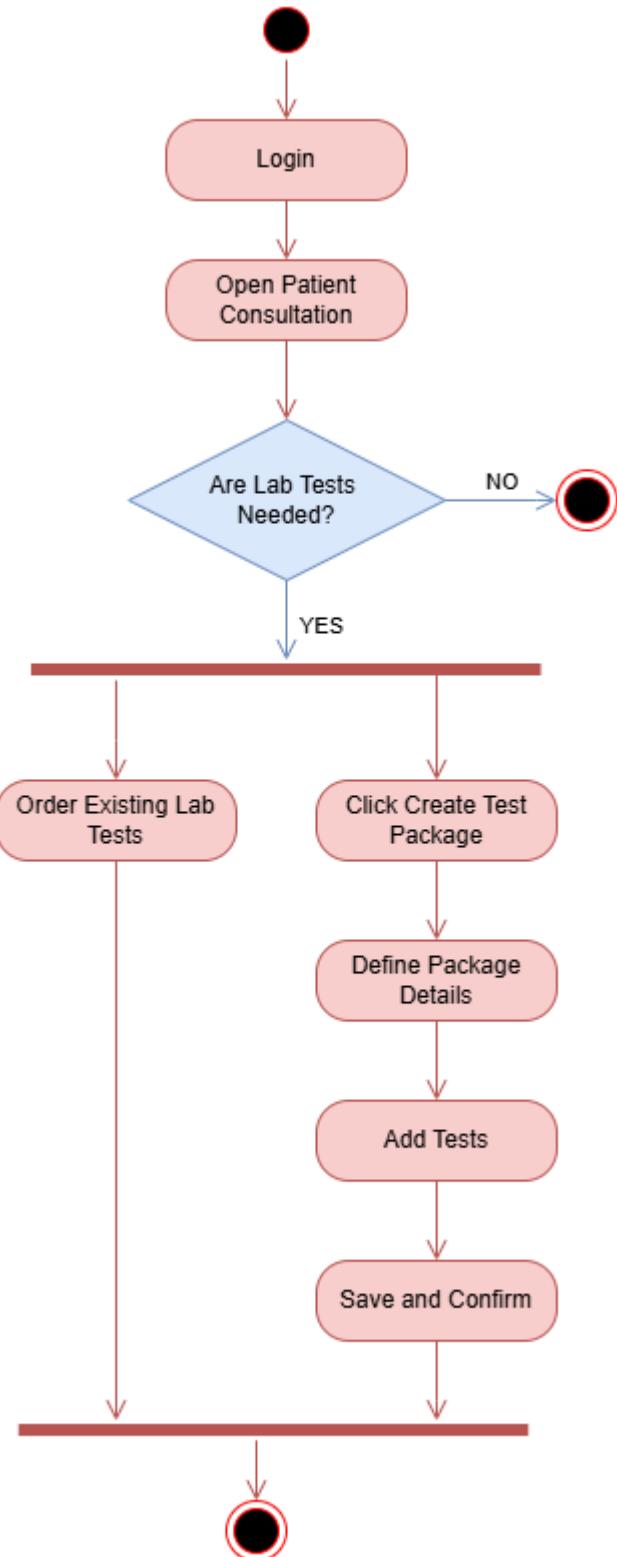
6.2.4 Consultation Notes



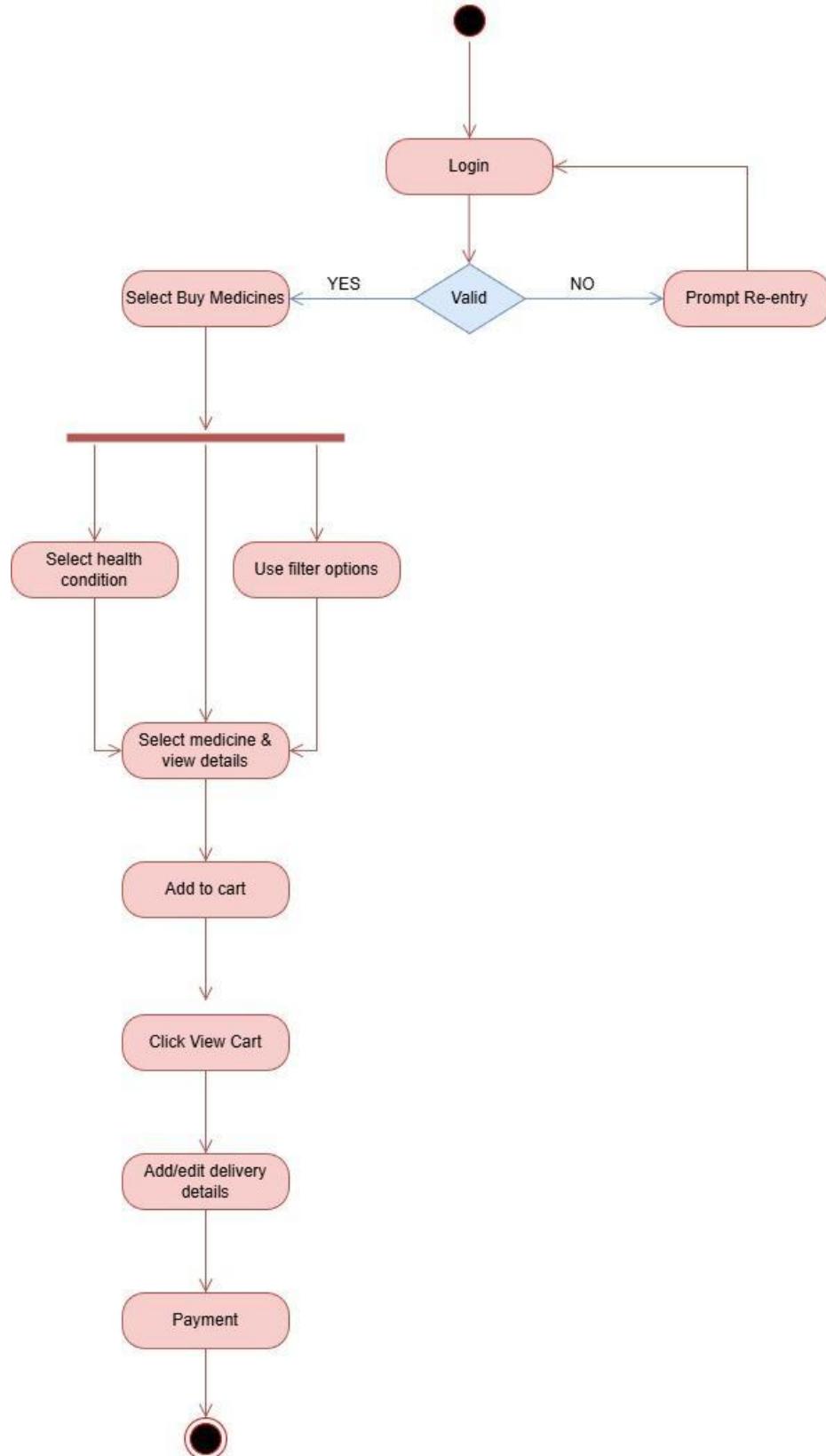
6.2.5 Follow-Up Booking



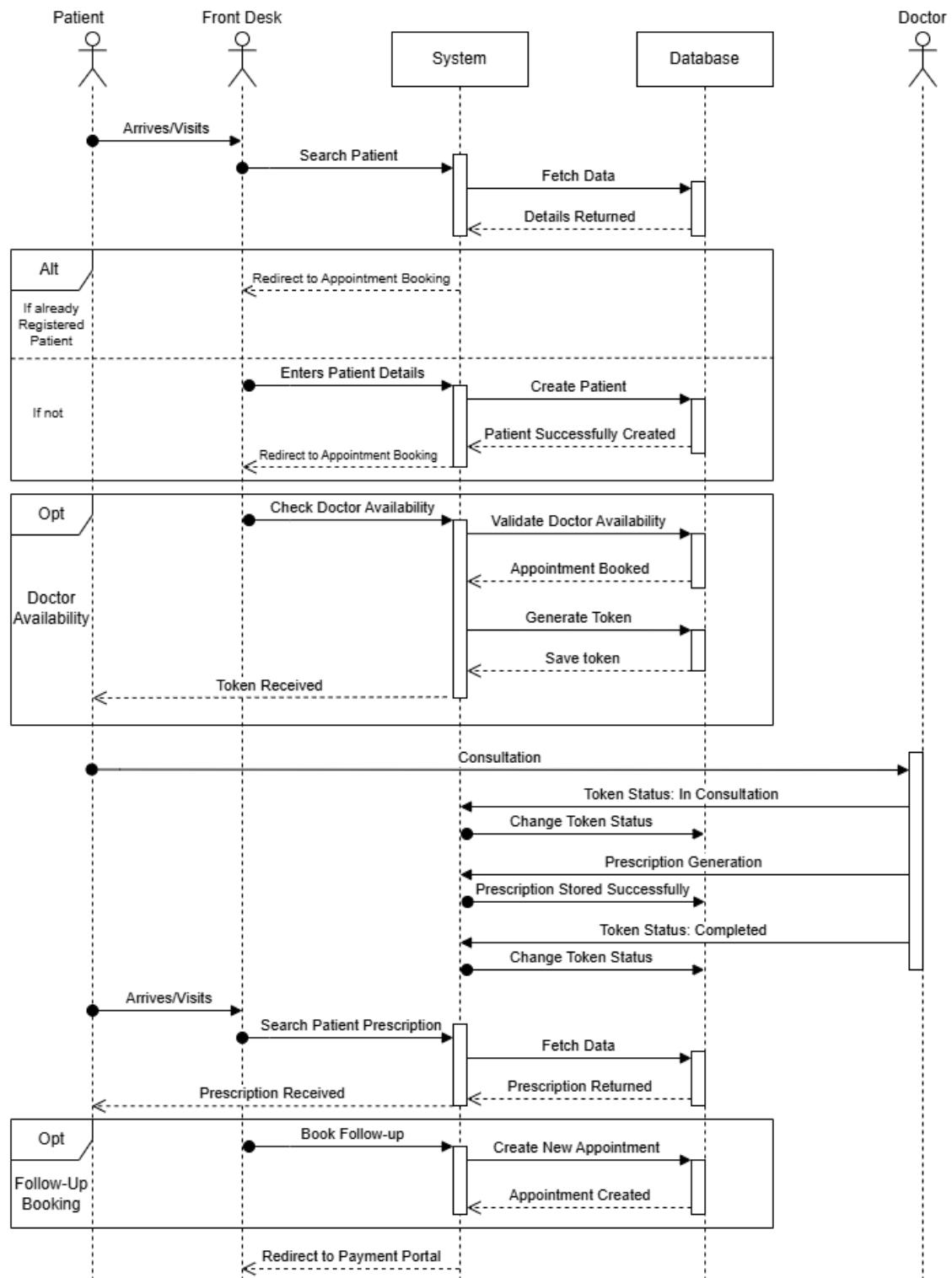
6.2.6 Customized Lab Test Packages

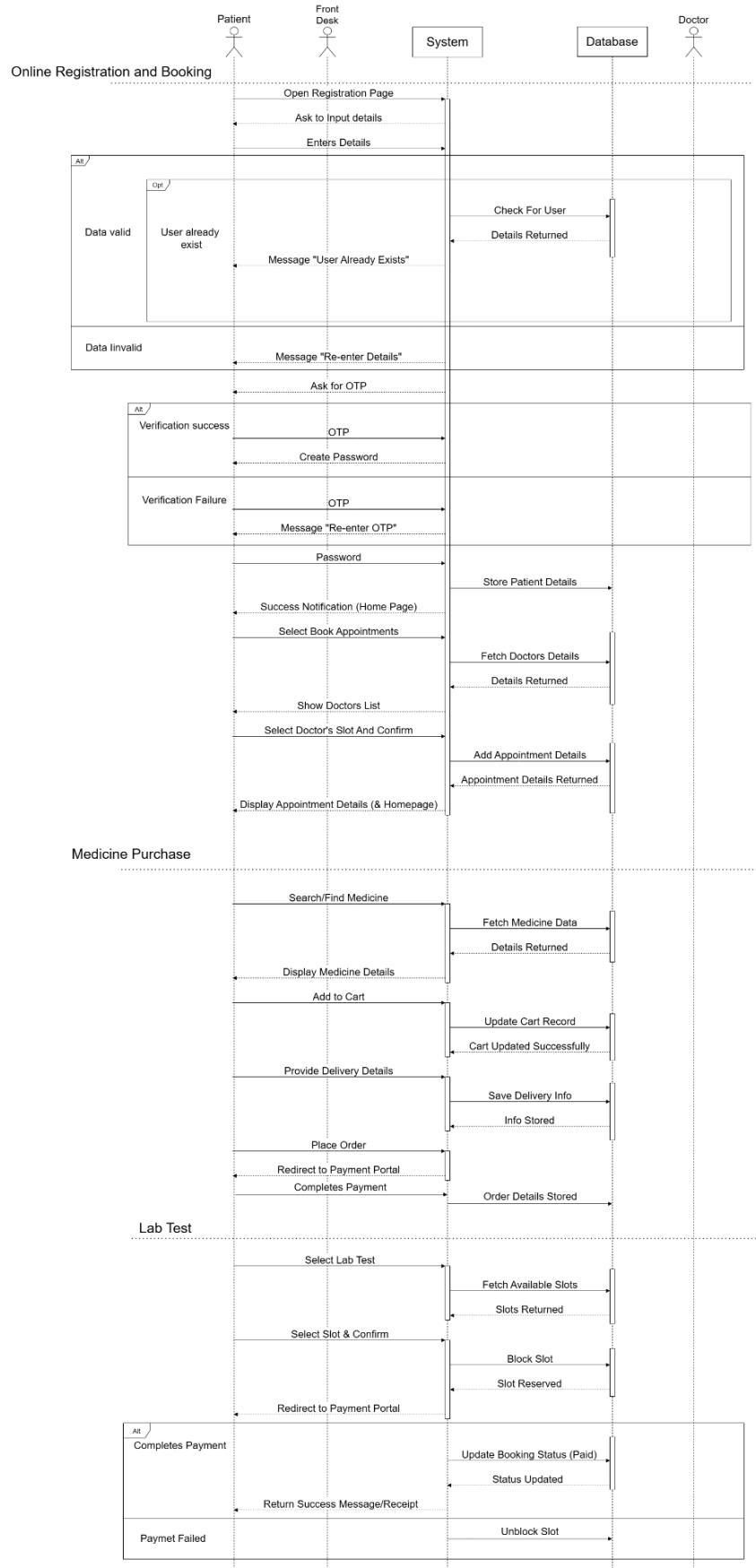


6.2.7 Purchase Medicines



6.3 Sequence Diagrams





7 Appendices

7.1 Appendix A

Hardware Requirements

- **Processor:** Dual-core processor or higher
- **RAM:** 4 GB minimum
- **Storage:** 10 GB free disk space
- **Display:** Standard monitor
- **Network:** Internet connectivity
- **Input Devices:** Keyboard and Mouse

7.2 Appendix B

Database Requirements

The database stores information related to patients, doctors, appointments, consultations, and follow-ups.

Key Data Entities

- Patient
- Doctor
- Appointment
- Consultation
- Prescription
- LabTest
- FollowUp
- Token

Data Relationships

- A patient can have multiple appointments.
- A doctor can handle multiple appointments.
- Each appointment is linked to one patient and one doctor.
- A consultation is associated with an appointment.
- Prescriptions and lab tests are generated during consultation.

8 Future Scope

- Add automated notifications for appointments, follow-ups, and test results.
- Support multi-specialty and multi-hospital networks.
- Incorporate secure online payments.

9 Conclusion

This system streamlines patient registration, appointment scheduling, and consultation workflows, improving efficiency, reducing errors, and enhancing the patient experience. By providing role-based access for doctors and front desk staff, it ensures accurate record-keeping and smooth hospital operations.