CS 5200 - Database Management Systems
Project Proposal
Clinic Management System

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1 Introduction

In a rapidly changing healthcare landscape, effective clinic management is essential for providing high-quality patient care. To address the specific needs of internal operations, we present a proposal for the development and implementation of a Clinic Management System (CMS). Our team plans for a system designed to optimize clinic operations while improving the overall patient experience.

2 Project Discription

Our project focuses on building a comprehensive database to store and manage critical data while providing a user-friendly interface for various user operations. The database will encompass a wide range of information, including employee and patient records, appointment schedules, medical histories, prescriptions, medication details, and more.

2.1 User Focus

The primary users of this system are employees within the clinic and patients. The system will offer multiple views and access levels tailored to different user roles.

2.2 Patient Perspective

Patients will have the ability to schedule appointments, access appointment details, review prescriptions, and make payments.

2.3 Doctor and Nurse Perspective

Medical professionals, such as doctors and their assigned nurses, will be able to work together to access patient records, write medical histories, and issue prescriptions. This collaborative approach ensures efficient patient care.

2.4 Managerial Features

For clinic managers, the system will provide comprehensive oversight capabilities. They will be able to monitor clinic operations, access visualized data on the organization's financial status, patient statistics, and employee performance.

2.5 Additional Ambition

If time allows, the project aims to develop into a comprehensive web application, providing an even more accessible and interactive platform for users.

3 Software

Considering that we plan to create a web application, our approach would involve the following components:

3.1 Database Management

To establish a robust foundation, we will employ SQL in combination with MySQL Workbench for database creation and management. This will ensure secure and efficient data storage and retrieval.

3.2 Python Integration

Python will serve as the intermediary between users and the database, facilitating seamless interactions. We will leverage Python's extensive libraries for SQL integration, with a focus on Django for enhanced efficiency.

3.3 Front-End Development

The user interface will be developed using JavaScript and the React framework. This choice allows us to create an intuitive and user-friendly front-end, ensuring a smooth user experience.

4 Domain Interest

One of our team members has a personal connection to the healthcare industry, as their parents own a clinic. This connection has inspired our project as we see an opportunity to apply our knowledge in Python and web development to create a practical database management system. Given that this project is part of our coursework in database management, our primary focus is on gaining hands-on experience and applying the concepts we've learned in class.

Our motivation for this project stems from the desire to address the specific needs of clinics, especially those of our team member's parents. We aim to build a simple yet effective web application that serves as a real-world application of the database management principles we're studying. This project represents an exciting opportunity to bridge the gap between theory and practice in the context of a database management system course.

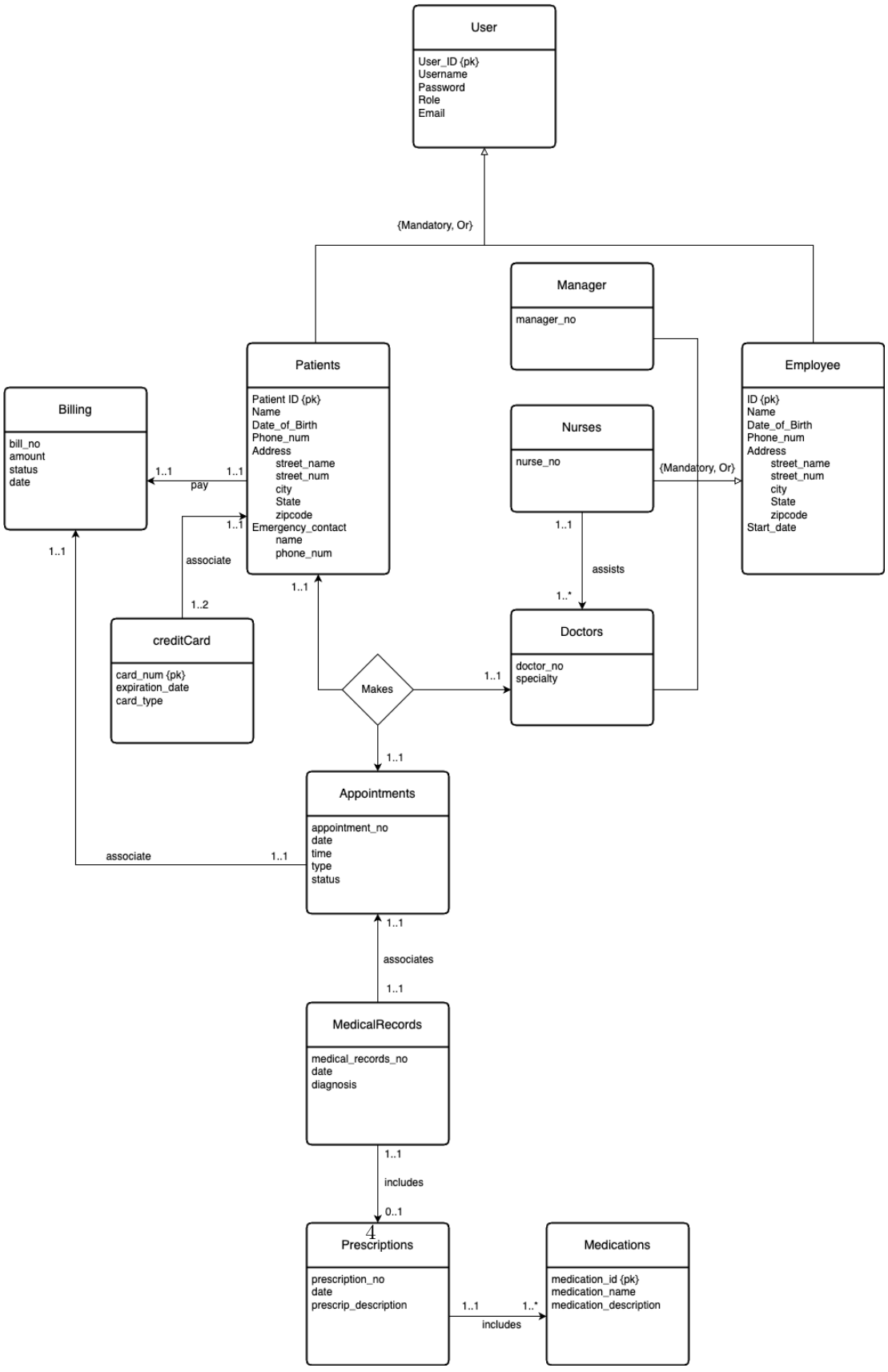

Figure 1: UML Diagram

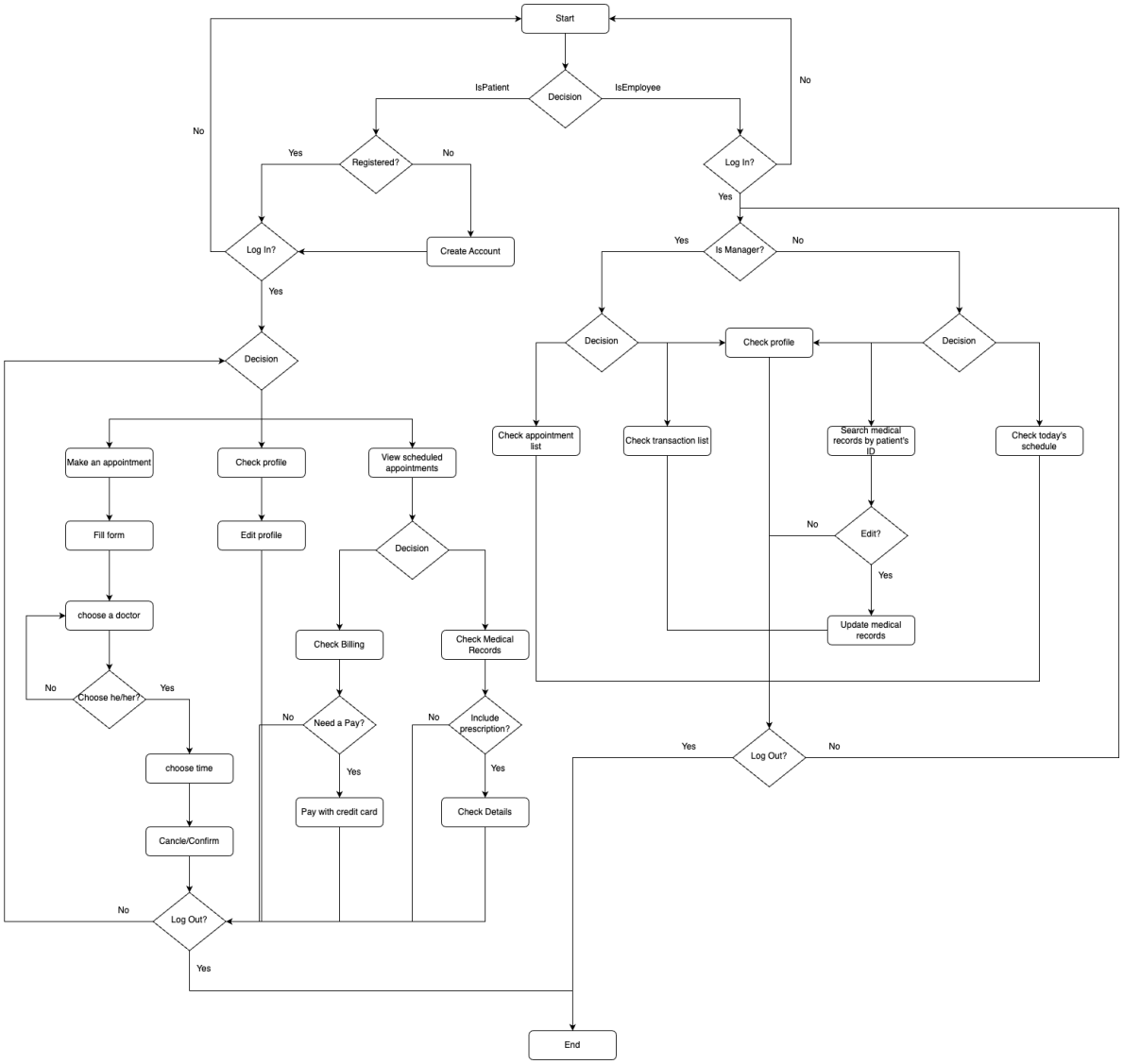

Figure 2: Flow Chart