



Software Requirements Specification For Hospital Database Management System (Patients Treatment details)

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1. Introduction

1.1 Purpose

The purpose of this document is to present a detailed description of the Hospital Database Management System about patient treatment details. It will explain the purpose and features of the system and what the system will do. This system will make the process of receiving treatment for patients and the process of providing treatment to doctors more effective and successful. We aim to provide a smart health service to the public with modern technologies that are more successful and efficient than the existing system.

1.2 Intended Audience

- Hospital Management
- Doctors
- Patient
- Pharmacy of government hospitals
- Lab of government hospitals

1.3 Scope

The system aims to provide the following functionalities:

- Identification of users (doctors, patients, laboratory staff) within a single application.
- Storage of doctor notes, prescriptions, laboratory reports, and treatment history associated with each patient.
- Generation of unique QR codes for each user, facilitating easy and unique identification by the hospital staff.

The application runs online. Due to privacy related incidents, no data is allowed to be saved on the mobile phone.

2. Overall Description

2.1 Product Perspective

This app is expected to lay the foundation for the successful and efficient treatment of diseases based on data and information. Maintaining a long-term health profile of each patient helps doctors make the right decisions at the right time. It also makes it easier for patients to maintain their medical files.

2.2 Product Features

- Being able to identify doctors, patients, pharmacists, hospital management and labs separately through one app.
- Ability to enter patient disease details, prescriptions, and Lab reports.
- All documents are saved in the cloud.

3. User Characteristics

Patients

People who seek health services from government hospitals belong to this category. They may vary based on age, technological trends financial background, and accessibility needs.

Doctor

Doctors are the most important party in this process. With this software and QR code system, the process of examining patients as well as the process of giving medicine is efficient. This greatly facilitates their work.

Pharmacy of the government hospital

This includes the drug dispensing unit of government hospitals. This unit provides medicines to the patients according to the approval of the doctors. By using a QR code, they can get the relevant information of the patient and thus the process of providing the relevant medicine can be carried out efficiently.

Lab of the government hospital

This unit conducts various tests related to patients. It is the responsibility of this unit to obtain the correct test results obtain their correct data and provide the reports correctly to the doctors and patients.

Hospital Management

This includes all officials involved in the administration of government hospitals. Hospital Administrator, Clinical Manager, Health Information Manager, Medical staffing manager, and financial planning manager are some of them.

4.System Features and Requirements

Functional Requirements

- The system must be capable of authenticating users and granting appropriate access permissions based on their roles.
- Special users (Doctors, Pharmacy of the government hospital..) can create, view, update, and delete medical records, including doctor notes, prescriptions, and laboratory reports.
- This app can generate a unique QR code for each user during registration, ensuring efficient patient identification.
- The system should provide a search functionality to quickly retrieve patient records based on various criteria, such as name, medical ID, or QR code.

Non-Functional Requirements

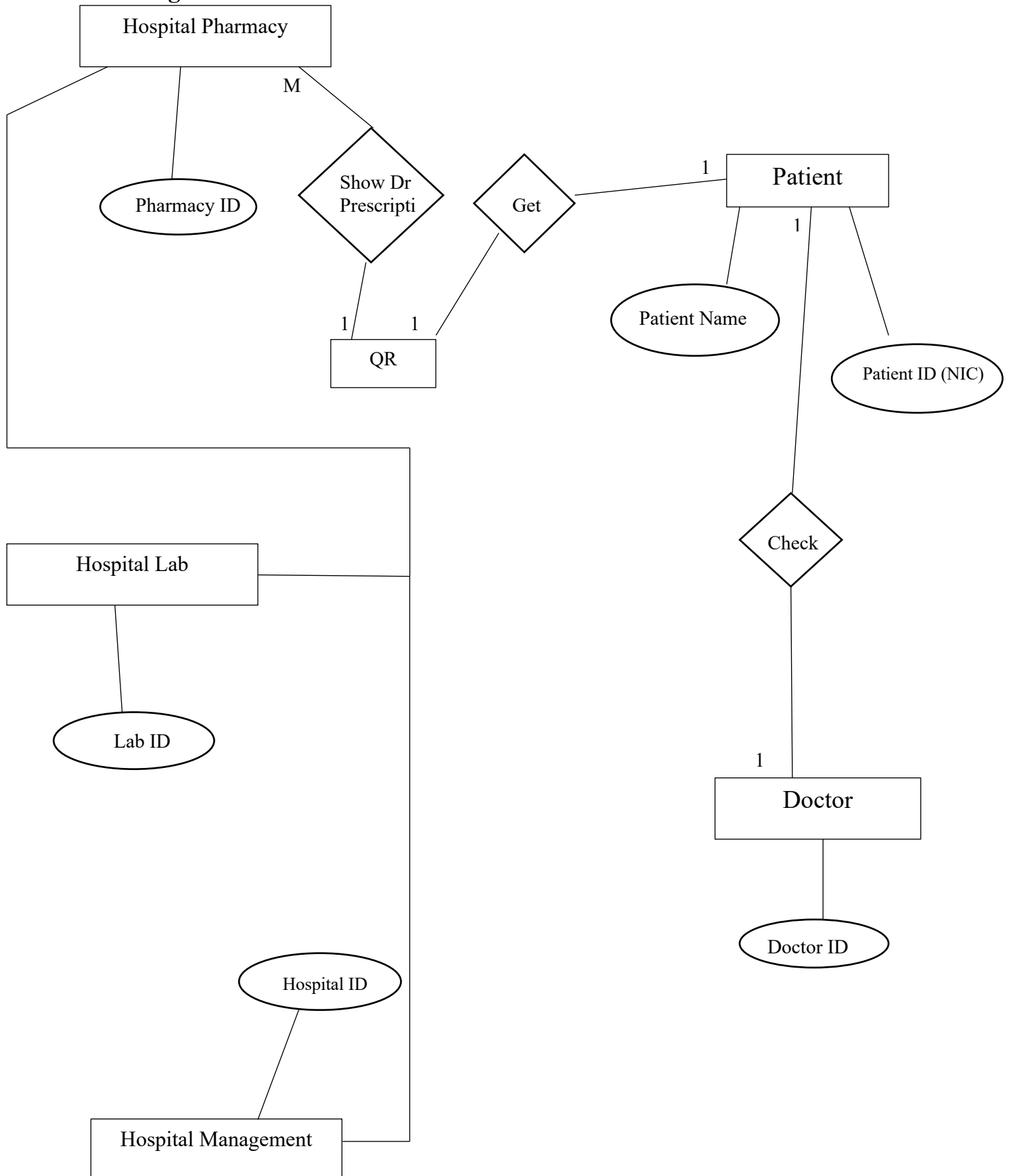
- Security: A person's health data is very sensitive information. Therefore, the security of that data should be ensured.
- Performance: This app is capable of handling a large volume of concurrent users and medical records efficiently without compromising system performance.
- Usability: The user interface is intuitive and user-friendly, allowing users to navigate the system easily and perform tasks without extensive training.
- Reliability: The system is highly reliable, ensuring minimal downtime and data loss to maintain uninterrupted access to critical medical information.

5. System Architecture:

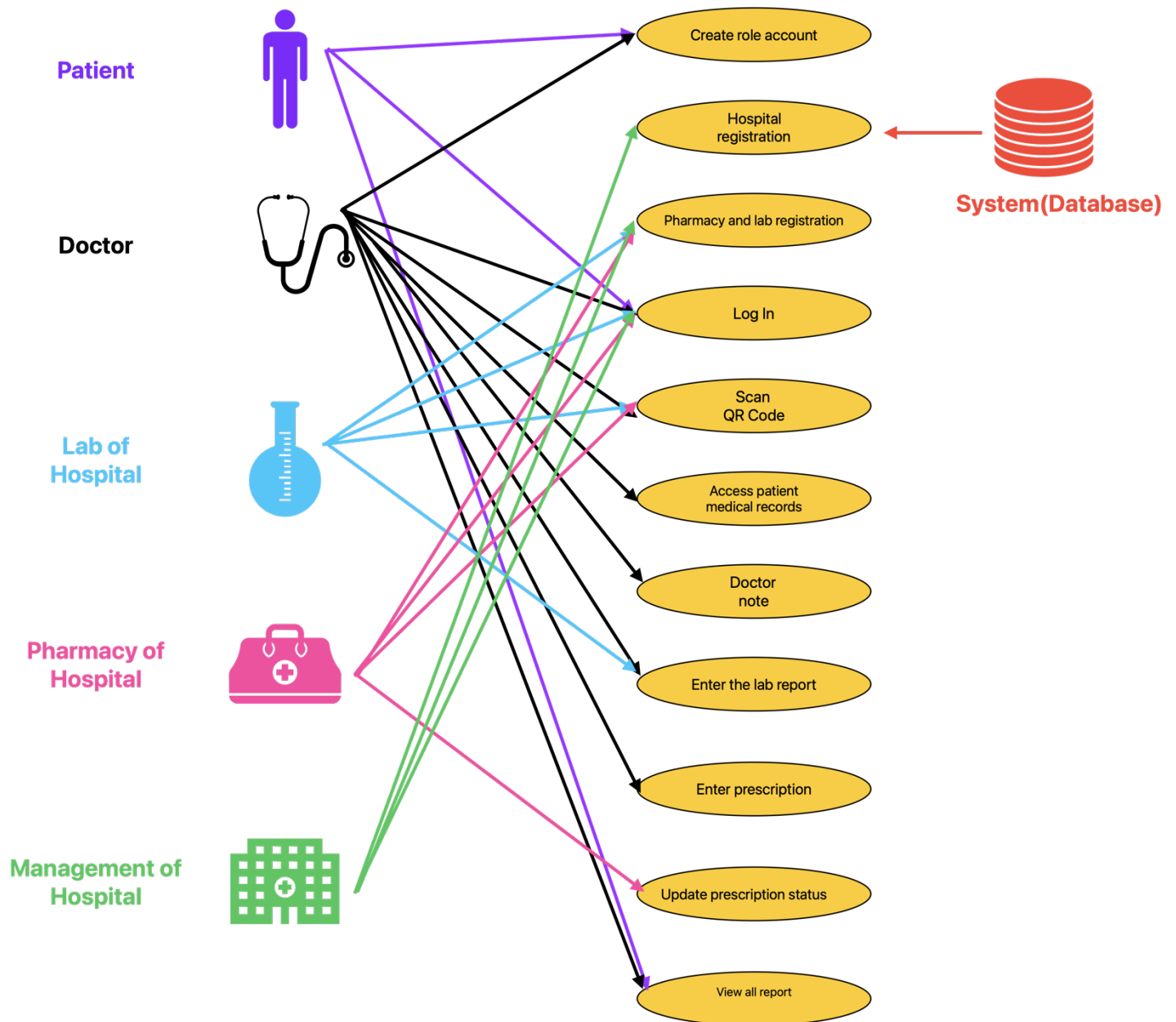
This app is developed by Flutter as an iOS, Android, macOS and Windows app using Dart Language. This app adopts a client-server architecture. Clients, including web and mobile applications, interact with the server to access and manipulate medical records securely. As a database, we use Google Firebase. Not only that, we use Firebase authentication to authenticate users.

6. System Design

ER Diagram

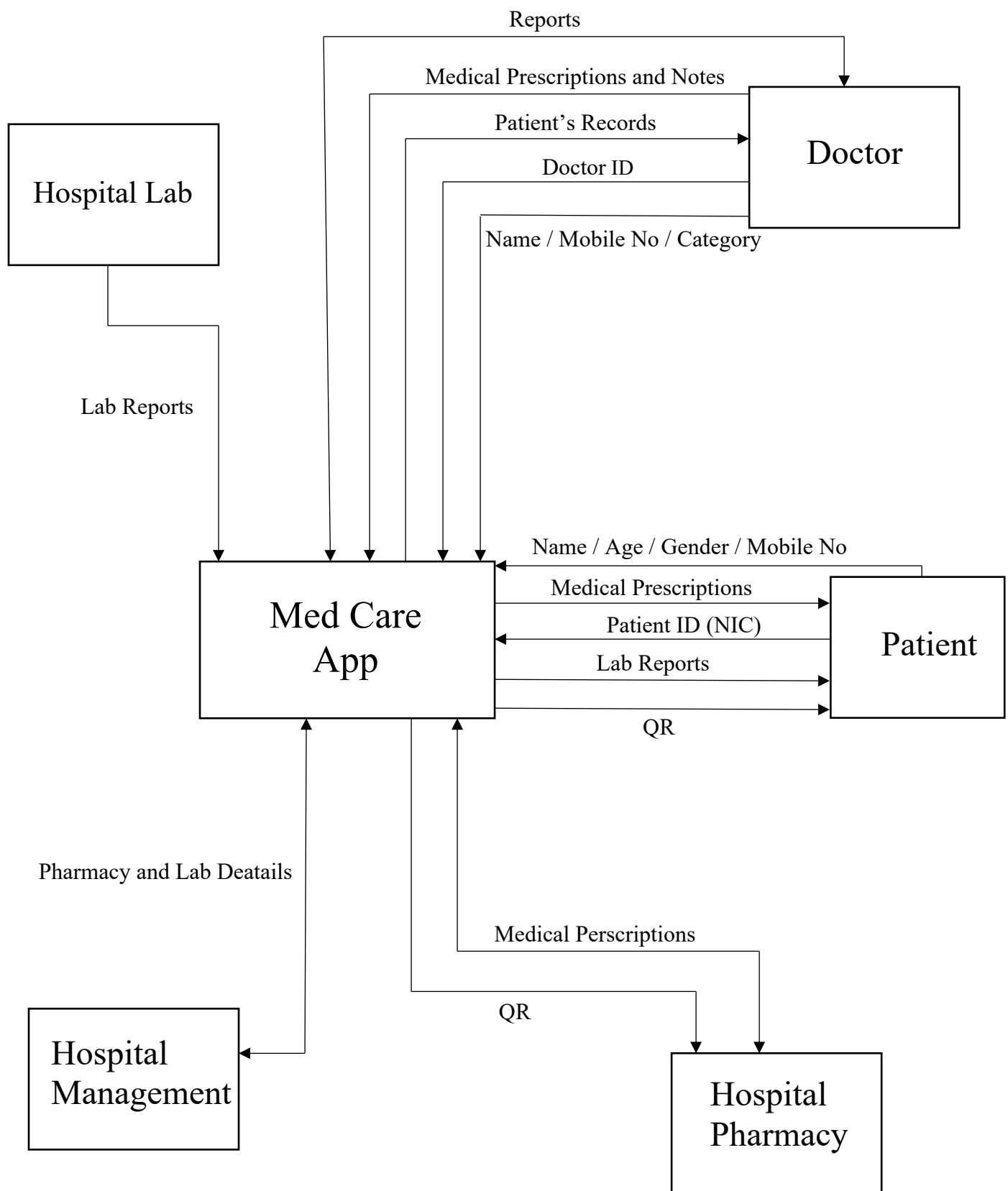


User case diagram

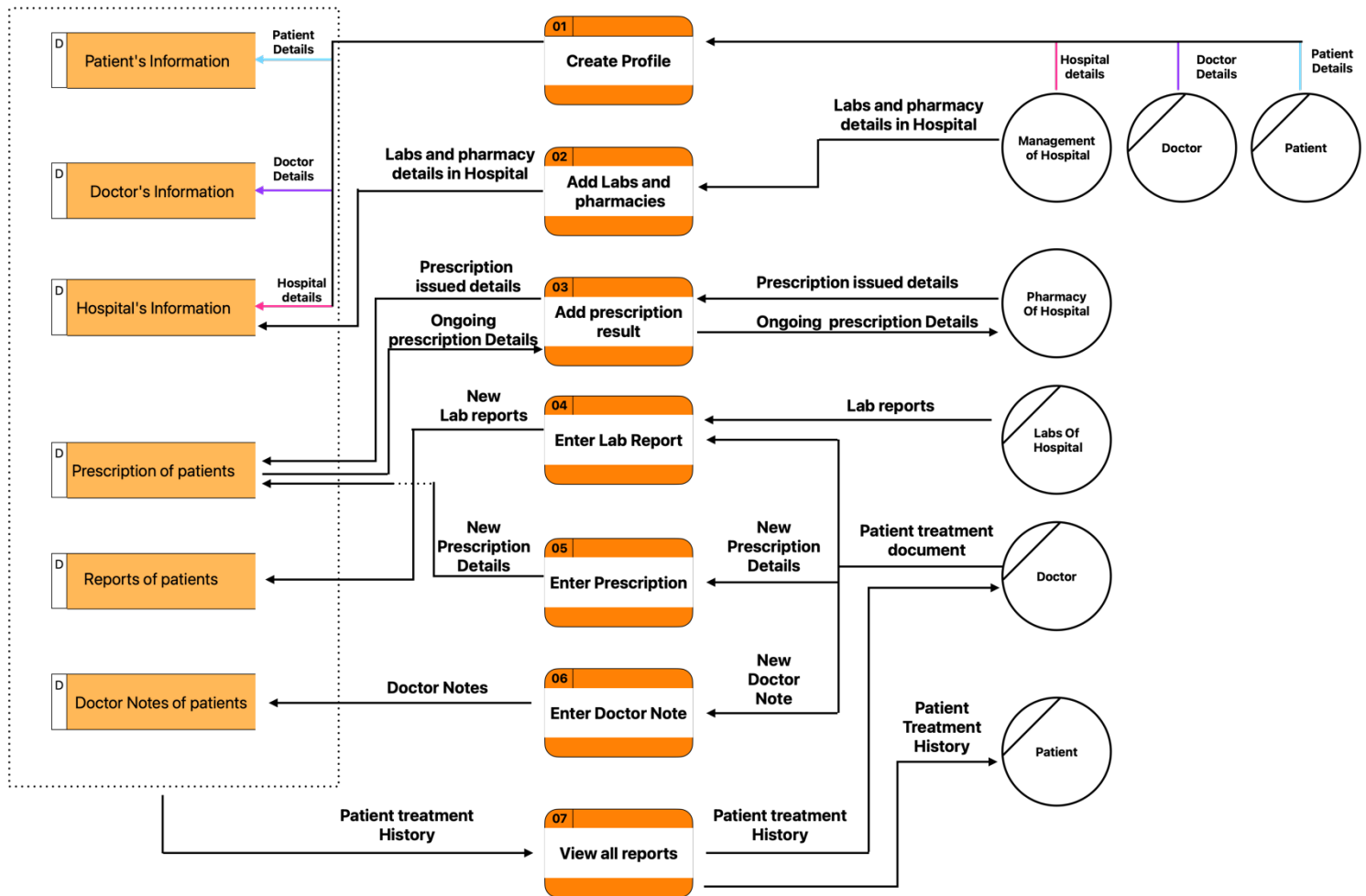


DFD Diagram

Level 0



Level 1



Database Diagram

Patient's Information	
Patient name	Strings
<u>Patient_NIC_Number</u>	Strings
Address	Strings
Mobile_Number	Integer
BirthDay	Strings
Gender	Strings

Doctor's Information	
Doctor_name	Strings
Doctor_NIC_Number	Strings
<u>Doctor_RegNo</u>	Strings
Address	Strings
Mobile_Number	Integer
BirthDay	Strings
Gender	Strings

Hospital's Information	
Hospital_name	Strings
<u>Hospital_Id_Number</u>	Strings
City	Strings
District	Strings
Province	Strings
Land_line_number	Integer
E_mail	Strings
<u>Lab_id</u>	Strings
<u>Pharmacy_id</u>	Strings

Prescription of patients	
Patient_name	Strings
<u>Patient_NIC_Number</u>	Strings
Date	Strings
Doctor_RegNo	Strings
Medicines	Strings
<u>Prescription_id</u>	Strings
Pharmacy_updates	Strings
Pharmacy_id	Strings

Reports of patients	
Patient_name	Strings
<u>Patient_NIC_Number</u>	Strings
Date	Strings
Issued_doctor_or_lab	Strings
Report_data	Strings
<u>Report_id</u>	Strings
<u>Lab_id</u>	Strings

Doctor Notes of patients	
Patient_name	Strings
<u>Patient_NIC_Number</u>	Strings
Date	Strings
Issued_doctor	Strings
Note_data	Strings
<u>Note_id</u>	Strings

