Advanced Databases Project - Assignment 1

Team: Sifael Sebastian Ndandala
Email: sifael.ndandala@gmail.com
Deadline: 05 März 2024, 23:59

Project Description: Patient Management System

The Patient Management System is a web application designed to streamline the process of accessing and managing patient information for General Practitioners (GPs) and Specialized Physicians (SPs). The interfaces allows GPs and SPs to log in and search for patients and within a few clicks, can access comprehensive medical history and current information, allowing the GP/SP to effectively and efficiently provide medical care.
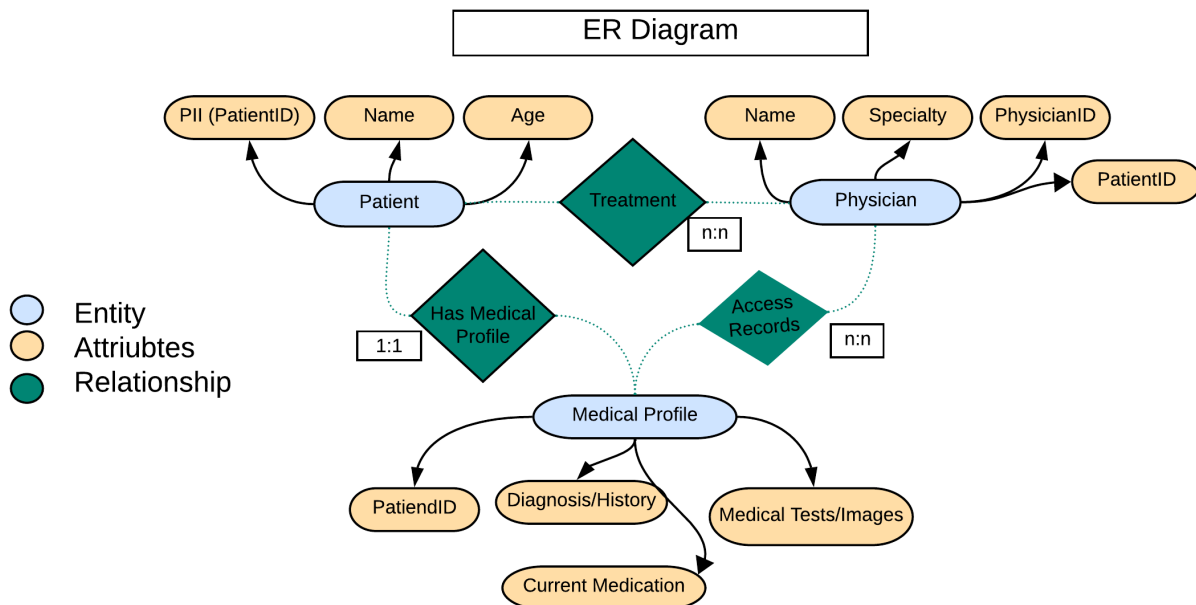
1. Functionality

The customer/end user of this application is a Physician/Doctor. From a user perspective, the system offers the following functionalities:

- **User Authentication/Log In**: Users can log in securely to access the system using their credentials.
- **Patient Profile Search and Access**: Once logged in, users can search for and access patient profiles using their full name or unique identifier.
- **View Patient Information**: Users can view detailed patient information, including Personal Identifiable Information (PII) such as full name, age, known medical conditions, past diagnosis, and current diagnosis and medications/treatment.
- **Access Image Scans**: The system allows users to access recent image scans, particularly MRI scans, for diagnostic purposes.
- **Medication Management**: Users can review the current medications prescribed to the patient, aiding in treatment planning and coordination.
- **Provide Medical/Diagnostic Notes**: Users can write medical notes based on visits and assessment and note medication and/or treatment plans they prescribe to the patient.

2.1 Entity Relationship Diagram

There are three core Entities for this application: **Patient, Physician** and **Medical Profile**. Each

Entity has a relationship with each other.

2.2. Entity Relationships

Patient <-> Physician: This is a many-to-many relationship as a patient can see multiple physicians (for varying reasons such as specialization, second or third opinion) and a physician can see multiple patients.
Patient <-> Medical Profile: This is one-to-one relationship. A patient will atmost have one medical profile and one profile can be exist for more than one patient.
Physician <-> Medical Profile: This is a many-to-many relationship with a Physician allowed to see more than one profile and profiles are visible to as many Physicians are allowed.

3. User Interaction

Login: Users interact with the system by logging in securely using their credentials.
Search: Users can search for patient profiles by entering the patient's full name or unique identifier.
View Patient Profile: Once a patient profile is accessed, users can view detailed information about the patient, including PII, medical conditions, and medications.
Access Image Scans: Users can view recent/past image scans, primarily MRI scans, for diagnostic purposes.
Annotate Notes and Prescribe: The system enables users to review the current medications annotate new diagnosis and medication to maintain an accurate history of medical conditions and medication.

Error Handling/Limitations: The system is equipped to handle illegal inputs or actions, providing appropriate error messages. For example, Physicians can only access User Medical Profile if they are infact treating that patient.