DS5110 Introduction to Data Management and Processing: Project Proposal

Project Participants - Abhinav Nippani, Ayush Patel, Shivansh Verma

System Description

To develop an application that is tied to several hospitals and clinics where a user can book an appointment seamlessly with any hospital they want and streamline the process from booking an appointment to getting the required diagnosis.

Since there are 18 tables in our project, we are dividing the design of these tables equally and collaboratively working to make sure that the data standards of attributes are maintained throughout the database. We would also collaboratively work while designing the frontend of the project.

This is a tentative list of tables that is going to expand as further development activities progress in the project.

- User (can view, sign-in, log-in and book an appointment)
- Doctor (can view their schedule, move the appointments in the queue)
- Specialization (contains the data about the specialization of the doctor so that the user can view and book an appointment respectively)
- Administrator (can add, delete, update the data in the system)
- System (details of the primary key of each table)
- Schedule (a fix schedule is created and updated of the doctors)
- Appointment (contains the id, date, hospital name, etc.)
- Diagnosis (contains the details of the diagnosis provided by the doctor to the respective patient)
- Lab (data about the lab location, tests' done at a particular facility)
- Lab_Test_Desc (contains the description of each test recommended by the doctor and the result of the same)
- Lab_location (contains the location and the address of each so that a user visit accordingly)
- Prescription (contains the list of prescribed medicines, daily doses, etc.)
- Medicine (contains the list of medicines and the links to buy them)
- Payment Details (when an appointment is made there is an option for the payment gateway which gives you the option to pay through credit card, debit card, PayPal, Zelle, etc.)
- Insurance Details (contains the details whether the user has an insurance, or is willing to get)
- Reviews (contains the reviews of the doctors from the user after successfully getting diagnosed)
- Contact Us (This table contains the queries that patients have asked for more information on services offered or the suggested treatments)
- Departments (This table contains the list of departments that a particular hospital or clinic has alongside the relevant information)

System Objectives

Often people find it difficult to find the right treatments for their ailments in one hospital. Generally different hospitals have different specializations and people are unaware of them. We are creating a solution for people to look through multiple hospitals and clinics to find the right treatment for them.

- Ability to book appointments with ease using a website/app.
- Ability for the user to look at all possible hospitals, doctors, labs and their respective specializations.
- Insurance integration with their insurance providers.
- Ability for users to ask a hospital question and post their queries.
- One solution for people going to multiple hospitals.
- Ability for users to see all their diagnosis and medications in one place.
- Payment information for seamless booking.

Data Sources

Where will the data come from?

Mock data that will be added to the database so that people can see some content on the website. Later we will be allowing user registration and appropriate preprocessing done while data is being added.

Which preprocessing steps will be needed to clean and prepare the data?

We will be using mock data to begin with so that we can populate our tables with something but after that we will be having appropriate constraints both on the table level and on the UI to make sure that no bad data is being fed to avoid SQL Injection. There would be adequate checks to make sure only clean data is being put in the database.
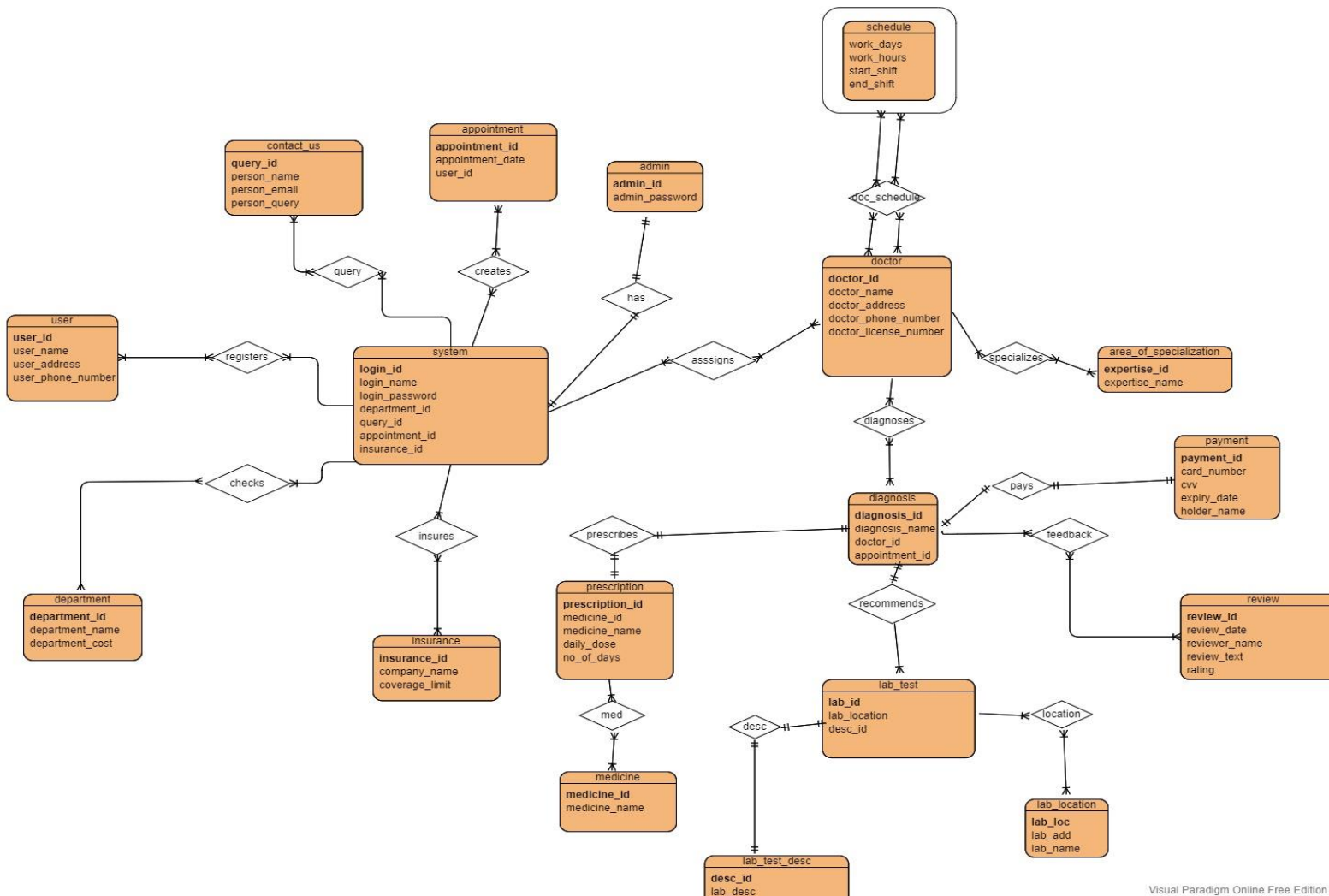
Libraries and Tools:

- MySQL
- Django or ExpressJs
- Python
- HTML
- CSS
- Bootstrap
- JavaScript

Database Design

ERD:

References:

https://www.zocdoc.com/
https://www.mfine.co/