DMDD Group 11 – P2

Entities List:
- Patient
- Appointment (Associative Entity)
- Lab
- Consultation
- Inpatient
- Outpatient
- Rooms
- Visitors
- Doctors
- Prescription
- Billing
- Insurance

Problems we aim to solve:
- Using the data acquired from this database to visualize the trend in recent diseases. This will help the hospital to keep enough stock of the medicines ready.
- Implementing the database to analyze the need to hire more doctors pertaining to a certain specialty to avoid long queues.
- Data from this database can be utilized to create visualizations of room availability, pending bills and patient inflow and outflow to increase the administration efficiency.
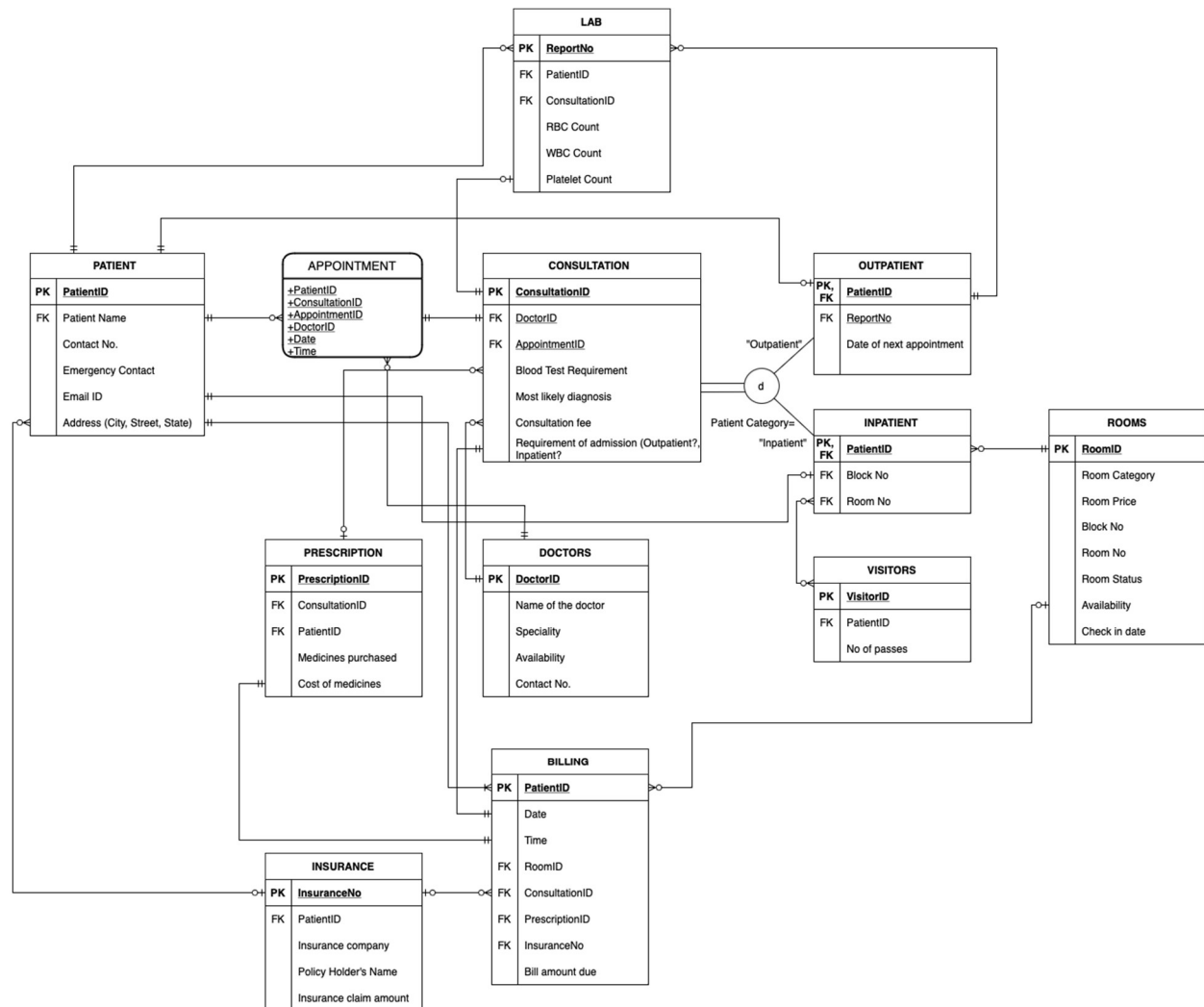
Business Rules:
- A patient may schedule many appointments. But an appointment must be scheduled by a patient.
- A patient may perform multiple lab tests. Lab tests must be performed by at least one patient.
- A patient receives bills based on the services availed. Billing is received by a patient.
- Every appointment leads to a consultation. Appointment must have a consultation.
- A consultation may account prescription information whereas, prescription may be accounted by many consultations.
- Consultation may require one lab report. Lab report may be required for consultation.
- Consultation must have a doctor assigned to it. And Doctor may have many consultations assigned.
- Doctor may require many appointments to be contacted. But Appointment should have one doctor.
- An inpatient may be accompanied by visitors and similarly a visitor accompanies many patients.
- An inpatient must have an allocated room. A room may be allocated to many patients.
- Billing Information may include Room availed. Room may be included in the bills of many patients.

- Billing information must consider the Doctor. And Doctors may be considered in Billing Information.
- Insurance may be taken into account while many billings. And Billing information may take into account about insurance.

Descriptions

- In the patient entity, all the necessary information is collected from the patient.
- After submitting all the necessary information and documents, if necessary, the patient can then move on to booking an appointment based on the doctor or preference and availability of the doctor.
- On the date and time of the appointment selected by the patient, there will be a consultation.
- As part of the consultation the doctor will prescribe medicines and let the patient know if he/she needs to be admitted or not. The doctor will also ask of lab reports during the consultation if required.
- Consultation entity is also connected to a doctor's entity that has all the necessary information about doctors, such as their availability, consultation fee, etc.
- Based on the consultation, medicines will be prescribed to the patient. Thus, a prescription entity is connected to the consultation where the price of the prescribed medicines will be stored.
- Following the consultation, there are two entities connected by a disjoint rule. Under the outpatient, the date of the next appointment and the lab reports if requested, would directly be sent to the patient after a finite duration.
- If the patient needs to be admitted, then under the inpatient entity, the room number, and the block where the patient will be residing will be stored.
- The inpatient entity is further connected to a database that consists of all the information regarding the types of rooms, their prices and availability.
- The inpatient entity is also connected to a visitor's entity which will store some basic information about visitors for safety reasons.
- Finally, there is a billing entity where the final sum of all the cost related attributes will be calculated, and the patient will be charged accordingly.
- If the patient has insurance, the insurance claim amount will also be considered during the billing.
- There will be an entirely separate entity for all the types, insurance categories and claim amounts.

E-R Diagram:

Link to ERD: https://github.com/divya-kharche/DMDD_Project/blob/main/ERD.png

Link to Objectives of Project: https://github.com/divya-kharche/DMDD_Project/blob/main/Empowering%20Hospital%20Operations%20A%20Comprehensive%20Management%20System.pdf