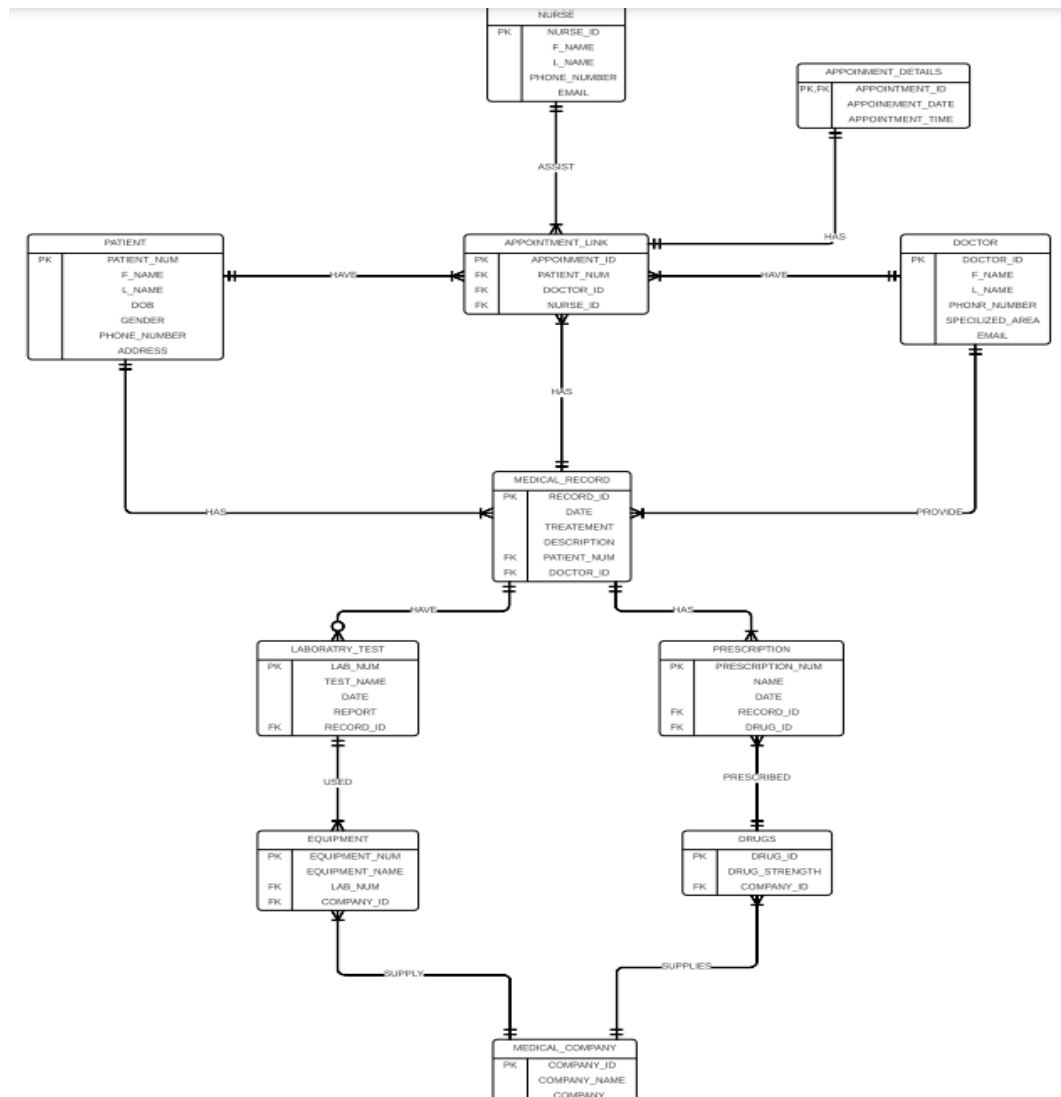


Data & Information Management

Assignment 4.2C

Medical clinic database system

- This project is designed on based on a imaginary idea of a medical clinic database system. There few main core entities like patients, doctors, nurse, appointment and medical record. Here the patient makes appointments to see a doctor in the clinic for many checkups or any other medical problems. Nurse assist patients to through this system and provide service. All the records of the visit of the patient till consulting the doctor is been recorded in the medical record table. The doctor also provide prescription and sometimes lab list to have or various check there. There is a medical company which supplies both drugs and medical equipment.



2. Entities and attributes

1. DOCTOR = {DOCTOR_ID(PK), F_NAME, L_NAME, PHONE_NUMBER, SPECIALIZED_AREA, EMAIL}
2. PATIENT = {PATIENT_NUM(PK), F_NAME, L_NAME, DOB, GENDER, PHONE_NUMBER, ADDRESS}
3. NURSE = {NURSE_ID(PK), F_NAME, L_NAME, PHONE_NUMBER, EMAIL}
4. APPOINTMENT_LINK = {APPOINTMENT_ID(PK), PATIENT_NUM(FK), DOCTOR_ID(FK), NURSE_ID(FK)}
5. APPOINTMENT_DETAILS = {APPOINTEMENT_ID (PK, FK), APPOINTMENT_DATE, APPOINTMENT_TIME}
6. MEDICAL_RECORD = {RECORD_ID(PK), DATE, TREATMENT, DESCRIPTION, PATIENT_NUM(FK), DOCTOR_ID(FK)}
7. LABORATORY_TEST = {LAB_NUM(PK), TEST_NAME, DATE, REPORT, RECORD_ID(FK)}
8. PRESCRIPTION = {PRESCRIPTION_NUM(PK), NAME, DATE, RECORD_ID(FK), DRUG_ID(FK)}
9. EQUIPMENT = {EQUIPMENT_NUM(PK), EQUIPMENT_NAME, LAB_NUM(FK), COMPANY_ID(FK)}
10. DRUGS = {DRUG_ID(PK), DRUG_STRENGTH, COMPANY_ID(FK)}
11. MEDICAL_COMPANY = {COMPANY_ID(PK), COMPANY_NAME, COMPANY_PHONE}

3. Normalization

Nurse:

- This entity achieves the 1NF because it does not have any repeating groups.
- This also achieves the 2NF since it is implemented with a primary and all the attributes fully depend on it. There are no any partial dependencies.
- This meets the requirements for 3NF because there are no any transitive dependencies.

Patient:

- This entity achieves the 1NF because it does not have any repeating groups.
- This also achieves the 2NF since it is implemented with a primary and all the attributes fully depend on it. There are no any partial dependencies.
- This meets the requirements for 3NF because there are no any transitive dependencies.

Doctor:

- This entity achieves the 1NF because it does not have any repeating groups.
- This also achieves the 2NF since it is implemented with a primary and all the attributes fully depend on it. There are no any partial dependencies.
- This meets the requirements for 3NF because there are no any transitive dependencies.

Appointment table and Appointment Link table

- This entity achieves the 1NF because it does not have any repeating groups.
- This also achieves the 2NF since it is implemented with a primary and all the attributes fully depend on it. There are no any partial dependencies.
- This meets the requirements for 3NF because there are no any transitive dependencies.

Medical Record:

- This achieves the 1NF because it does not have any repeating groups.
- This satisfies the 2NF since all the attributes fully depend on primary key not the part of it.
- There are no transitive dependencies so its already in the 3NF.

Laboratory Test:

- This achieves the 1NF because it does not have any repeating groups.
- This satisfies the 2NF since all the attributes fully depend on primary key not the part of it.
- There are no transitive dependencies so it's already in the 3NF.

Prescription

- This achieves the 1NF because it does not have any repeating groups.
- This satisfies the 2NF since all the attributes fully depend on primary key not the part of it.
- There are no transitive dependencies so it's already in the 3NF.

Equipment

- This achieves the 1NF because it does not have any repeating groups.
- This satisfies the 2NF since all the non-key attributes fully depend on primary key not the part of it.
- There are no transitive dependencies so it's already in the 3NF.

Drugs

- This achieves the 1NF because it does not have any repeating groups.
- This satisfies the 2NF since all the non-key attributes fully depend on primary key not the part of it.
- There are no transitive dependencies so it's already in the 3NF.

Medical Company

- This achieves the 1NF because it does not have any repeating groups.
- This satisfies the 2NF since all the non-key attributes fully depend on primary key not the part of it.
- There are no transitive dependencies so it's already in the 3NF.