

Entities:

- Patient
- Doctor
- Pharmaceutical Company
- Drug
- Pharmacy
- Prescription
- Payment Method
- Payment
- Contract
- Supervisor

Attributes:

- Patient: SSN (primary key), Name, Address, Age
- Doctor: SSN (primary key), Name, Specialty, Years of Experience
- Pharmaceutical Company: Name (primary key), Phone Number
- Drug: Trade Name (primary key), Formula, Price
- Pharmacy: Name (primary key), Address, Phone Number
- Prescription: ID (primary key), Date, Refill Quantity, Dosage, Duration, Doctor ID (foreign key), Patient ID (foreign key), Drug ID (foreign key)
- Payment Method: ID (primary key), Name, Type, Account Number, Expiration Date, Security Code
- Payment: ID (primary key), Amount, Date, Payment Method ID (foreign key), Prescription ID (foreign key)
- Contract: ID (primary key), Start Date, End Date, Text, Pharmaceutical Company Name (foreign key), Pharmacy Name (foreign key), Supervisor ID (foreign key)
- Supervisor: ID (primary key), Name

Relationships:

- A patient has one primary physician (1-to-1)
- A doctor can have one or more patients (1-to-many)
- A pharmacy can sell several drugs and have a price for each (1-to-many)
- A drug can be sold at several pharmacies, and the price could vary from one pharmacy to another (many-to-many)
- A doctor can prescribe one or more drugs for several patients, and a patient could obtain prescriptions from several doctors (many-to-many)
- Each prescription has a date and a quantity associated with it (1-to-1)
- A pharmaceutical company can sell several drugs (1-to-many)
- A drug is sold by a given pharmaceutical company, and the trade name identifies a drug uniquely from among the products of that company (1-to-many)
- Pharmaceutical companies have long-term contracts with pharmacies, and a pharmaceutical company can contract with several pharmacies (many-to-many)
- For each contract, a pharmacy appoints a supervisor, and there must always be a supervisor for each contract (1-to-1)