**DRUG DISPENSING TOOL PROJECT REQUIREMENTS**

i. Patients are identified by SSN, and their names, addresses, and also ages.

ii. Doctors are identified by an SSN, for each doctor, the name, specialty and years

of experience must be recorded.

iii. Each pharmaceutical company is identified by name and has a phone number.

iv. For each drug, the trade name and formula must be reordered. Each drug is sold

by a given pharmaceutical company, and the trade name identifies a drug uniquely

from among the products of that company. If a pharmaceutical company is

deleted, you need not keep track of its products any longer.

v. Each pharmacy has a name, address, and phone number.

vi. Every patient has a primary physician. Every doctor has at least one patient.

vii. Each pharmacy sells several drugs and has a price for each. A drug could be sold

at several pharmacies, and the price could vary from one pharmacy to another.

viii. Doctors prescribe drugs for patients. A doctor could prescribe one or more drugs

for several patients, and a patient could obtain prescriptions from several doctors.

Each prescription has a date and a quantity associated with it. You can assume

that if a doctor prescribes the same drug for the same patient more than once, only

the last such prescription needs to be stored.

ix. Pharmaceutical companies have long-term contracts with pharmacies. A

pharmaceutical company can contract with several pharmaceutical companies.

For each contract, you have to store a start date, and end date, and the text of the

contract.

x. Pharmacies appoint a supervisor for each contract. There must always a supervisor

for each contract

**Added requirements;**

We discussed and added the following additional requirements to the project:

xi. Each patient has a unique identification number generated by the system.

xii. The system should be able to generate reports on drug inventory, prescription history, and patient records.

xiii. The system must maintain a record of all transactions, including prescriptions filled and drugs sold. The record should include the date, the patient, the drug, the quantity, and the price. This information must be accessible to authorized personnel in the pharmacy, and it should be searchable by date, patient, or drug.

**BRIEF EXPLANATION OF THE ERD;**

This ERD contains the following entities with their attributes:

* Patient (Patient id, Name, Address, Age)
* Doctor (Doctor id, Name, Specialty, Years of Experience)
* Pharmaceutical Company (Name, Phone Number, Address)
* Drug (Trade Name, Formula, Pharmaceutical Company)
* Pharmacy (Name, Address, Phone Number)
* Prescription (Date, Quantity, Prescription id, Patient id, Doctor id, Trade name)
* Contract (Start Date, End Date, Contract id)
* Supervisor (Name, Supervisor id, Contract id)

The relationships between the entities are as follows:

* A patient has a primary physician (1 to 1)
* A doctor can have many patients (1 to many)
* A pharmaceutical company can have many drugs (1 to many)
* A drug is sold by one pharmaceutical company (many to 1)
* A pharmacy can sell many drugs (many to many)
* A prescription is written by one doctor for one patient (many to many)
* A contract is between one pharmaceutical company and one pharmacy (1 to 1)
* A supervisor can supervise many contracts (1 to many)

**This ERD captures the requirements and their relationships in a concise and organized manner, making it easy to understand and implement a database system based on these requirements.**

**BRIEF EXPLANATION OF THE CASE DIAGRAM**

In the above diagram, the use cases associated with actors are listed beneath them. The cases help us understand how an actor affects another actor. We have briefly stated them hence easy to understand and interpret.

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The **"Patient"** actor has the following use cases:

* + Registers
  + Update Info
  + View Info
  + Make payments
  + Visit doctor
  + Acquire drugs

The **"Doctor"** actor has the following use cases:

* + Register
  + Update Info
  + Prescribe Drug
  + Monitor patients

The **"Pharmaceutical Company"** actor has the following use cases:

* + Manage Products
  + Manage Contracts
  + Inquire from supervisor

The **"Pharmacy"** actor has the following use cases (extending the "Pharmaceutical Company" actor):

* + Manage Drugs
  + Manage Prices
  + Assign Supervisor
  + Patient Records
  + Doctors Prescriptions

The **"Supervisor"** actor has the following use cases:

* + Manage Contracts
  + Manage Pharmacies
  + Give info to Pharmaceutical company

The **"Contracts"** actor has the following use cases:

• Contain Supervisor Details

• Contain pharmacy Details

• Contain pharmaceutical Details

The **"Payment"** actor has the following use cases:

• Type of Drug

• Amount

• Pharmacy instructions

The **"System Admin"** actor has the following use cases:

* + Manage Users
  + Manage Roles
  + Generate Reports

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