

Assumptions.

A patient can have multiple primary doctors over time.

A doctor can be assigned to at least one or many patients.

A doctor can be to zero patients as well.

A prescription can include multiple drugs and one can be prescribed to multiple patients.

The prescription quantity is associated with each prescribed drug

A prescription should have at least a doctor

A patient can obtain one or many prescriptions and a prescription can be received by at least one patient.

A drug can appear in either one or many prescriptions, but it can also be in none of the prescriptions as well.

A pharmaceutical company can supply one or many drugs and a drug can be supplied by one or many pharmaceutical companies.

The supertype in this is the person table. Because all the attributes that the person has are also available in both the doctor and patient tables to reduce redundancy a supertype is created and assigned to the subtypes called doctor and patient.

5. Justifications

Because a patient might have many doctors and a doctor can be entrusted with many patients, the connection between the patient and the doctor is one to many.

Since the ratio of patients is more than doctors, a doctor will definitely be assigned to one or many patients. On the contrary, a doctor can be assigned to zero patients as well because all the doctors don't necessarily need to prescribe drugs because of their different specialties.

To trace the source of drugs, a pharmaceutical company is an entirely separate entity.

The many-to-many link between a prescription and the drug is because a prescription may contain several drugs.

The specialization/generalization interaction between the patient and the doctor prevents storing similar characteristics twice.

If there is a prescription, there should be at least one doctor assigned to it, because only doctors can write prescriptions and if there is a prescription, it is illegal to have prescribed drugs without a doctor.

If there is a prescription then there should be at least one patient to receive it or else no point in prescribing it.

A drug can be in either one or many prescriptions, but at the same time it is not necessary for a drug to appear in all the prescriptions. The drug is prescribed according to the illness of a patient.

A pharmaceutical company can supply at least one drug because that is their main purpose. If a company isn't supplying drugs, then no point in having a company. A drug can be supplied by many companies as well because of the competition many companies will supply a drug according to the quality and price.

ERD

Ravindran Nirosh | September 8, 2023

