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Database Management Systems 5200

Assignment 1

Assumptions & Notes & Relationships

The primary purpose of a **PHARMACY** is to fill **PRESCRIPTIONS,** so therefore a pharmacy would not exist without prescriptions. However, the pharmacy can technically exits without having prescriptions to fill as long as it can still prescribe them. With this assumption **PHARMACY** and **PRESCRIPTIONS** have a *compositional* relationship.

There are two types of medicine prescription drugs and over the counter medicine. I am assuming we are only needing to keep track of prescription drugs.

PRESCRIPTIONS are *associated* with **MEDICATIONS**, although the medicine is available at the pharmacy doesn't mean it will get prescribed.

Since the **MANUFACTURERS** are significant even without the **MEDICATION** (manufacturers can produce various items, not just pharmaceuticals). I defined this as an *aggregation* relationship.

The **MANUFACTURERS** produce the prescription medication in **BATCHES** which demonstrates a functionality that **MEDICATION** is made in **BATCHES** by **MANUFACTURERS**. Therefore **BATCHES** is a *realization* relationship displaying a behavior of the manufactures there is no multiplicity. Since **MEDICATION** is an essential part of a **PRESCRIPTION,** following the flow prescriptions and are tagged with the medication batch which will be noted on the patient's prescription file.

PATIENT has a *compositional* 1-to-1 relationship with **PRESCRIPTIONS**. They can have multiple prescriptions and other patients can have the exact same prescription however, each patient will receive their own individual prescription. Also, I am assuming since this a prescription centralized UML - all patients will have a prescription.

PRESCRIBER has a *compositional* relationship with **PRESCRIPTIONS**. If there is no need for a prescription there is no need for a prescriber. A **PRESCRIBER** can be either a **DOCTOR** or a **NURSE PRACTITIONER** therefore demonstrates an *inheritance (generalization)* relationship**.** I assumed there are no other qualified medical professionals for this task.

MEDICATION comes in several forms **PILL**, **TABLET** (which can be gel or chewable), **LIQUID** (which be a spray or drops), **TOPICAL** (which is a cream/lotion) which are an *inheritance (generalization)* relationship.

Assignment1

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Pharmacy

+Name: String
+Address: String
+Hours: String
+Employees: Int
+Pharmacists: Int

Prescriptions

-Instructions: Str
-Date Prescribed: Str
-Number of Does: Int
-Warnings: Str
-Refill: Bool

fills ▶   0...*

Medication

+Ingredients: Str
+Side Effects: Str
+Size: Int
+Expiration Date: Str

1...1

Batches

+Manufacturer Date:Str

Manufactor

+Name: Str
+ Location: Str
+ Size: Int
+ Employees: Int

1...*

Patient

-Name:Str
-Patient ID: Int
-Medical History: Str
-Allegeries: Str
-Age: Int
-Social Security Number: Str

has 1-to-1

▲ prescribes

0...*

Prescriber

+Name: String
+License: Bool
+Speciality: Bool
-ID: Int
+Gender: Str
-SSN:Str

1

0...*

Pill

+grams: int

Topical

+oz: int

Tablet

+grams: int
+chewable: Bool
+tablet: Bool

Liquid

+spray: Bool
+drops: Bool
+oz: int

Doctor

+Speciality : String
+Medical School: Str

Nurse Practioner

+Speciality Filed: String