PHARMALINK+ Application Documentation:

Procedure and Processes:

The objective of PHARAMLINK+ is to create a system of connection between the doctor, patient, and pharmacist.

The traditional process puts strain on the patient to locate and submit their prescription themselves through a disjunctive process. If their prescribed medication is not available at a certain location they won't know until they actively search up the information and call the pharmacy. Most pharmacies keep a record of what they dispense to a patient, but this rarely equivocates to the doctor having access to that information. Often a doctor must actively call in to find out if something was dispensed. Another concern is that the writing of the doctor's prescription could be illegible causing mistakes in dispensing medication. If anyone gets the prescription pad of a doctor they can falsely write prescriptions by impersonating said doctor, creating the potential for the harm of a patient. Patients often have to manage their medication intake themselves through a different app.

PharmaLink+ aims to solve these issues by making communication between these three entities seamless and dependable. With PharmaLink+ the process instead becomes:

1) Doctor creates a digital prescription for a patient with a unique code for their prescription attached.
2) The patient is presented with options for pharmacies in their area and their contact information so they can easily ensure that they have the medications in stock. Patient may also be presented with an option to pick up their prescriptions or have them delivered from their desired Pharmacy.
3) Once the Pharmacy is presented with the prescription in person or as an order, a designated pharmacist will mark a prescription as "Filled" and this information will be available to a doctor. The pharmacist will search the patient in the PharmaLink+ network using their code or ID to mark what has been dispensed to them.
4) The patient will have access to a health profile detailing all of their important medical information. According to the doctor's instruction, they will be able to set reminders on the app to notify them of when to take a specific medication.

The aim is to create a dependable system for doctors to create prescriptions, registered pharmacists to dispense them and for patients to easily gain access to prescribed medications or other over-the-counter pharmaceutical products.

Formulation of bidirectional business rules:

- A patient can have one or many prescriptions but a single prescription cannot belong to more than one patient.
- A Doctor can have one or many patients but a patient cannot have more than one doctor, they must have exactly one.
- Every user(patient) must have a health profile for themselves alone, and only one profile can belong to them.
- A pharmacy can have 1 or many products but that product can only belong to one pharmacy at a time.
- A patient can make 1 or many orders but it is not possible for an order to belong to multiple patients, it can only be assigned to 1.
- Every user must have 1 user profile and a profile can only belong to one user.
- Every health profile can have 1 profile enhancement and a profile enhancement can only belong to one profile at a time.
- 1 product can only have 1 purchase enhancement and a purchase enhancement can only belong to one product at a time.
- An order may have multiple products in it and those products can be in multiple orders.

ERD Diagram development:

Initial ERD:

← Database Fundamentals of PHA...

● Many to many relationship between the Orders and the products
● Considering that pharmacists can selectively dispense to the patient what is available at the time, the relationship changed to allow a patient to try a different pharmacist at a different pharmacy. This changes the relationship to many to many as many pharmacists can have access to many prescriptions
● The "Prescriptions" table collects multiple medications associated with the same combination of User_ID and Prescription_ID. This could constitute a multivalued attribute and risk redundancy.

Solutions:

● We created appropriate bridge identities for all many-to-many relationships(order-processing created).
● Ensure all entries to the prescriptions table are unique

Final ERD: