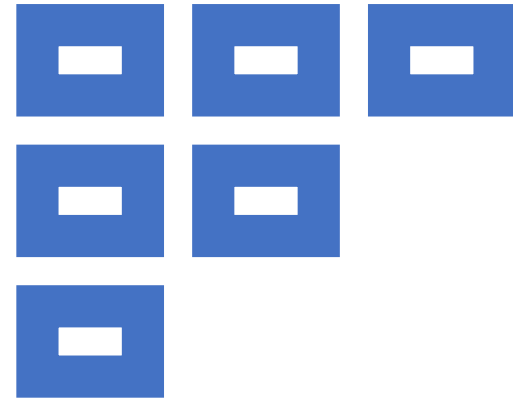
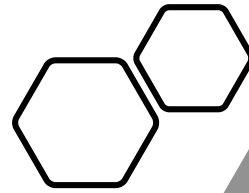


Healthy Otters: Final Project

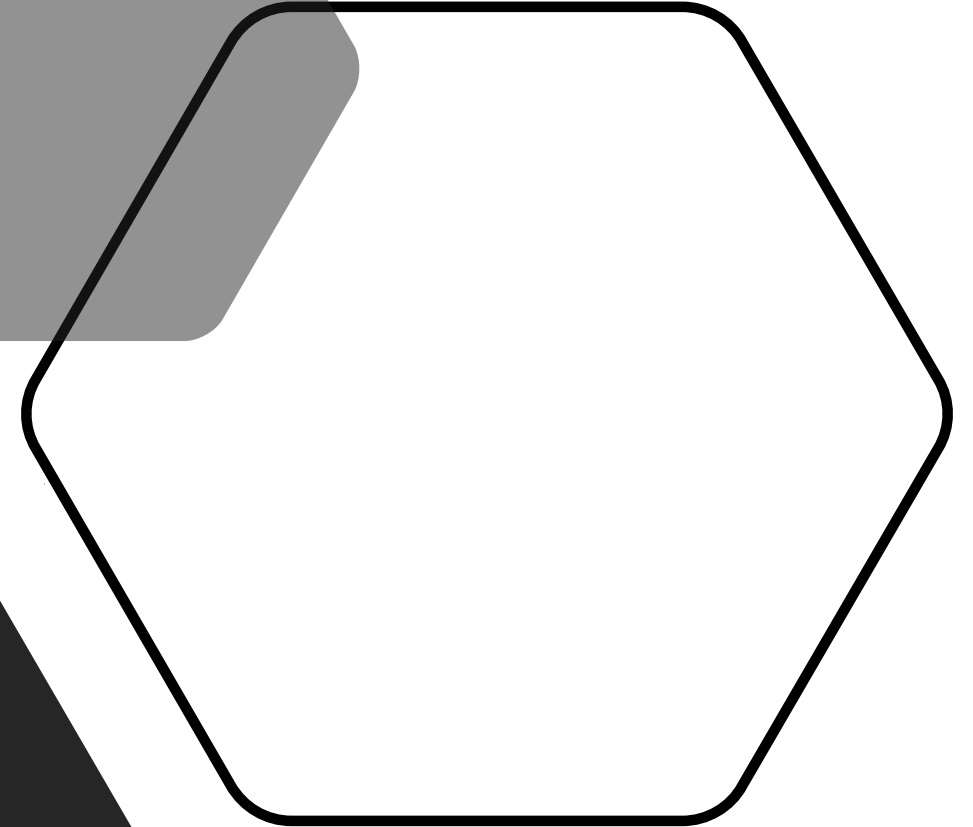
By Dan Sedano, Lindsey Reynolds,
Max Halbert, and Ricardo Barbosa



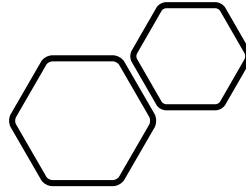
ER Diagram Description



- The ER diagram maps out the medical database and indicates the relationships between each table. All relationships, primary and foreign keys, and indices are represented on the ER diagram.
- We have placed indices on the patient **last_name** and **dob** (date of birth) columns, the doctor's **last_name** column and the pharmacy **name** column. We chose to do this because these columns will be accessed through searches often, and their tables will not be updated frequently.



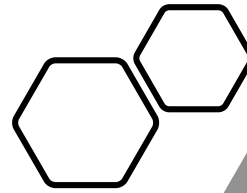
Goals



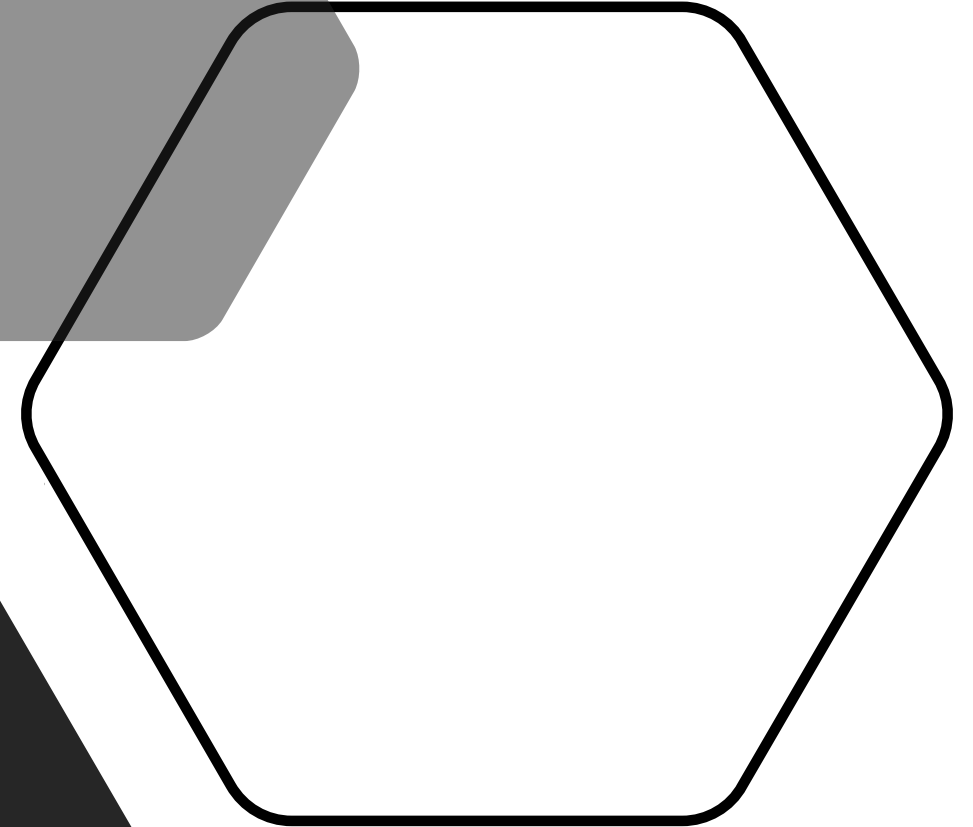
- Make an intuitive website to communicate with our database.
- To make the database fast and efficient, while providing the necessary information.
- To create a database that links patients to doctors, doctors to prescriptions, prescriptions to their pharmaceutical companies, and pharmaceutical companies to contracts with pharmacies that sell their drug at specific prices.
- To configure cardinalities based on foreign and primary keys.



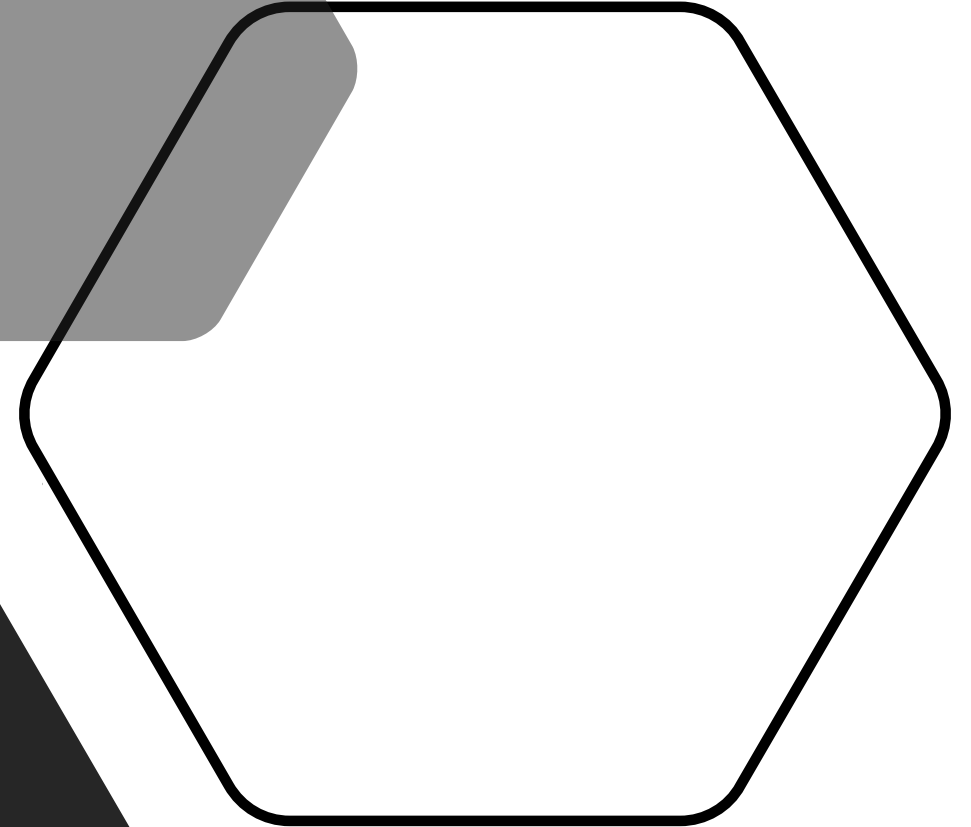
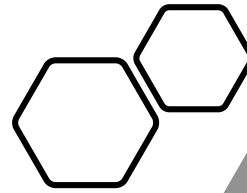
Assumptions



- We made the assumption that the **Quantity of Doses** refers to the number of pills prescribed by a doctor.
- The doctor is assumed to know the **drug_id** for the drug they are writing a prescription for.
- The report the pharmacy manager runs to see the quantity of drugs that have been used *in the last month* is generated based on the assumption that the report should be based on the last 30 days.
- We added a column to the prescription table indicating whether or not the prescription is currently filled. If the prescription is filled and the patient tries to fill it again, the system will not allow it.
- We added another column to the prescription table that keeps track of how many times a prescription has been filled. If the prescription does not have any more refills left, the system will not allow the patient to fill it.

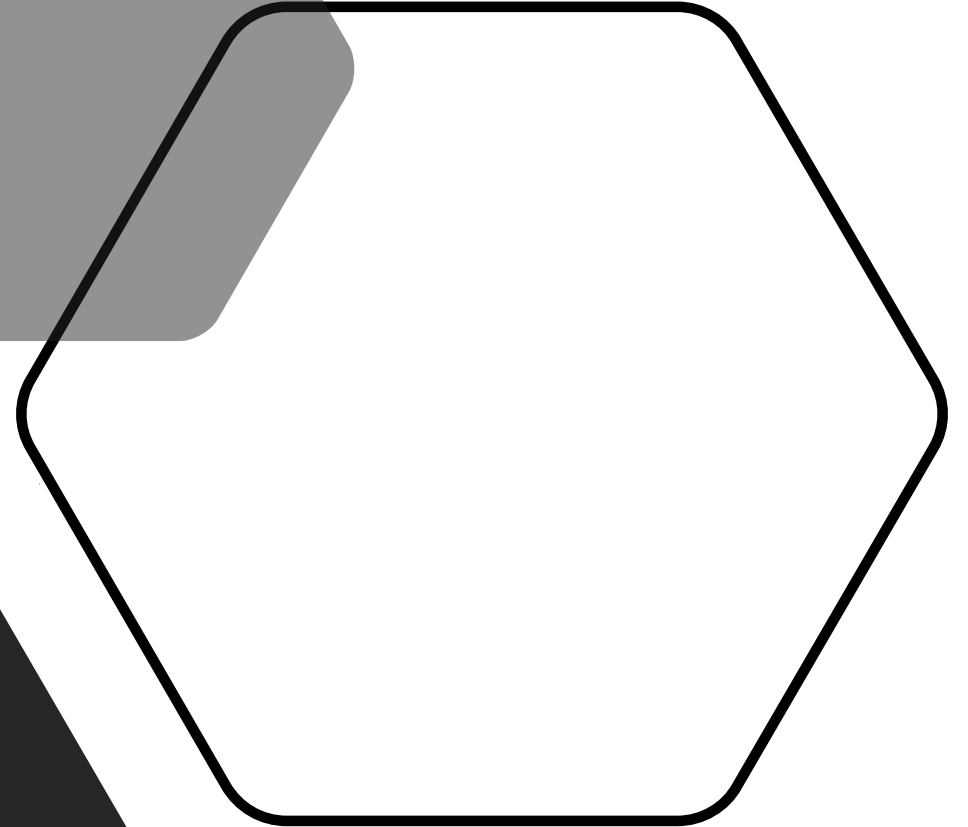
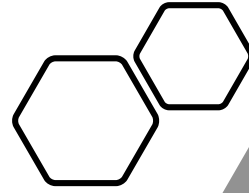


Resolved Findings



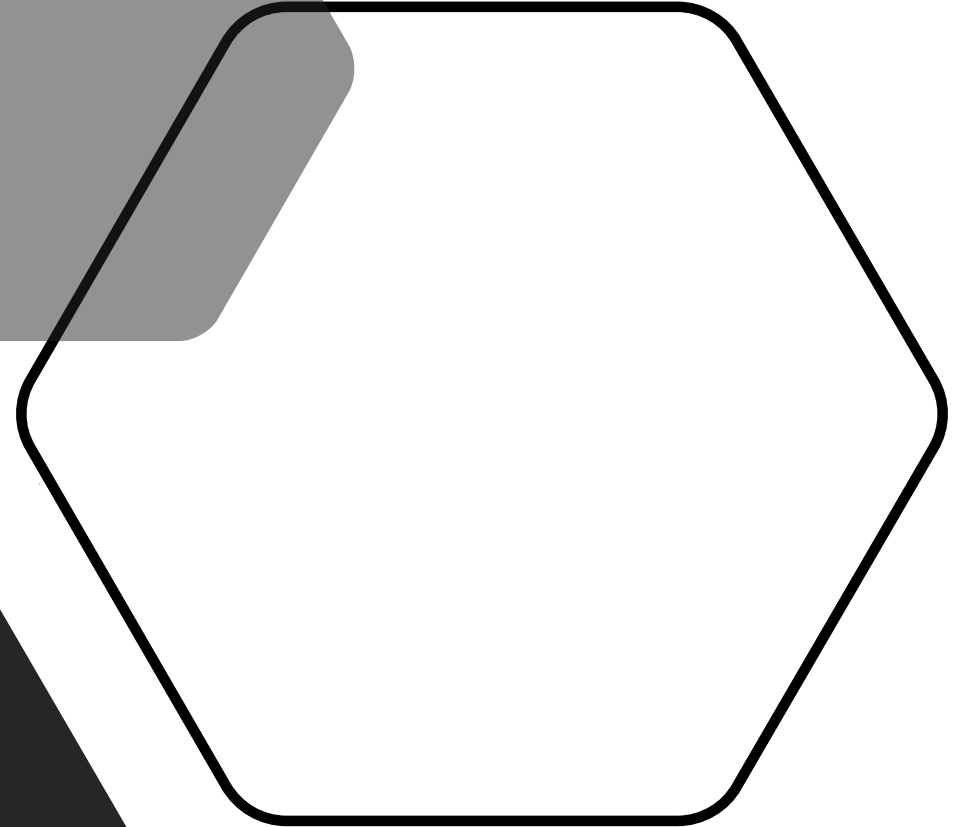
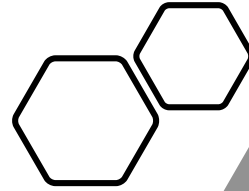
- In order to normalize our tables, we decided to break down the patient and doctor **name** column into **first_name** and **last_name** columns. We also decided to break down the patient and pharmacy **address** columns into 5 single-value columns.
- Discovered the relationships between tables, deciphering whether each should be a one-to-one, one-to-many or many-to-many relationship. This included a one-to-many relationship from drug to prescription since we concluded that one drug can have many prescriptions for many patients.
- We decided to use the same naming conventions across all tables, as ambiguity would be eliminated when adding the table name to our queries e.g., **patient.first_name** and **doctor.first_name**.

Resolved Findings Continued



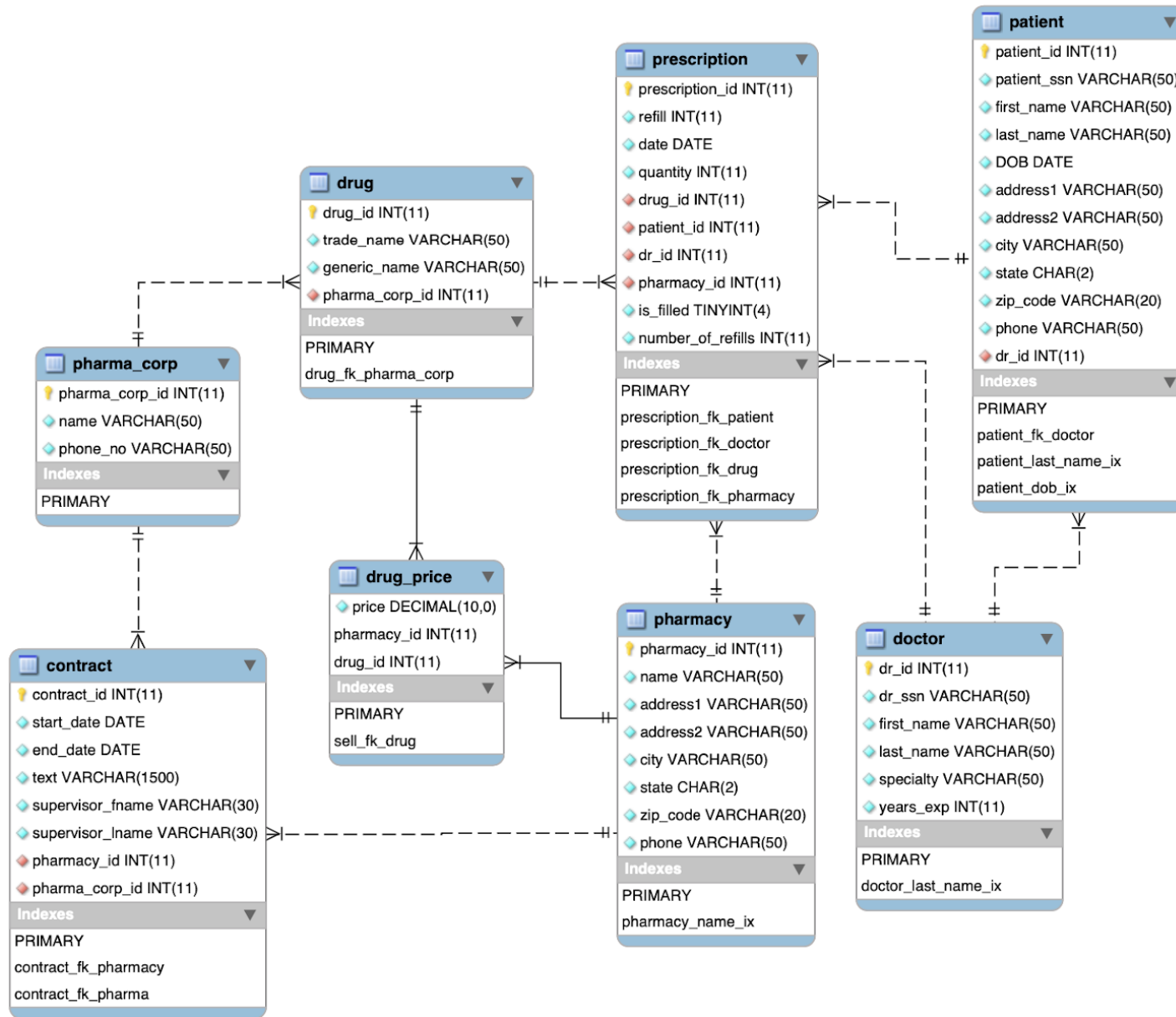
- Initially, we were not certain about how to handle the age column. We did not think keeping the age column would be viable going forward as the larger our database grows, we would need to constantly update that column which would be a waste of resources. For that reason, we decided to convert the age column to the Date of Birth (DOB) column. This way we can derive the age for any calculations that are needed.

Unresolved Findings (Design Issues)

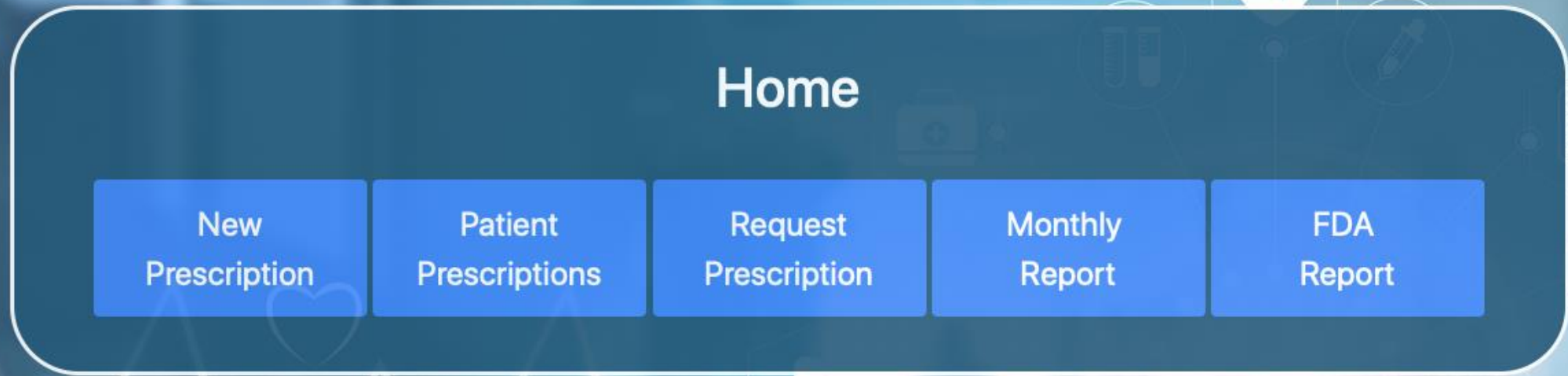


- Should we create a separate table for the supervisor in the contract table because the person supervising the contract would most likely need to have a name and contact information associated in case issues with the contract need to be resolved?

ER Diagram



Screenshots



Home Page

New Prescription

- A doctor writes a prescription for a patient for a drug and a quantity and how many refills (if any) are allowed

Rx #	Date	Patient	Drug Name	Quantity	Refills Allowed
628	2020-02-27	Beckie, Itscovitz	Metoprolol Tartrate	1	1

[Return Home](#)

New Prescription

Doctor First Name

Doctor Last Name

Patient First Name

Patient Last Name

Drug ID

Number of Refills

Dose Quantity

Pharmacy Name

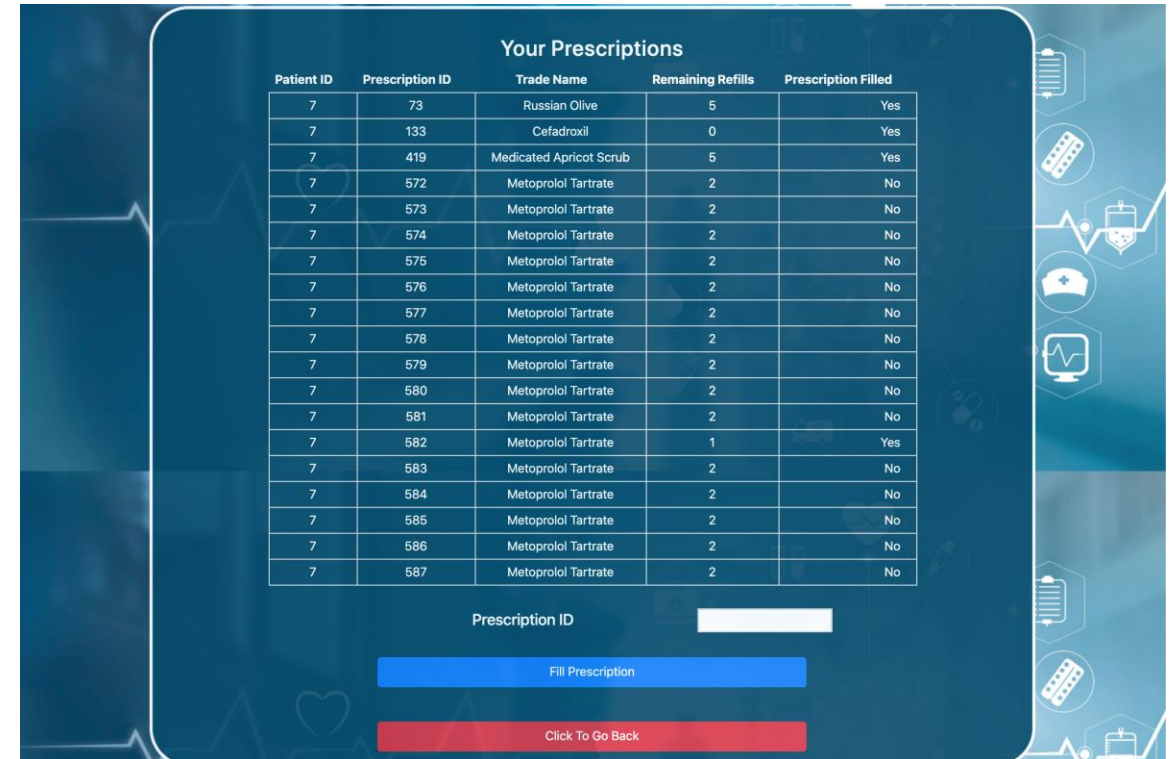
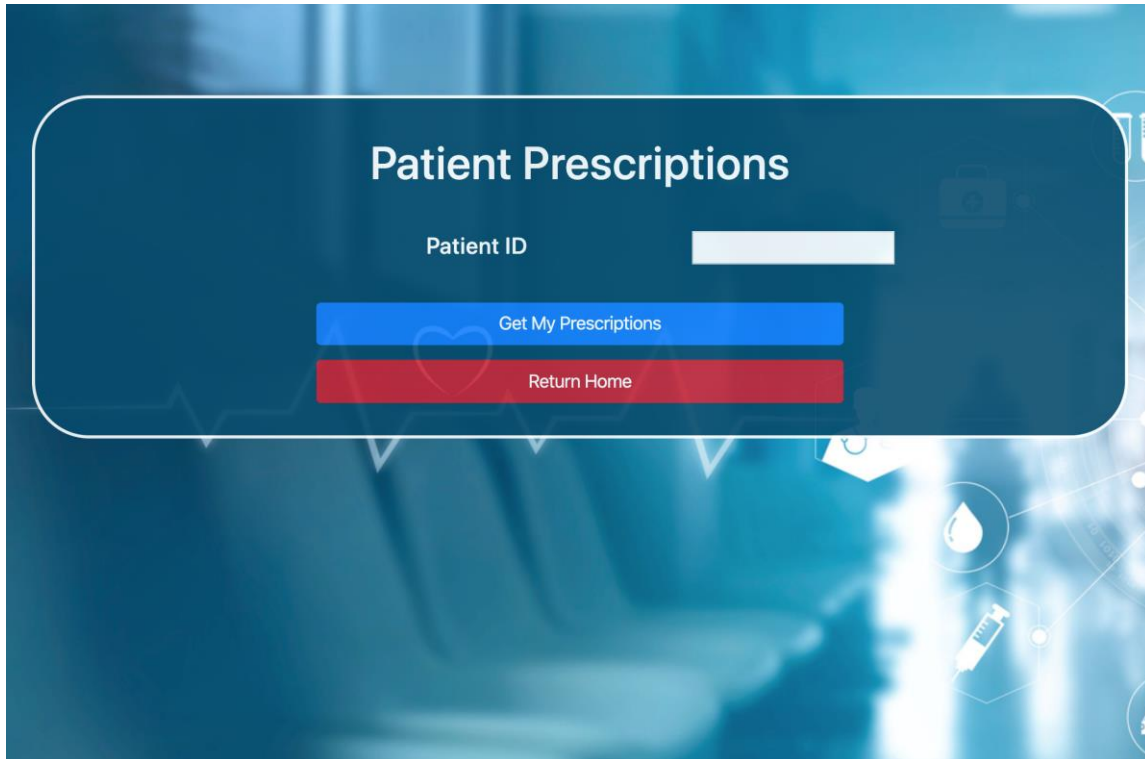
Pharmacy ID

[Fill Rx](#)

[Return Home](#)

Patient Prescriptions

A patient displays prescriptions for themselves and requests a refill for a prescription.



Request Prescription

- A patient requests that a pharmacy fill a prescription. The program should inform the patient of the estimated cost of the prescription and ask the patient if they want to continue with the order. If the patient continues, then the prescription is sent to a pharmacist at a pharmacy. If the user decides not to continue then the prescription is not updated.



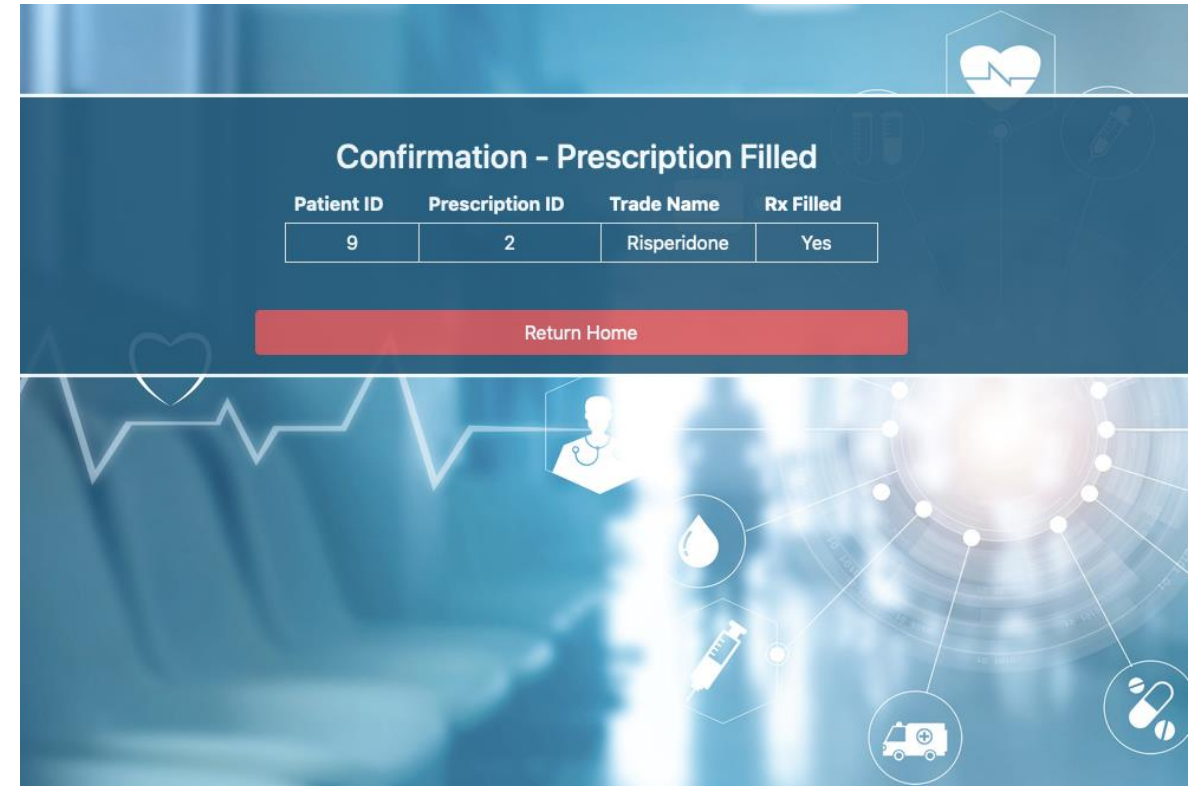
Patient Rx Refill

Prescription ID

Patient ID

[Find Prescription](#)

The form is titled "Patient Rx Refill" and features two input fields for "Prescription ID" and "Patient ID". A blue button labeled "Find Prescription" is positioned below the input fields. The background is a dark blue gradient with medical icons like a heart, a stethoscope, and a pill.



Confirmation - Prescription Filled

Patient ID	Prescription ID	Trade Name	Rx Filled
9	2	Risperidone	Yes

[Return Home](#)

The confirmation screen displays a table with the following data:

Patient ID	Prescription ID	Trade Name	Rx Filled
9	2	Risperidone	Yes

Below the table is a red button labeled "Return Home". The background features a blue gradient with medical icons such as a heart, a stethoscope, a pill, and an ambulance.

Monthly Report

Quantity of drugs that have been used in the last month by pharmacy. Report contains the name of the drug and the quantity used.

Pharmacy: Rite Aid

Drug Name	Quantity Sold
Famotidine	35
Leader Cold Head Congestion	10
GENOTROPIN	31
PhysiciansCare Allergy	73
Chlorpromazine Hydrochloride	5
Risperidone	98
Night Time Cherry	80
SOLU-MEDROL	63
FLEBEAUTE COLLAGENIC MAKE UP BASE	83

New Report

Return Home

Monthly Sales Report

Pharmacy Name

Run Report

Return Home

FDA Report

Run Report

Return Home

First Name	Last Name	Drug Name (Generic)	Quantity Prescribed
Brunhilde	Boughey	Acetaminophen	371
Brunhilde	Boughey	Chlorpromazine Hydrochloride	42
Brunhilde	Boughey	Diphenhydramine HCl	74
Brunhilde	Boughey	Echinacea Angustifolia	35
Brunhilde	Boughey	FAMOTIDINE	24
Brunhilde	Boughey	GENTAMICIN SULFATE	42
Brunhilde	Boughey	Metoprolol Tartrate	14
Brunhilde	Boughey	Naproxen Sodium	31
Brunhilde	Boughey	OCTINOXATE	64
Brunhilde	Boughey	Risperidone	58
Brunhilde	Boughey	Russian Olive	98
Brunhilde	Boughey	Salicylic acid	4
Brunhilde	Boughey	somatropin	68
Brunhilde	Boughey	TITANIUM DIOXIDE	90
Celestine	Pott	Acetaminophen	268
Celestine	Pott	Cefadroxil	54
Celestine	Pott	Chlorpromazine Hydrochloride	40
Celestine	Pott	Diphenhydramine HCl	24
Celestine	Pott	FAMOTIDINE	61
Celestine	Pott	GENTAMICIN SULFATE	52
Celestine	Pott	methylprednisolone sodium succinate	61
Celestine	Pott	Metoprolol Tartrate	91
Celestine	Pott	Naproxen Sodium	44

FDA Report

Quantity of drugs that each doctor has prescribed in the last 6 months