Use Cases and Fields

Account Signup Use Case

1. The program will ask the user to create an account when it first open
2. The user will specific either a pharmacist account, a technician account, or none of these account
3. The program will ask for the location of the pharmacy verification system file
4. The program will ask if it's ok to pull data from the pharmacy verification system

The database would need to store steps #1 and #2

Field	What it Stores	Why it's needed
PharmacyAccount	The pharmacy name	One pharmacy should ideally only have one account to minimize redundancy
AccountUser	This is the account user's login	Multiple account user can exist under one pharmacy. This can help with delegating task later on or assigning who can use this program
AccountPassword	AccountUser's password	To provide security and protect that data from unauthorized access

Automatic Prescription Data Extraction Use Case

1. When a prescription is billed
2. The program detects a prescription was billed, it will automatically pull only the necessary data from the pharmacy verification system

Once a prescription is billed, the program will store relevant information regarding the prescription. Patient specific information is added to make the program more robust and have a better predictive model. More drug information is also added to aid in making the program more precise. Also total drug inventory is added as a field, because it's more appropriate that when a prescription is billed, it would trigger an inventory change.

Field	What it Stores	Why it's needed
BilledDate	The date that the prescription was billed	Keeps tracks of what day the medication was billed on
RxNumber	The individual prescription number	Each prescription/drug is associated with each individual number
PatientName	Name of the Patient that the prescription is about	To individualize the data and make the data more robust
PatienDoB	The day of birth of the patient	Patient can sometimes have the same name, this is another way to distinguish them

Field	What it Stores	Why it's needed
DrugName	Name of the processed drug	This is necessary for which drug needs to purchase inventory and/or the data is about
DrugStrength	The Strength of the Drug	Same drug can have different strength
DrugForm	The form of the Drug	Some drug can have the same Name, strength, but different form (e.g.solution vs. suspension)
DrugQtyBilled	The quantity of the billed drug	To know how much drug is outgoing
TotDrugInventory	Indicates the total amount of drug in the pharmacy	Keeps track of how much drug is current available to work with
BasicInsuranceInfo	The insurance code that the drug was billed under	To set trends and obey certain pharmacy benefit manager's rules
Pharmacist_signed	The signature or identification of which pharmacist saw the prescription	To help with metrics and a pharmacist should view every prescription for accuracy and correctness

Automatic Inventory Data Extraction Use Case

1. Whenever a medication is added/deleted to the main pharmacy verification system as incoming inventory or outgoing inventory and the medication already exist inside the database

2. The program detects a change in inventory, and add or subtracted from its inventory as well
    i. Subtraction would occur if there was an expired medication, or something needed to be return back to the wholesaler.

The program should only concern itself with medication that has billed before and there exist an inventory record. It would be wasteful to import all inventory data from the pharmacy verification system, since there will be medications that have not been billed in a long time. Thus, when new medication is added into the pharmacy verification system as part of incoming inventory and that medication has been billed before, then the inventory level in the database should be updated. When a medication that does not yet exist in the database is billed, its inventory will reflect the inventory in the verification system thru inventory data extraction use case. DrugStrength and DrugForm are added to make the program more precise.

The program will be adding to the inventory most of the time, but there will be times when a reversal will be needed. Instances such as a return to the wholesaler, because a patient decides not to pick up the medication all, a doctor decides to cancel the prescription after billing, or a medication has expired will need to be removed from the pharmacy verification system's inventory as well as the database inventory.

Field	What it Stores	Why it's needed
Date	Date of the addition / subtraction occur	This will be useful for setting future trends
DrugName	Name of the processed drug	This is necessary for which drug needs to purchase inventory and/or the data is about
DrugStrength	The Strength of the Drug	Same drug can have different strength
DrugForm	The form of the Drug	Some drug can have the same Name, strength, but different form (e.g.solution vs. suspension)
QuantityChange	Quantity added or deleted	To help better understand and obtain the full picture
TotDrugInventory	Indicates the total amount of drug in the pharmacy	Keeps track of how much drug is current available to work with

Automatic Medication Pick Up Use Case

1. Whenever a medication is marked as picked up in the pharmacy verification system
2. The program detects a picked up has been made and will deduct that quantity from the drug inventor and the quantity dispense in the database

When a medication is picked up (or sold out of the pharmacy), it is the final designation that a medication is truly out of the inventory. The DrugQtyPendingComp represents the total DrugQtyBilled for a drug, but have not yet being picked up. When a medication is picked up, this amount would decrease by the picked up quantity. At the same time, the stock inventory inside the database should decrease by the same picked up amount.

I added BilledDate and Rxnumber, because with these 2 data, I can derive all other information (ie. PatientName,DrugName…). I took away and took away DrugName since it can be derived, the data would be redundant, and data redundant increase risks of errors. Even though DrugQtyPickedUP should equal to DrugQtyBilled, sometimes only partial qty is picked up either because patient preference or the inventory is not enough for full fill.

Field	What it Stores	Why it's needed
DatePickedUp	Date of medication picked up	To help set future trends
BilledDate	The date that the prescription was billed	Keeps tracks of what day the medication was billed on
RxNumber	The individual prescription number	Each prescription/drug is associated with each individual number
DrugQtyPickedUP	Quantity of the drug picked up	To know how much of the medication is leaving the pharmacy
DrugQtyPendingComp	The quantity of billed drug, but not yet picked up	To know how much drug is needed for outgoing

Field	What it Stores	Why it's needed
TotDrugInventory	Indicates the total amount of drug in the pharmacy	Keeps track of how much drug is current available to work with

Automatic Drug Fill Par Level Use Case

1. User defines the percentage of billed medication should be filled
2. User defines the percentage of billed medication should be saved as reserve
3. User defines over how many days the rest of the unfilled billed medication should be filled
4. The program will determines how much of the current drug inventory level can be used to fill the billed drugs today
5. The program will determines how much of the current inventory should be saved as reserves
6. The program determines how much of drug will be filled in the future
7. The program determines how much of the drug needs to be purchase to sustain the target fill rate for the future

The user would set a pre-defined what percentage of the billed amount would be filled and what amount would be set as reserve, the rest will be set as a rotating filling.

For Example, if 70% of quantity billed is used as filled, 10% serves as the reserve stock, then 20% will be served as a rotating filling, with a filled time span of 5 days. This means that on that day, 70% of the claims processing that DrugName will be filled and ready for pick up, while 10% of the quantity billed is not filled but can be filled, and 20% is not filled and will need to be ordered. The TotDrugInventory would be the sum of the 70% filled and the 10% not filled (ReserveQty). The 20% rotating inventory would need to be filled and ordered over 5 days, which translates to 4% of DrugQtyBilled needs to be ordered and filled each day.

I added 'BilledDate' and 'RxNumber', because just with these 2 piece of data a lot of important information can be derived from. The program will group all BilledDate/RxNumber with the same DrugName. A Is_RX_Filled can show which order is filled and ready, and which ones needs to be filled.

Field	What it Stores	Why it's needed
BilledDate	The date that the prescription was billed	Keeps tracks of what day the medication was billed on
RxNumber	The individual prescription number	Each prescription/drug is associated with each individual number
PatientNameFilled	Name of the patient's whose Rx is filled	For easy tracking as an identifier
PatientToBeFilled	DoB of that patient's Rx that is filled	To distinguish between multiple same name patient
DrugName	Name of the processed drug	To group and know which medication to purchase
DrugQtyBilled	The quantity of the billed drug	To know how much drug is outgoing
DrugQtyFilled	The quantity of the billed drug that's already filled	These are ready for pick up

Field	What it Stores	Why it's needed
Is_RX_Filled	A boolean of filled vs. not filled	To keep track is the prescription is filled or not filled
ReserveQty	Amount of medication that will not be filled, but serves as a reserve	The reserve is for people that actually shows up but not filled by the program
TotDrugInventory	Indicates the total amount of drug in the pharmacy	Keeps track of how much drug is current available to work with
AmtToBeFilledToday	Amount of drug to be filled today	To keep the amount of drug filled for today
RxNumberToBeFilled	Each individual Rx that needs filling	To individualize how many and which Rx still needs to be filled
PatientNameToBeFilled	Name of Rx that needs filling	For easy tracking as an identifier
AmtToBeFilledFuture	Amount of drug to be filled in the future	The rest of the amount of drug billed is distributed across the future
TodayOrderAmt	The quantity of drug that needs to be purchased today	To fully fill the amount of billed drug

Automatic Drug Price Tracking

1. Whenever a drug price is updated, the program will automatically record the new price, the old price, and the date that it was updated.

This will be useful to trend how prices of a particular change over time and other metrics to determine how our cashflow is being affected by prices.

Field	What it Stores	Why it's needed
Price_Change_ID	The ID of a particular price change	This will serve as the primary key for the table
NDC	NDC of the drug that the price is changed	It will tells us which particular drug's price is being change
OldPrice	The previous old price	To see how the price is changed from
NewPrice	The new price	To see how the price is changed into
Change_Date	The date that the price change happen	To trend how often a price change happens