CS174A Final Project Report

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Objective: Use entity and relation model to design a database of a Health Message network between patients, author (doctors), and administrator. Then use Java to make a program and implement the funtionality of this database

Main Concepts:

Entity Relation Model, Queryand Database System, Object-oriented Porgramming, Model-View-Controller

Tools and Language:

Java, mySQL, Eclipse, Github, Google Docs

Procedure:

1. Design the entity-relation model of the database and draw the schema.
2. Write queries of creating the tables corresponds to our schema in sql files;
3. Connect the the local instance of mySQL to Java using JDBC;
4. Implement reading data from the source database and inserting data into target database;
5. Design a user interface, implement it with model-view-controller;
6. Connect the user interface with database;
7. Implement the funtionalities of the datadase system we are designing.

Challenges:

1. Foreign key contraints fail: We reordered the queries, such that all the tables without foreign keys are inserted before the tables that have foreign keys.
2. Cannot add row, wrong syntax: We found that the java function executeUpdate() cannot execute several queries. Hence, we stored that queries of each class (or table) in an arrayList<String>. If we want to run the queries of a class, we loops through the arrayList.
3. Data format problem: we changed a lot of attributes in sql file to CHAR(50), a modification that makes no difference on UI. Also, we added single quotes on the two sides of each string value to make it a right string in query commands. For example, we read “abc” from source database, when we are inserting the data to target database, the query is “INSERT INTO atable() VALUE(‘abc’)”. If there are single quotes inside the string, for example, “abc’s cd”, we added a slash on the left side of each quote, like “ … VALUE ‘abc\’s cd’)”.

Task Division:

Jiapei Yao:

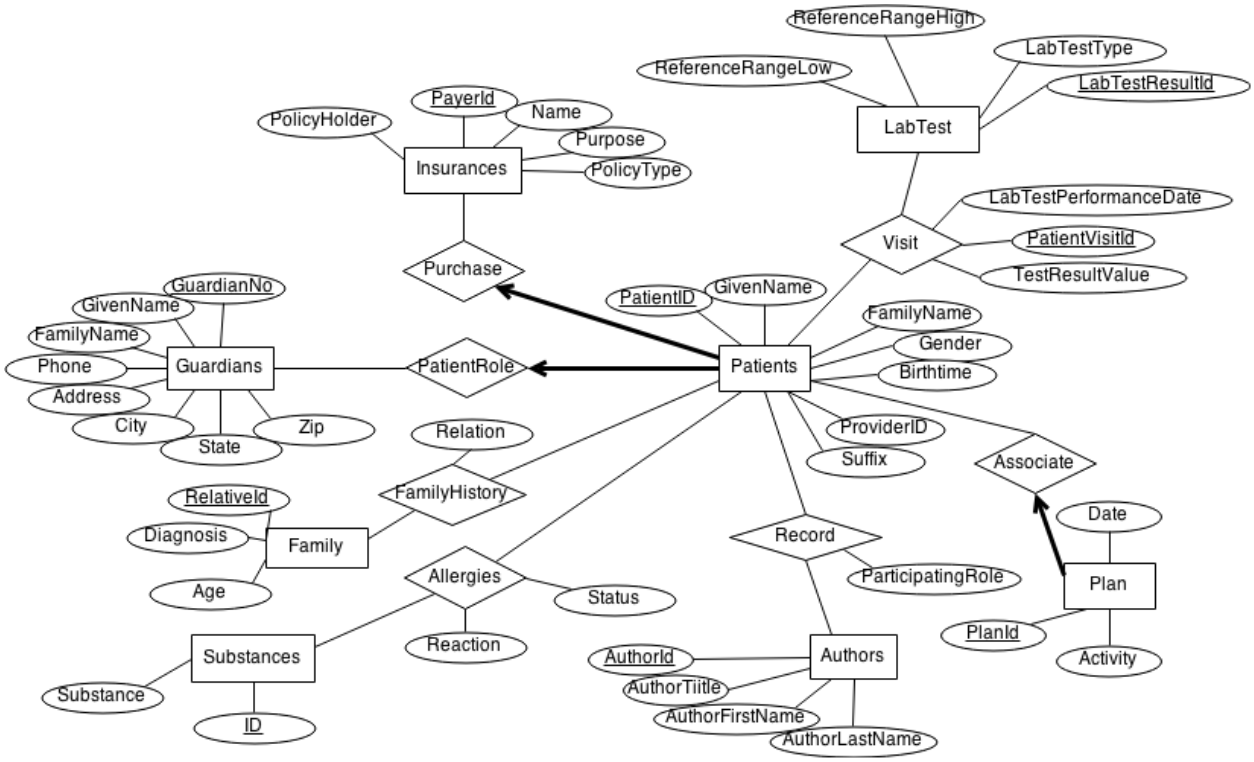
1. Implement entity and relation classes.
2. Implement database exchanger.

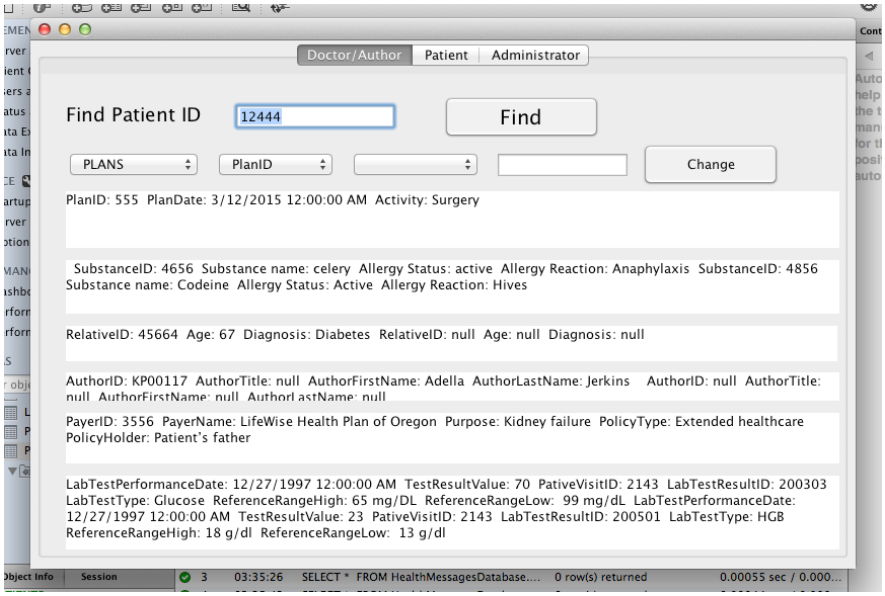
3. Implement functions of three kinds of SQL command(Selection, Insertion and Update).

Xinglun Xu:

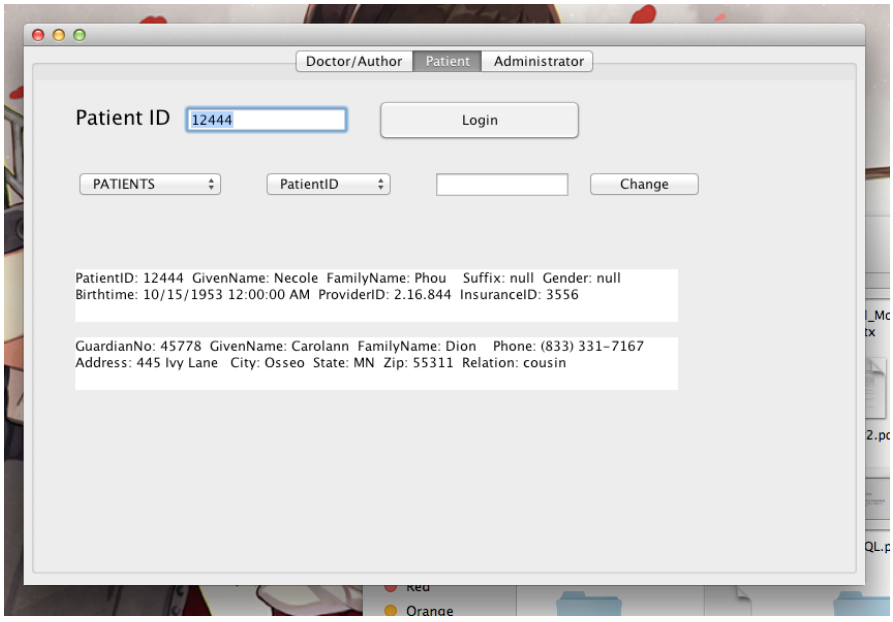
1. Design User Interface for the database application.
2. Implement Controller between the User Interface and database.

Schema:

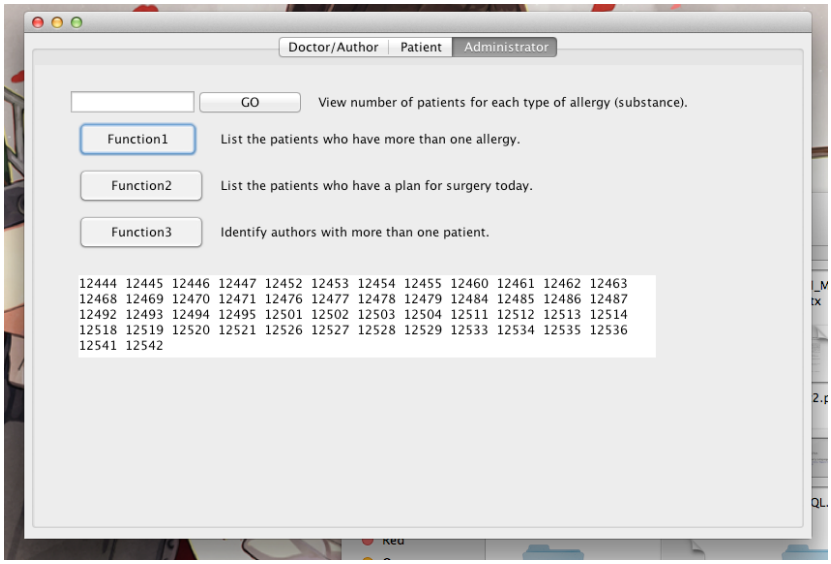




This interface is for the Doctor or Author user. They can view all the information relative to the Patient ID they give. They can also change the attribute of the Plan and Substance table using the JComboBox above.

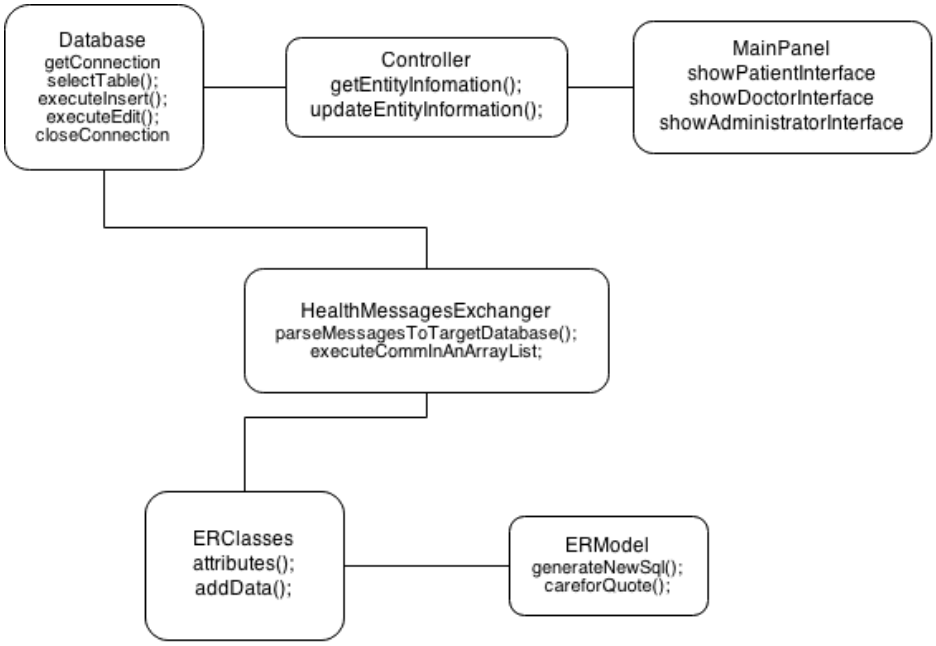


This interface is for the Patient user. They can view the information about themselves and their guardians. They can change the attribute of those table using the JComboBox above.



This interface carry out the four main query of the adminstrator.

Class Diagram:



Conclusion:

The program can read data from multiple source database from local instance of mySQL and output to target database. The view we made has three tabs which control the models including patient, author, and administrator model. Three models have different priorities. The view and controller can read datas from the target database and edit them.