iv. Description of the implementation, (i.e. description of the tables, attributes, constraints, classes etc.). For Java, it is recommended to use Javadoc utility to generate documentation.

For our implementation, we created 8 different tables: Patient, Visit, Country, Zip, State, Work status, Occupation, and Demographics. For each table, we converted them into third normal form. The patients have name, Date of Birth, Gender, Phone, Email, Street Address, City, State, Zip, Country, Photo, Social Security Number, and Insurance. There were three constraints, of which all were foreign keys that provided the patients state, zip, and country. The demographics table had THC #, name, date, occupation, work status, educational degree, tinnitus onset, tinnitus etiology, hyperacusis onset, hyperacusis etiology, and additional comments. The Visit table had the Visit ID as the UID, visit date, THC, name, visit #, problems, category of problem, protocol, instrument used for treatment, rem, follow up info, additional comments, and the next visit date. The Demographics table has the information of the patient and any relevant medical history (hyperacusis/tinnitus). It also has foreign key relations to work status and occupation of the patient. The remaining tables are used for references. The country table had only its name and is a reference table. The zip had only its Zip code and is used as a reference table as well. The state table only has the state name and is a reference table. The work status table has an identifier of Yes or No, which identifies them as employed or not. The Occupation table has the occupation title.

We created 9 different classes: TableViewer, Menu, SQLEntry, SQLEntryVisit, SQLHelper, SQLPatientLoader, SQLTableBuilder, SQLUpdater, and SQLVisitLoader. The TableViewer class lists all the tables in the database. The menu class contains all of our interfaces and functions for editing, adding, or deleting data using the functions from the other classes. The SQLEntry class adds entries to our database. The SQLEntryVisit class creates SQL statements that edits entries. The SQLHelper class provides exception handling for incorrect or invalid SQL statements/requests. The SQLPatientLoader class adds patients and their information into the database. The SQLTableBuilder class creates all the tables in our database. The SQLUpdater class updates rows through calls to the database. The SQLVisitLoader gets the visits from the database.