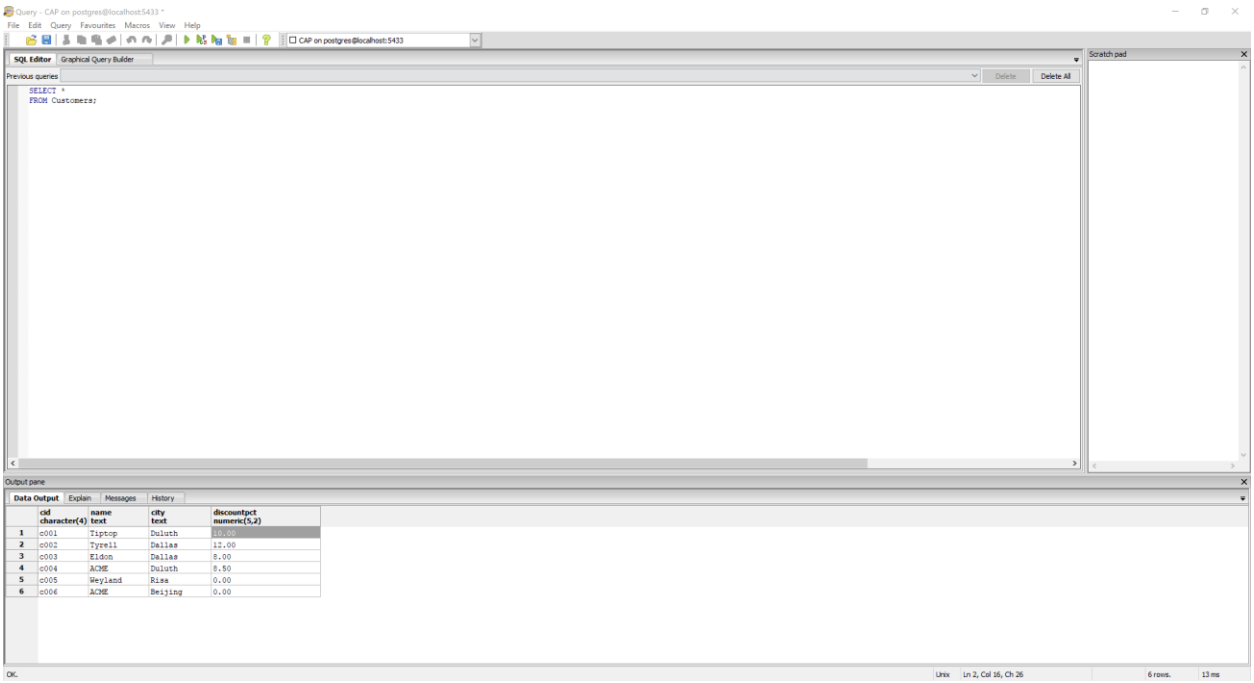
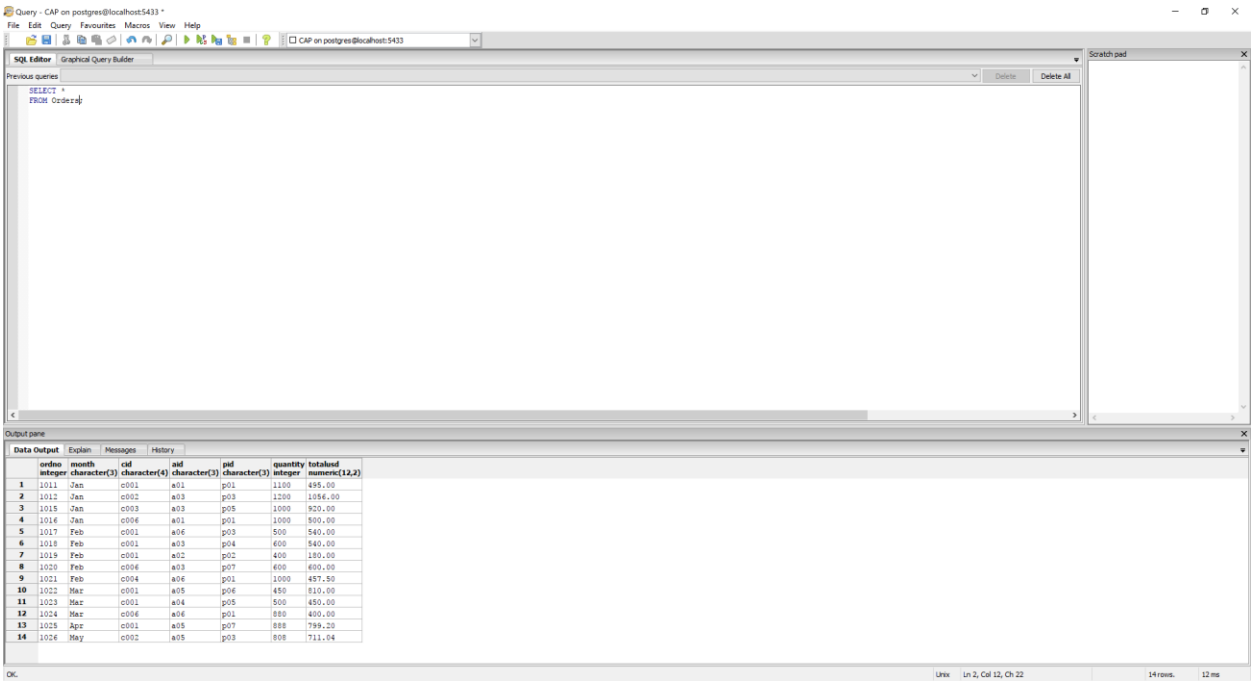
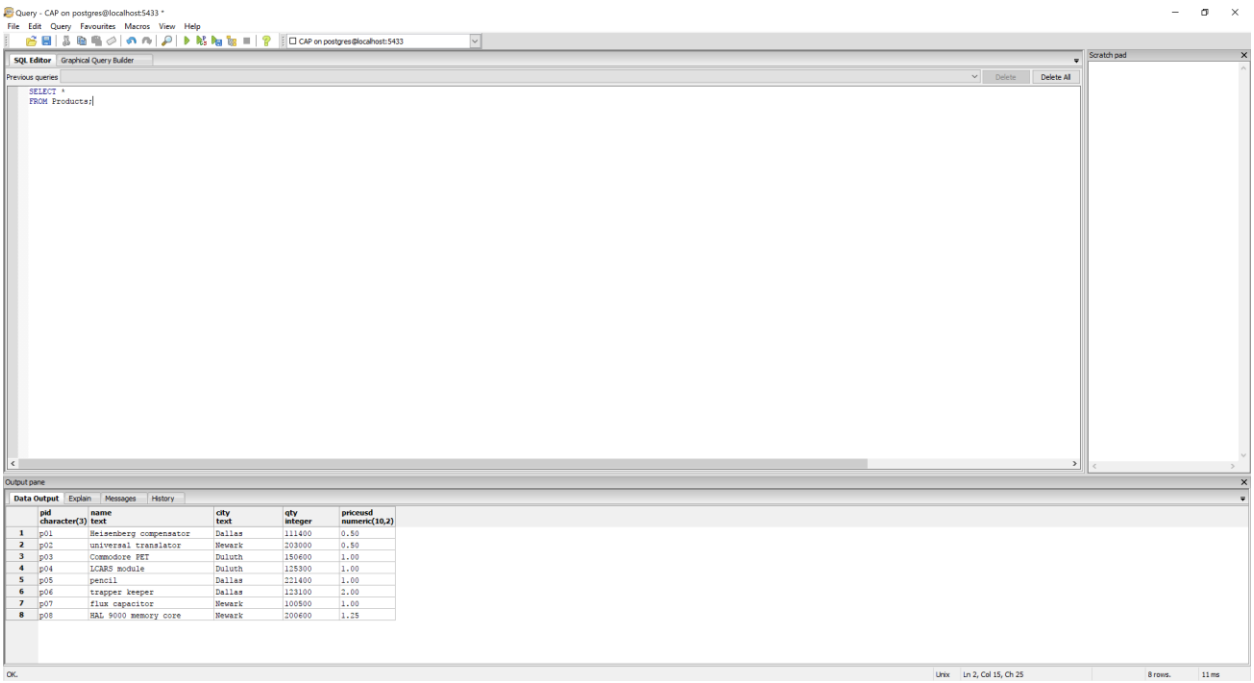
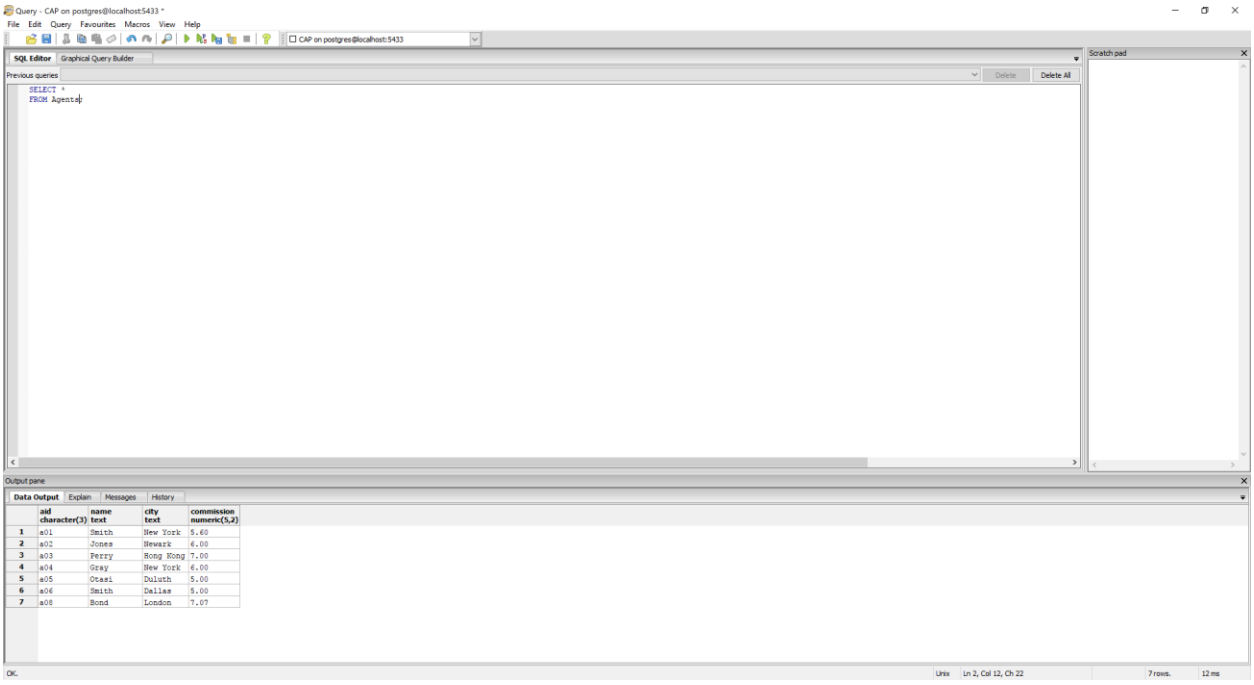
Trevor Pirone 9/9/17

Professor Labouseur Lab #2









2. A primary key is a key that is unique to a record in the database. A primary key can be a unique identifier such as an id number and a relational database is only allowed to have one primary key. This means that there are no such things as relational databases with multiple primary keys. A candidate key is any column or columns that can be used as unique keys.

Candidate keys can identify records within a relational database without having to refer to any other type of data. Candidate keys exist in tables and there can be multiple candidate keys within a table. A superkey is used to uniquely identify the rows within the tables of a relational database.

3. A data type can be defined as the kind of value that a certain column in a table holds. There are many kinds of data types such as integer type, string type, etc. An example to visualize data types in action would be a table of books. The book table would have the following columns: Book ID, Book Name, Author, Price, and Quantity. Integers and strings can be null data types. In this situation, however, Book ID is an integer that will never be null since it will not be the primary key, but the number will be used to identify what that book is. Price and quantity will also be integers and those integer values will not be null in this situation because every item has some price even if it is 0 and some kind of quantity. Strings would represent book name and author and author could be null if the book written has no official author (i.e. The Bible).

4. The first normal form means that all fields rely on the primary key and there are no repeating groups within the table. In addition, the first normal form states that every component of every tuple is an atomic value and can only have a single value for each attribute. One real world example is an address book. If a person has more than one telephone number, for a relational database to comply with 1NF, it would be necessary to split each number into a separate entity or create two tables for customers and customer's phone numbers. The "access by content only" rule describes that a user cannot find content within a relational database through a column id or a row id. A user must type through the commands to find the content and information they are looking for. The "all rows must be unique" rule states that a table in a relational database cannot

contain multiple rows because then it is not unique. This means that the table would not be qualified as a relation.