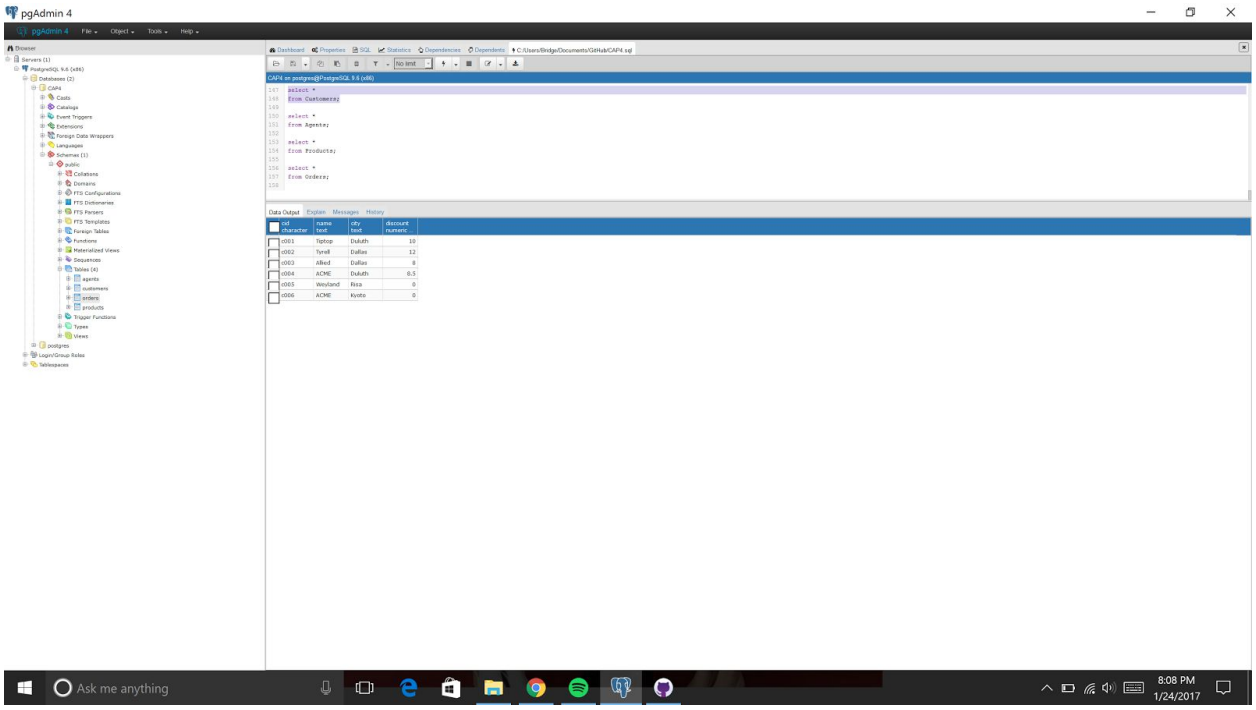
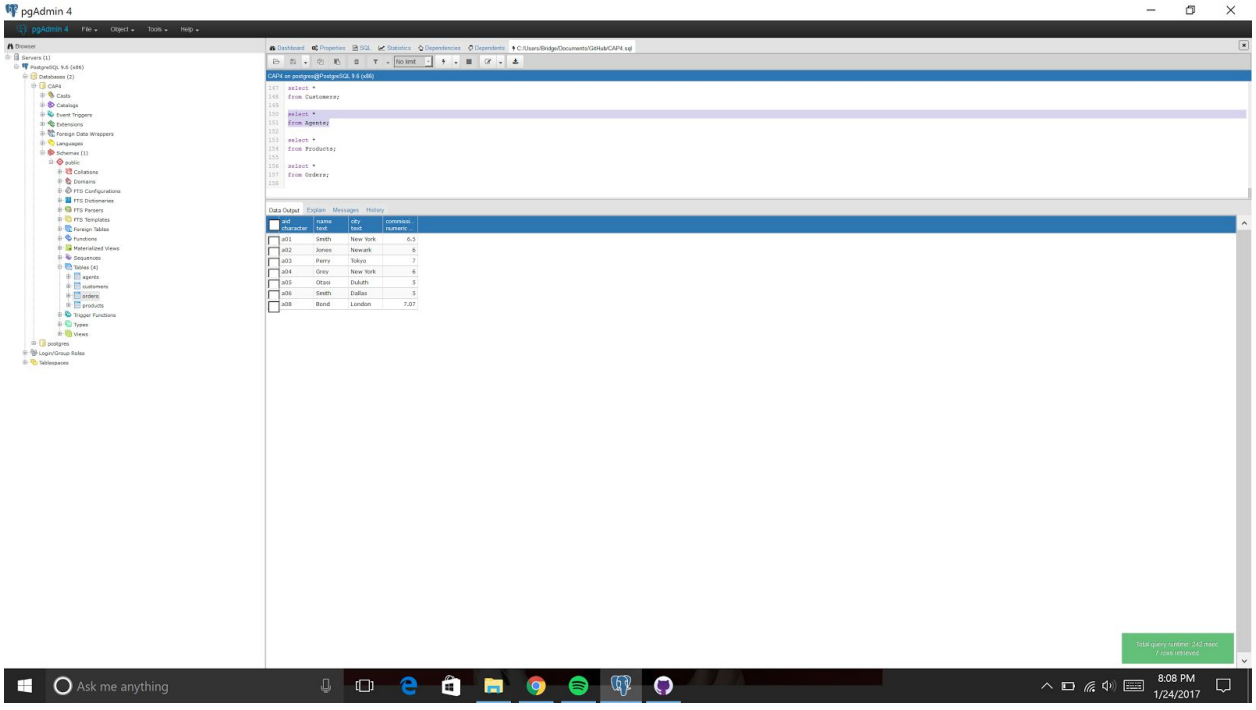
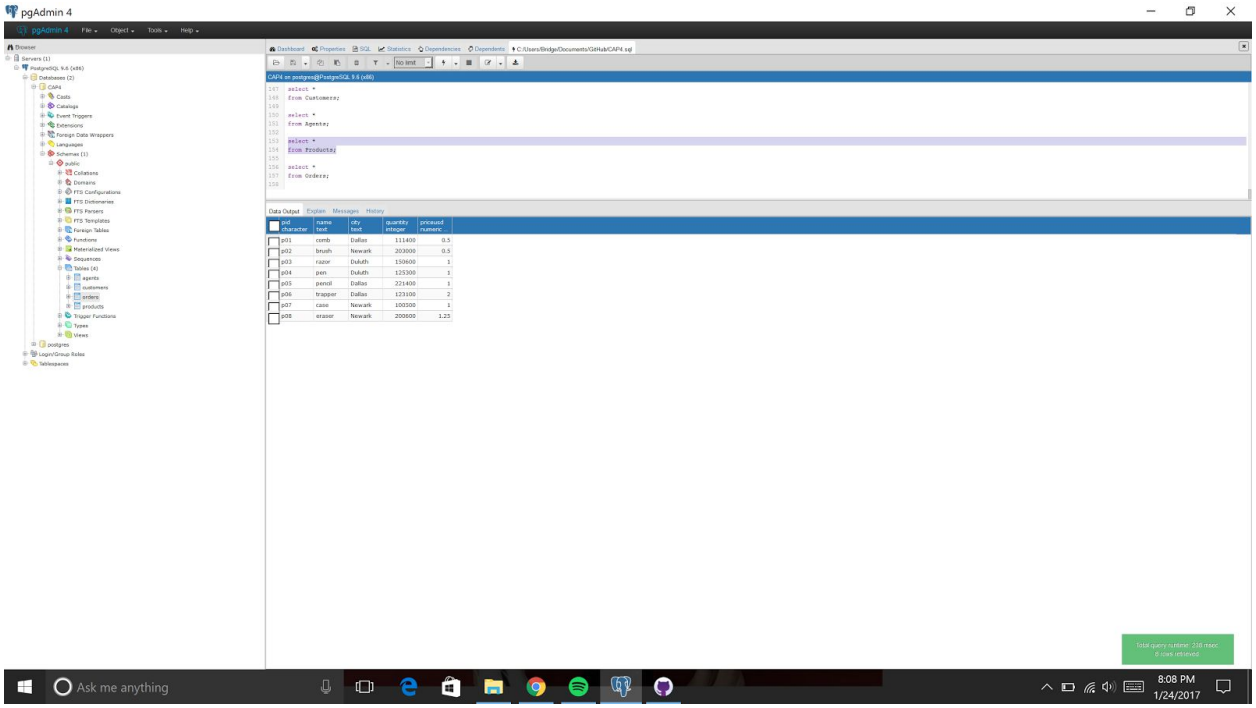
Bridget Leahy
Professor Labouseur
Database Systems
30 January 2017

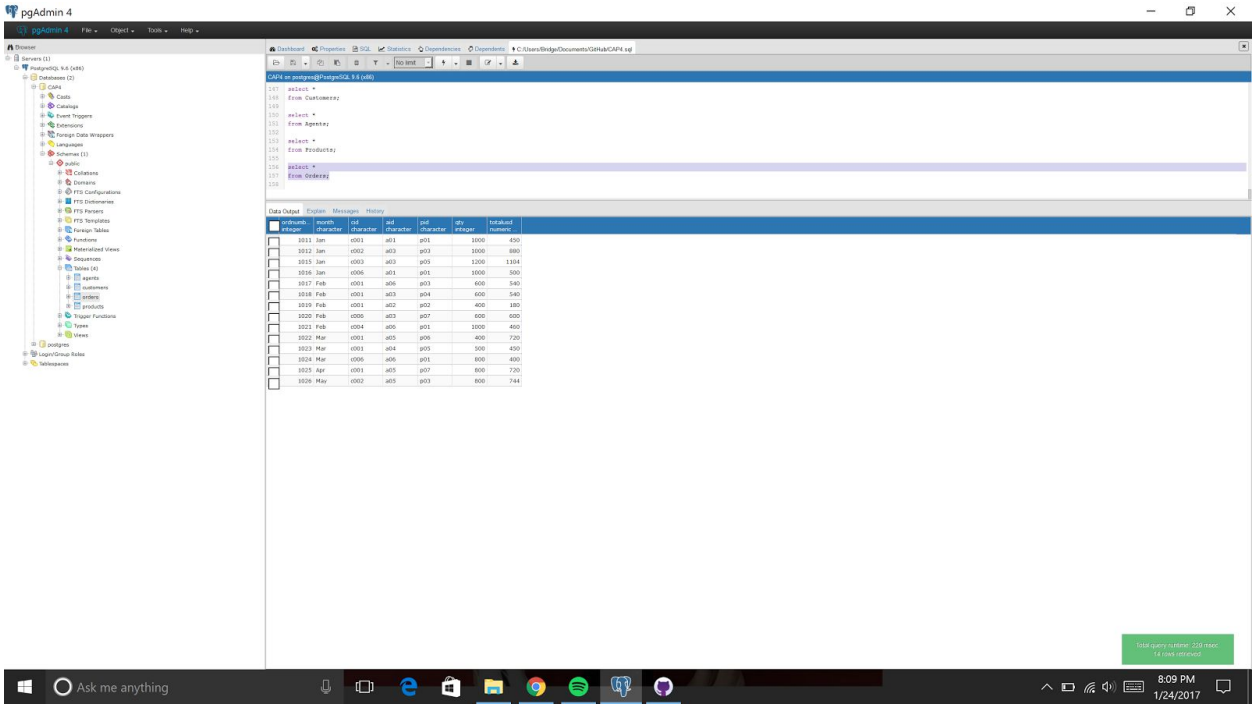
Lab Two

1.









2. Distinctions between primary, candidate, and superkey:

A primary key is the unique identifier in a table - the one and only one. If a table only has one candidate key, it automatically is the primary key. If the table has more than one candidate key, the primary key is chosen from it.

A candidate key is a minimal superkey. The candidate key uniquely identifies every single row in the fewest numbers of columns.

A superkey is a column or set of columns that uniquely identify each row.

3. There are various string, numeric, and date/time datatypes for PostgreSQL listed here.
For string datatypes, there are fixed length and variable length strings. Numerical datatypes vary for size of integers, boolean T/F, auto-incrementing integers, and floating point numbers. Date/Time datatypes vary to show only time, only date, both, and.or time zone.

There is a table containing data on security reports at Marist College, called Security Reports.
Fields:
CWID - int, not nullable
First_Name - char(50), not nullable
Middle_Name - char(50), nullable
Last_Name - char(50), not nullable
Time_incident - timestamp, not nullable
Details_incident - text, not nullable

4. Explain rules. Give examples and reasons:
   a. "First Normal Form" Rule
      All columns and rows must be atomic.
      This table violates First Normal Form:

Name	Breakfast	Lunch	Dinner	Snack
Bridget	Egg	Sandwich	Chicken	Apple, Chips
Jess	Oatmeal	Chicken	Fish	Peach, Cookie

      To fix it, I could create a new table or just add columns to the original:

Name	Breakfast	Morning Snack	Lunch	Dinner	Midnight Snack
Bridget	Egg	Apple	Sandwich	Chicken	Chips
Jess	Oatmeal	Peach	Chicken	Fish	Cookie

   b. "Access Rows by Content Only" Rule
      With this, users are searching for what's there, not where it is.
      I would not query for the row 3, I would query where student_id = 3

The reasoning behind this being that rows are not always in the same order, so it is important to query for what, not where.

c. “All Rows Must be Unique” Rule
For each table, all rows must be unique; however most database systems allow users and DBAs to violate this rule. This is important as the rule exists to prevent duplication. Duplicate data causes data integrity problems.