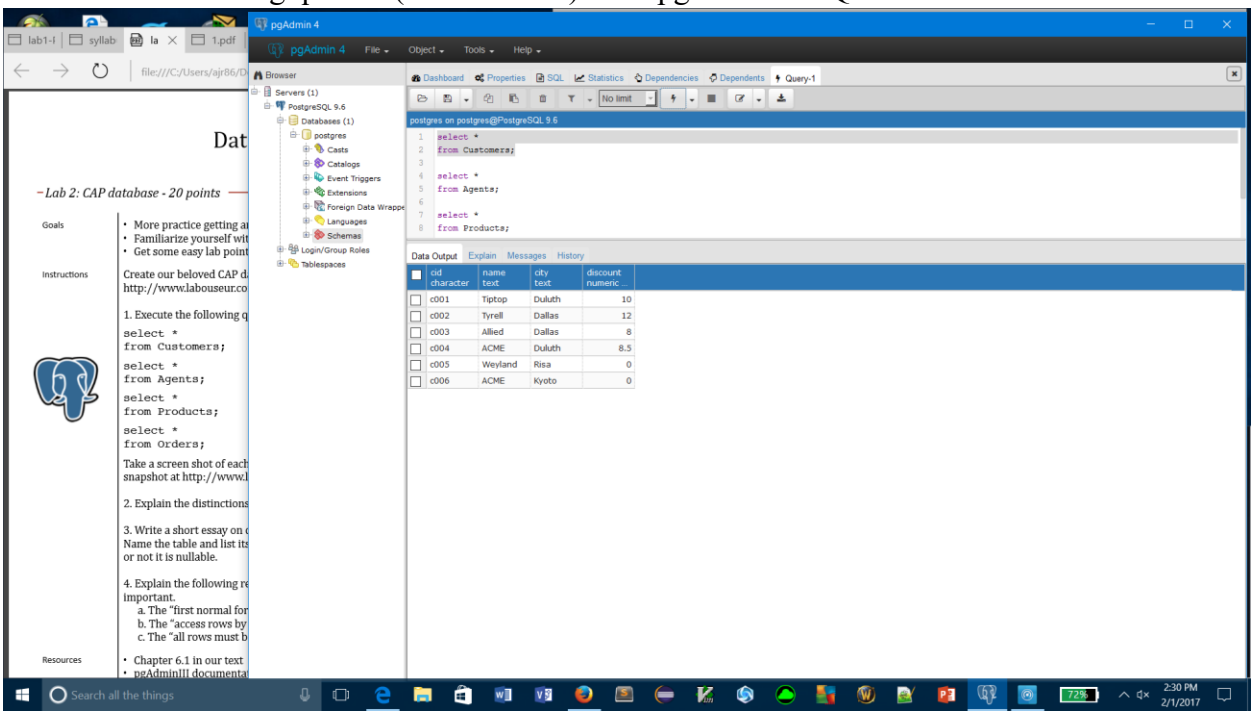
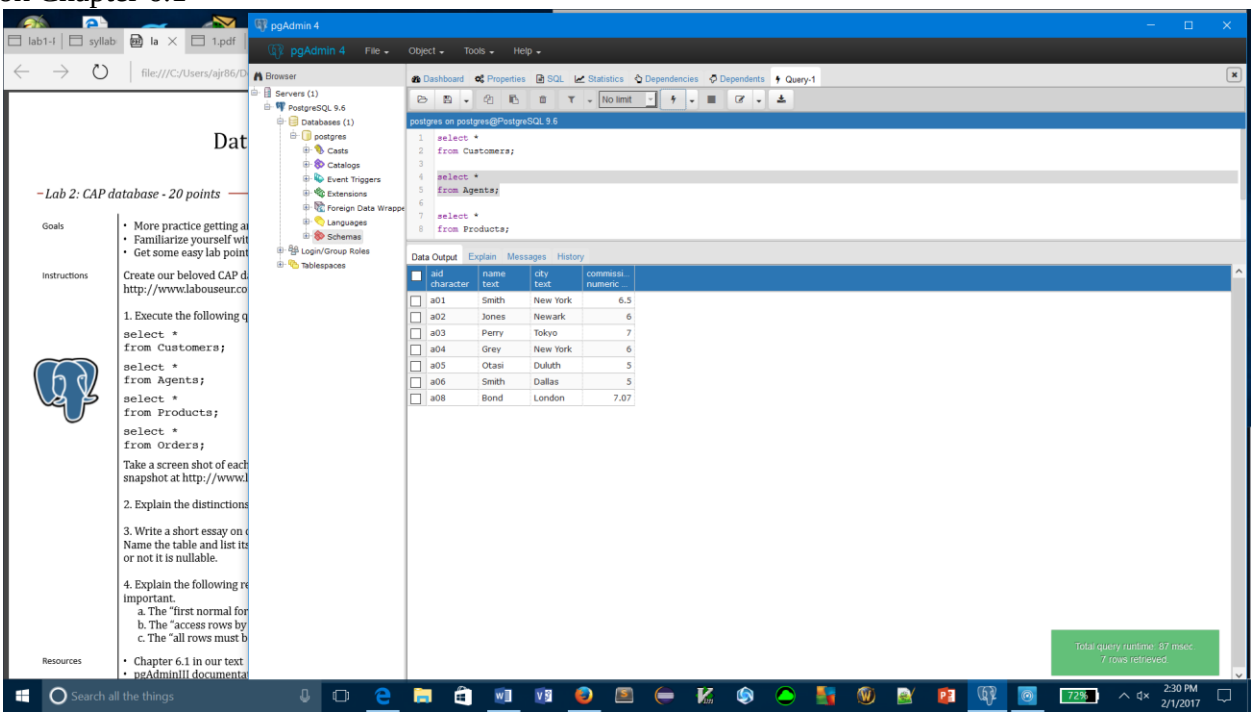
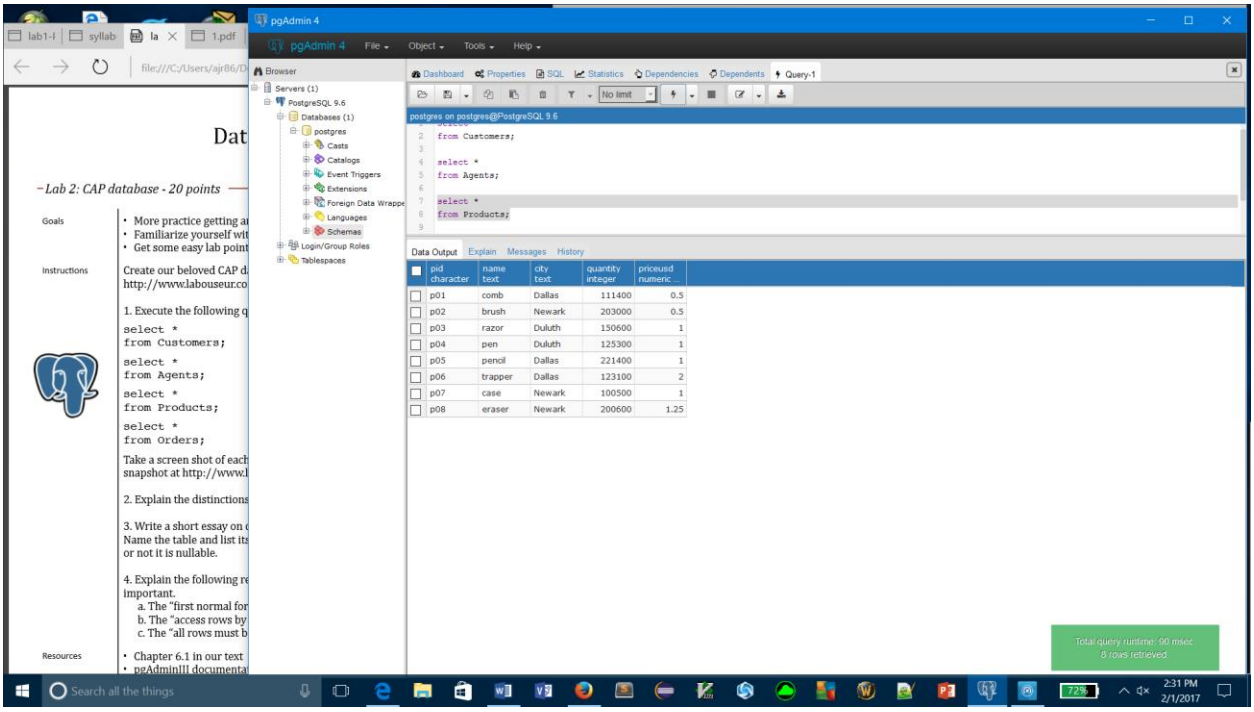
Database Systems
CMPT 308
Lab 2: CAP database
Textbook Chapter 6.1

1. Execute the following queries (one at a time) from pgAdmin's SQL Tool:

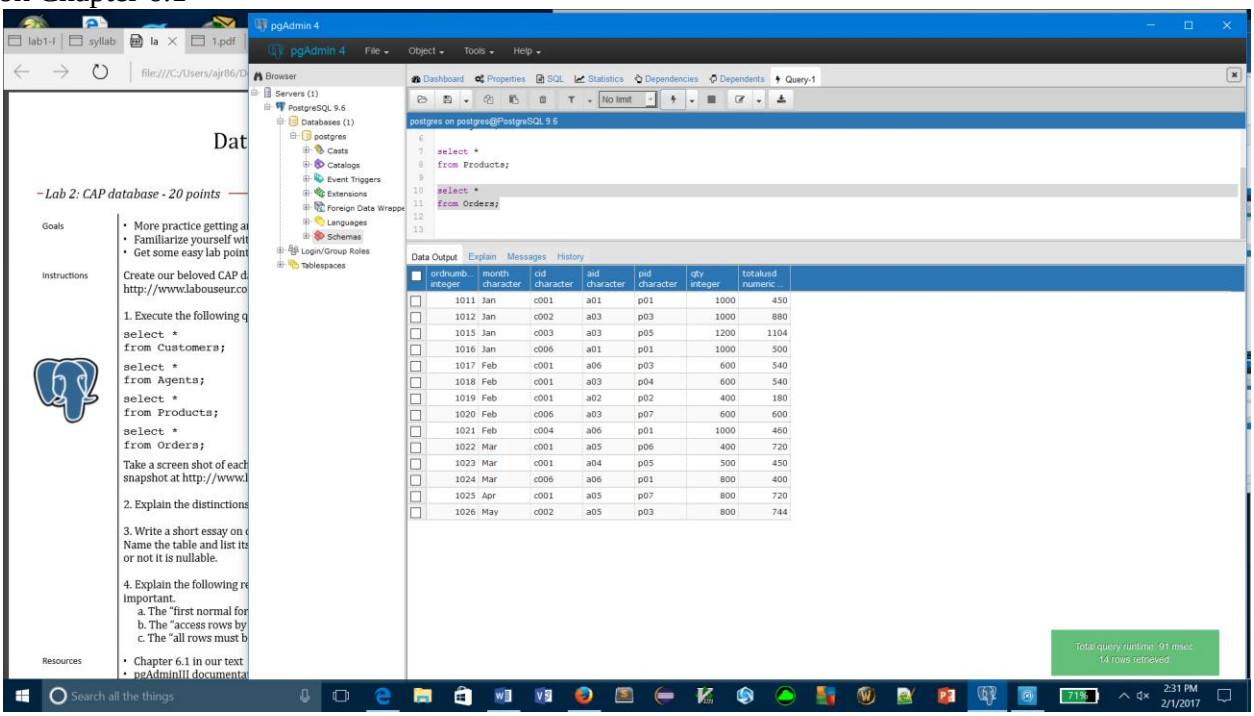


Database Systems
CMPT 308
Lab 2: CAP database
Textbook Chapter 6.1





Database Systems
CMPT 308
Lab 2: CAP database
Textbook Chapter 6.1



2. Explain the distinctions among the terms primary key, candidate key, and super key.
    a. Super Key
        i. Columns or a set of columns that ensures every row will be unique.
        ii. Uniquely identifies any row
    b. Candidate Key
        i. Uniquely identifies every single row
        ii. Also known as “minimal super key”
    c. Primary Key
        i. Chosen candidate key
        ii. Must contain a unique value for ea. row of data. Also cannot contain null values
3. Short Essay on Data Types
    a. Select a topic for which you might create a table. Name the table and list its fields (columns). For each field, give its data type and whether or not it is nullable.

Amazon receives multiple orders from many customers each day. To represent this in a table you would start by titling the table orders. The table named “Orders” will represent basically which customer ordered what off of their website. More specifically it will list the customer’s ID numbers, which will be a string of letters and numbers. Then their order numbers, which will just be a string of numbers, and even the month of when they ordered it. It will also contain how much they ordered, as a number pertaining to the quantity and the total price of the order, which will be represented in digits of US dollars. The only field that could be nullable is the month column. Every other column must pertain to a value that is known.

Database Systems
CMPT 308
Lab 2: CAP database
Textbook Chapter 6.1

4. Explain the following relational "rules" with examples and reasons why they are important.
    a. The "first normal form" rule
        i. The 1NF rule is one of the properties of a relation in relational databases. For a relation to be in 1NF the domain must be of an atomic value for each of the attributes. Each attribute must contain only a single value pertaining to its domain.
        ii. This rule is of importance because it allows relational databases to be unique and easier to understand by the user. This rule eliminates repetition in tables and organizes tables separately.
        iii. An example of this rule would be customers buying orders on amazon. Each customer ID must be unique and only represent one customer but each customer can have multiple orders as well. So, to represent this in a graph would look like this:

Customer ID	First Name	Last Name	Order Number
12345	Alex	Richin	54321
18356	Jordan	Smith	51234
12345	Alex	Richin	23412

    b. The "access rows by content only" rule
        i. This rule is important because it prevents rows and columns from getting disorganized. Basically this rule is saying to access rows by their given values in the column.
            1. Example: Select * from (somewhere) where (blank=blank)
    c. The "all rows must be unique" rule
        i. Prevents 2 rows from being the same in a given column. Must not have the same value.
        ii. Example: Each row in a given column pertains to unique values

Customer ID	First Name	Last Name	Order Number
12345	Alex	Richin	54321