Assignment #1

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Assignment Deliverables:

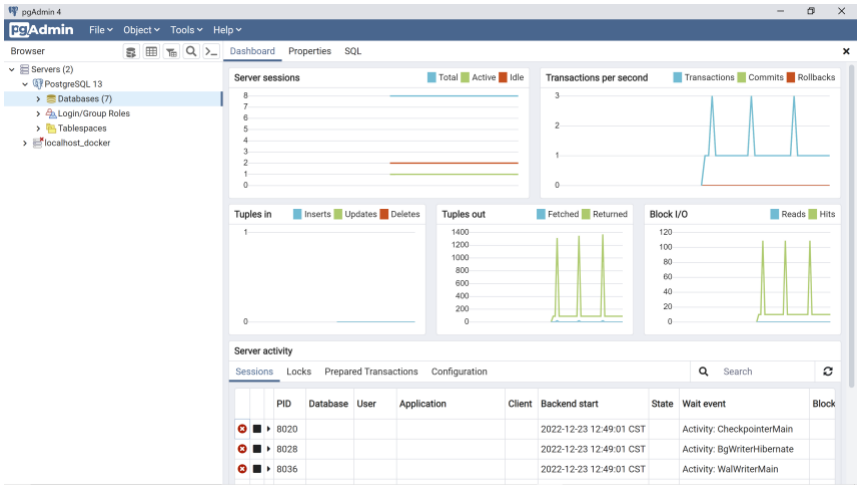
Submit your assignment as a single PDF document on Canvas that has the answers (SQL code and output) for the requirements listed below.

Assignment Objectives:

Use SQL/PostgreSQL to create and query a relational database application.

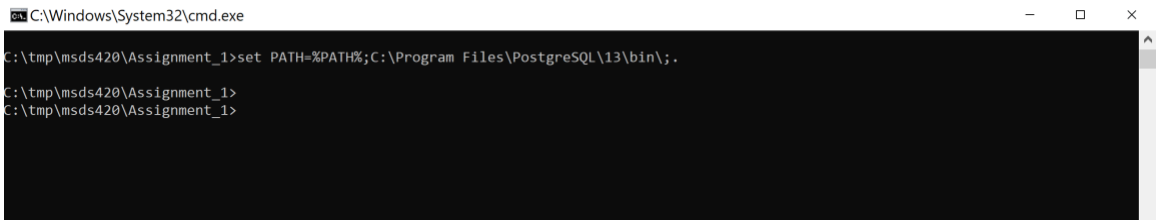
Assignment Instructions:

1. Read Chapter 1 (Installing PostgreSQL and pgAdmin) of your textbook
   - DeBarros, Anthony. 2022. Practical SQL: A Beginner's Guide to Storytelling with Data (second edition). San Francisco: No Starch Press. [ISBN-13: 978-1-7185-0106-5]
   - NU Library URL: https://learning.oreilly.com/library/view/practical-sql-2nd/9781098129866/
   - Chapter: 1
2. Download and install PostgreSQL (13 or higher) from the following URL: https://www.postgresql.org/download/ .
3. Startup **pgAdmin** and login using postgres/root username; you should see the following **pgAdmin** window

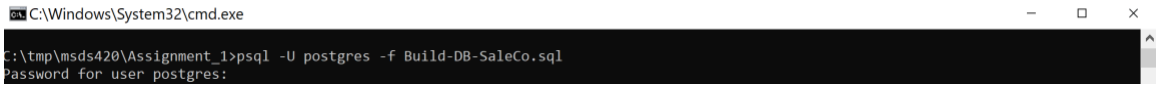


4. Create a subdirectory called Assignment_1 and save the following files you downloaded from Canvas to this directory:
    1) Build-DB-SaleCo.sql
    2) LoadRowsIntoDB

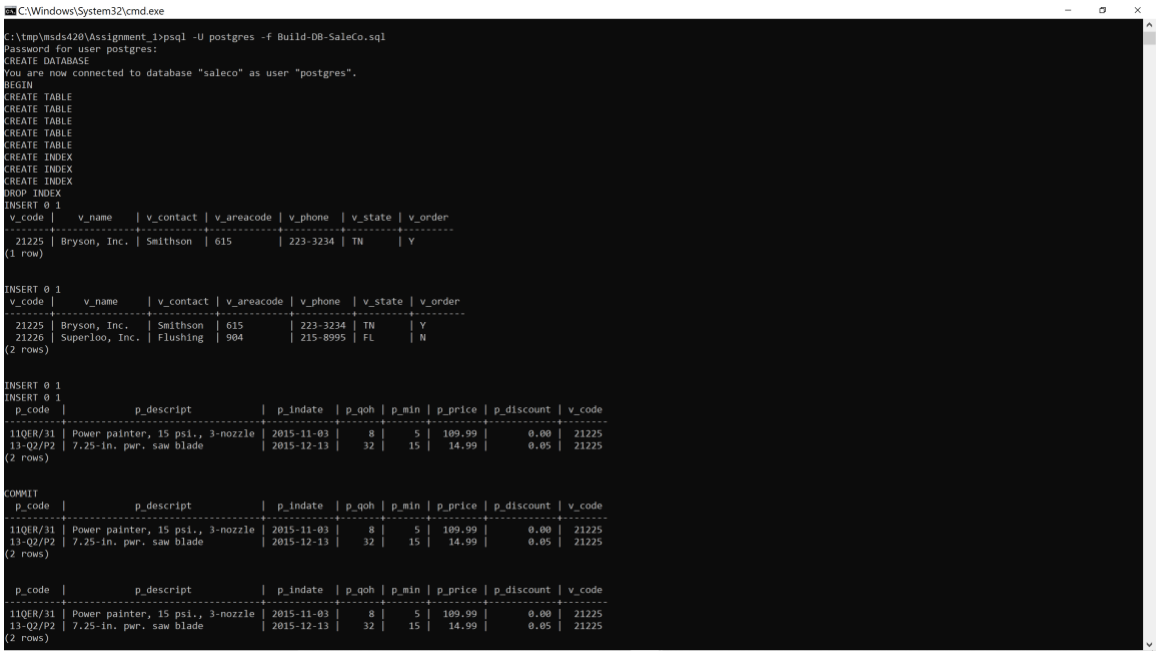
5. Startup a terminal/cmd window and add **psql** location/path to your computer bin PATH:



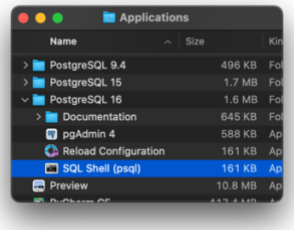
6. From the terminal/Assignment_1, startup psql to start executing Build-DB-SaleCo.sql script. Type the following command in the terminal and enter your password:
   - psql -U postgres -f Build-DB-SaleCo.sql

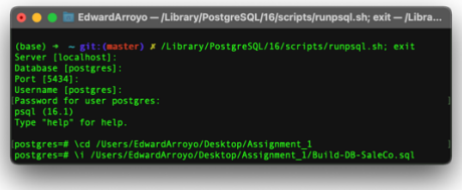


7. The script will start executing, and you should see something similar to this:

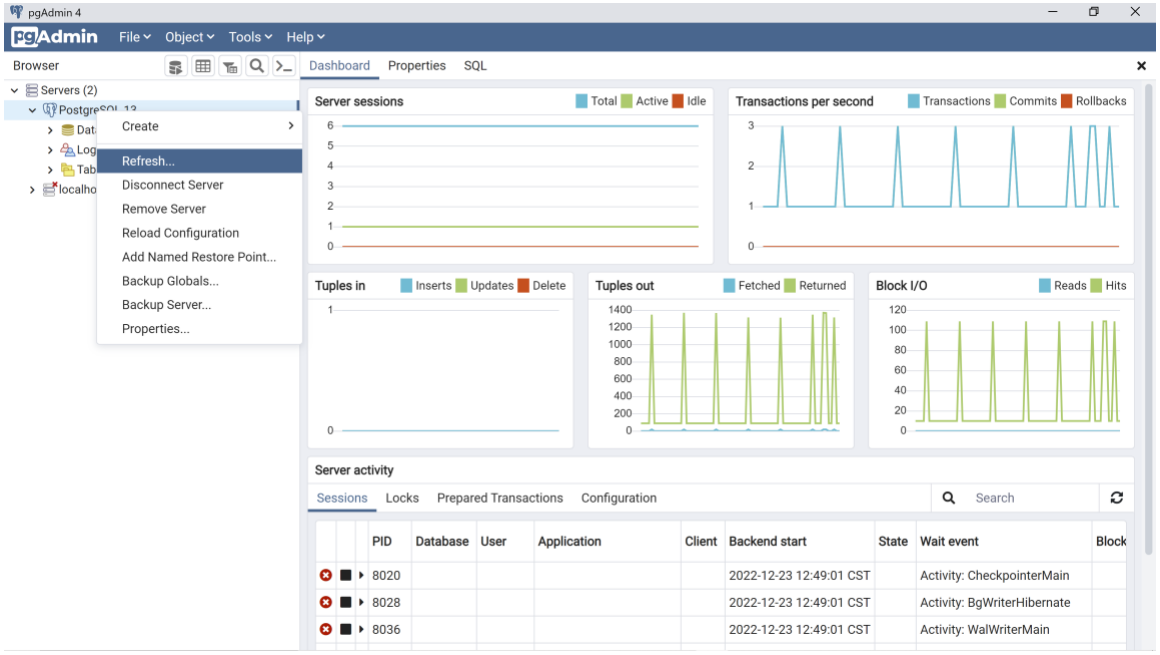


As an alternative you can use SQL Shell (psql):

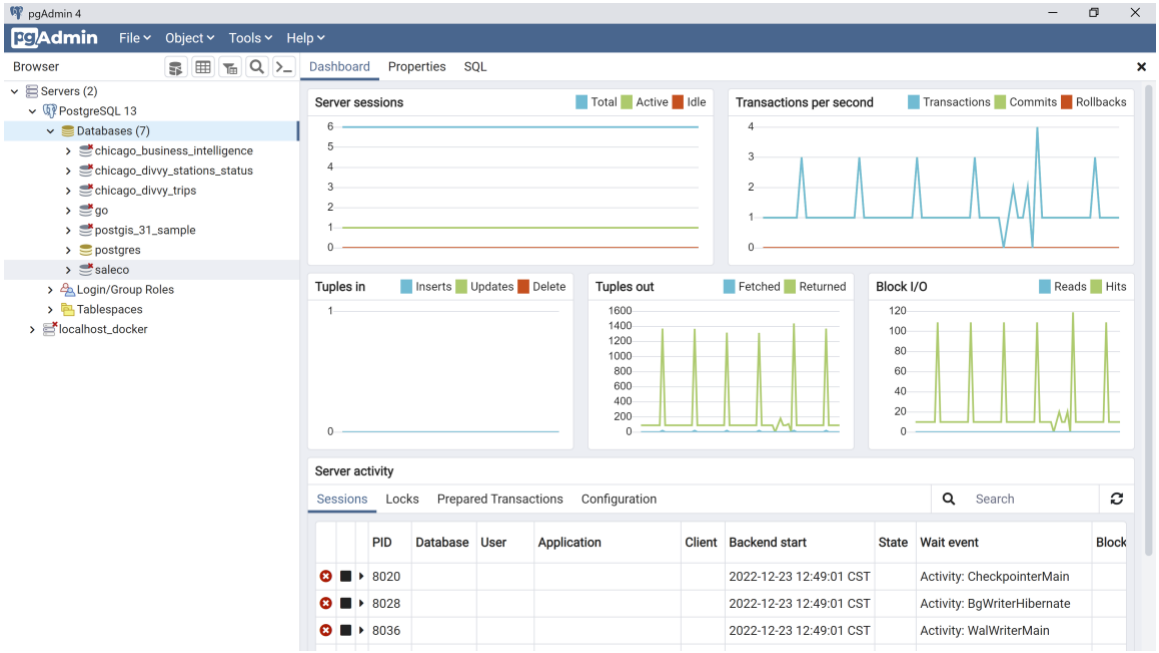




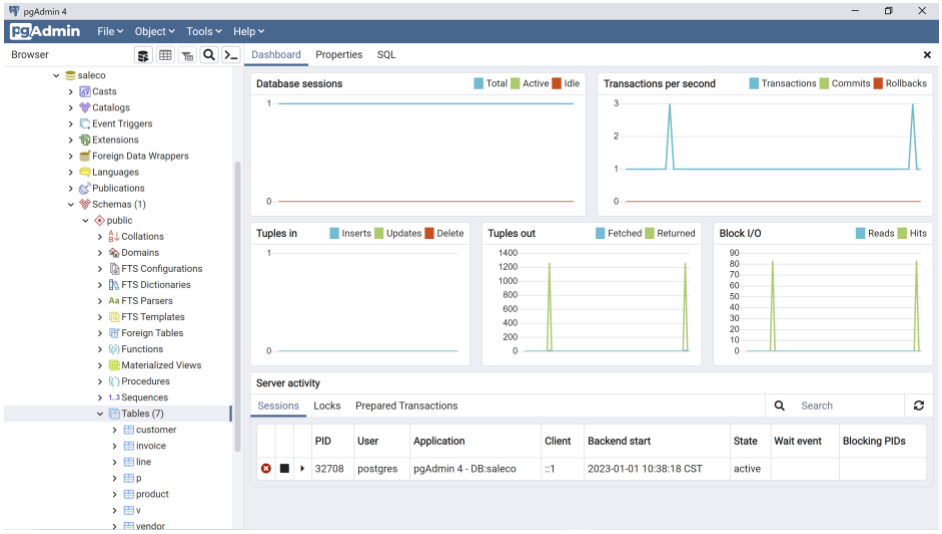
8. You could use psql or pgAdmin to inspect SaleCo database. If you use pgAdmin, right-click on Postgres and click refresh as follows:



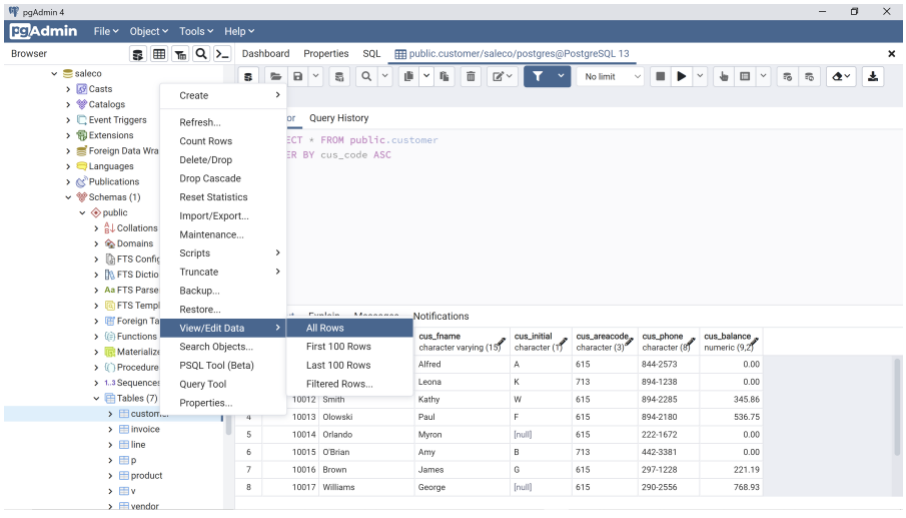
9. Click on Databases and you should see your SaleCo database as follows:



10. Click on SaleCo database, then select Schema, and after that click on tables. You should see your SaleCo database tables as follows:



11. Right-click on the Customers table, and select view all rows. You should see your SaleCo/Customers tables as follows:

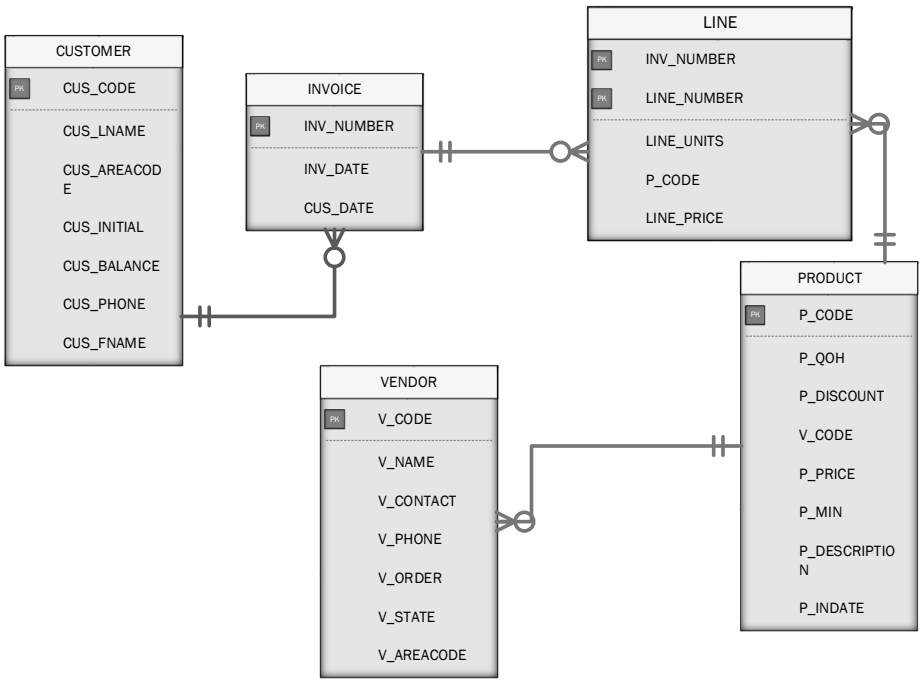


12. After you verify that your SaleCo database tables are populated correctly on PostgreSQL, you are ready to start executing your SQL code for the requirements listed below.
    - *Please note that you could use either pgAdmin/SQL window or psql shell/terminal to instrument and execute your code*

Assignment Requirements:

Use the SaleCo ERD listed below and the provided SQL scripts to construct its relational database and answer the following queries:

1. **(2 pts)** How many invoices are there? **(3 pts)** List the invoice numbers and the invoice dates.
2. **(2 pts)** How many customers are there? **(3 pts)** List the customer codes and customer names.
3. **(3 pts)** List vendor numbers and vendor names. **(7 pts)** Show the vendor count per state.
4. **(5 pts)** Based on price, what is the most expensive product? **(5 pts)** How much quantity on hand is available for the most expensive product?
5. **(5 pts)** Display the product description, quantity on hand, and price for all products that have a discount greater than 5%.
6. **(10 pts)** Generate a listing of products offered by each vendor. List vendor name, product code and product name. Sort by vendor name and product code.
7. **(5 pts)** What is the average discount (rounded to the nearest cent) given by each vendor.
8. **(3 pts)** What is the vendor with most "products on hand" for a particular product? **(7 pts)** What is the vendor with most "products on hand" for all its products combined? List both the vendor name and the number of products. Is it the same vendor in both cases?
9. **(10 pts)** Generate a listing of customer purchases, including the subtotals for each of the invoice line numbers; sort output by customer code, invoice number and the line_number.
10. **(10 pts)** List the total amount spent by each customer who made purchases during the current invoice cycle—that is, for the customers who appear in the INVOICE table; sort by customer code.
11. **(10 pts)** Find a listing of customers who did not make purchases during the invoicing period; sort by customer code.
12. **(10 pts)** Create a query to produce a summary of the value of products currently in inventory.


CUSTOMER
CUS_CODE
CUS_LNAME
CUS_AREACODE
CUS_INITIAL
CUS_BALANCE
CUS_PHONE
CUS_FNAME
INVOICE
INV_NUMBER
INV_DATE
CUS_DATE
LINE
INV_NUMBER
LINE_NUMBER
LINE_UNITS
P_CODE
LINE_PRICE
PRODUCT
P_CODE
P_QOH
P_DISCOUNT
V_CODE
P_PRICE
P_MIN
P_DESCRIPTION
P_INDATE
VENDOR
V_CODE
V_NAME
V_CONTACT
V_PHONE
V_ORDER
V_STATE
V_AREACODE