Simple SQL

ACTIVITY 9

We are going to "complete the loop" of the Excel-to-PostgreSQL model. In this activity, you will write SQL queries to retrieve the answers to the same questions asked of you in Activity 6. (You will be using the TriMet data you uploaded, also as part of Activity 6.) We will work through examples.

Purpose

The purpose of this activity is to help you learn how to do simple SQL queries in PostgreSQL using the phpPgAdmin interface.

Learning Objective

- Using SQL queries and joins, answer a set of simple count type questions.
- Make the connection between using this approach and the Excel model.

Required Resources

- Class introductory notes about using a database (will be passed out and reviewed by instructor)
- Web browser

Time Allocated

50 minutes in class

Tasks

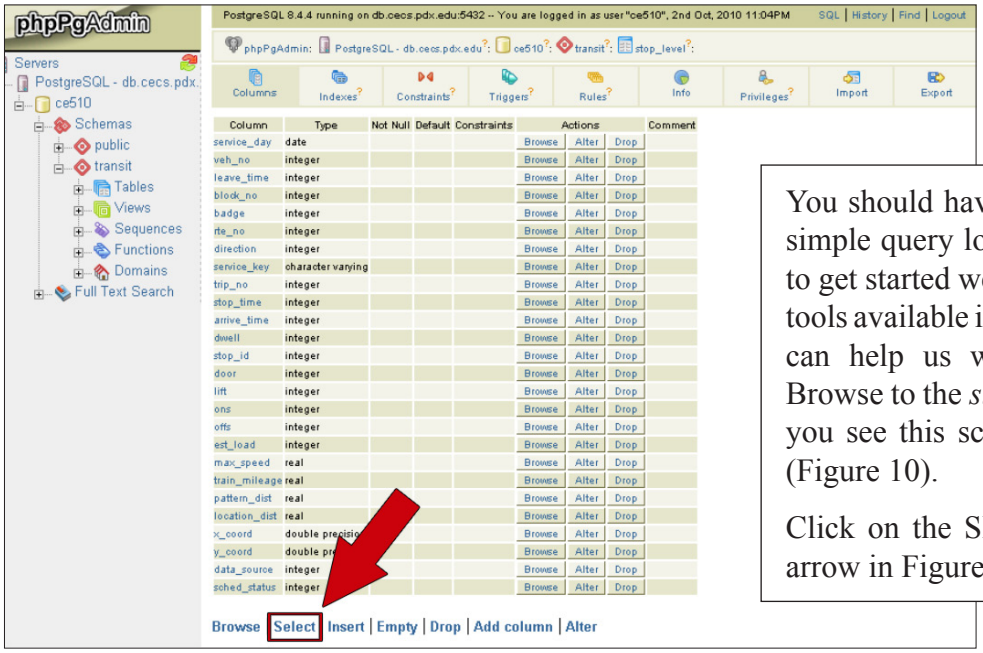
A. Login to phpPgAdmin

Login to your database and select your database.

B. Run Some Sample Queries

Let's try to answer this question from Activity 6:

1. How many stops were made at STOP_ID 805?



You should have already written the simple query logic in Activity 7, but to get started we will use some of the tools available in phpPgAdmin which can help us write simple queries. Browse to the *stop_level* table so that you see this screen in phpPgAdmin (Figure 10).

Click on the SELECT link (see the arrow in Figure 10, at left).

Figure 10 phpPGAdmin table browser screen capture

You should be taken to a "query" form. You can use this form to ask simple queries of the database. Note all of the different operators for the logical selection criteria. Take a minute to see if you can find a description of the logical operators in the PostgreSQL help manual. When you do, you should bookmark the page. Now, enter 805 in the *stop_id* field and put a check box next to the columns you want returned in the query. Note that you can select all fields in the lower left corner.

The number of rows returned should be the same as in Activity 6, when you used Excel.

You can also enter more complicated queries in the SQL window. Click on the Edit SQL link. You should see the following window (Figure 11):

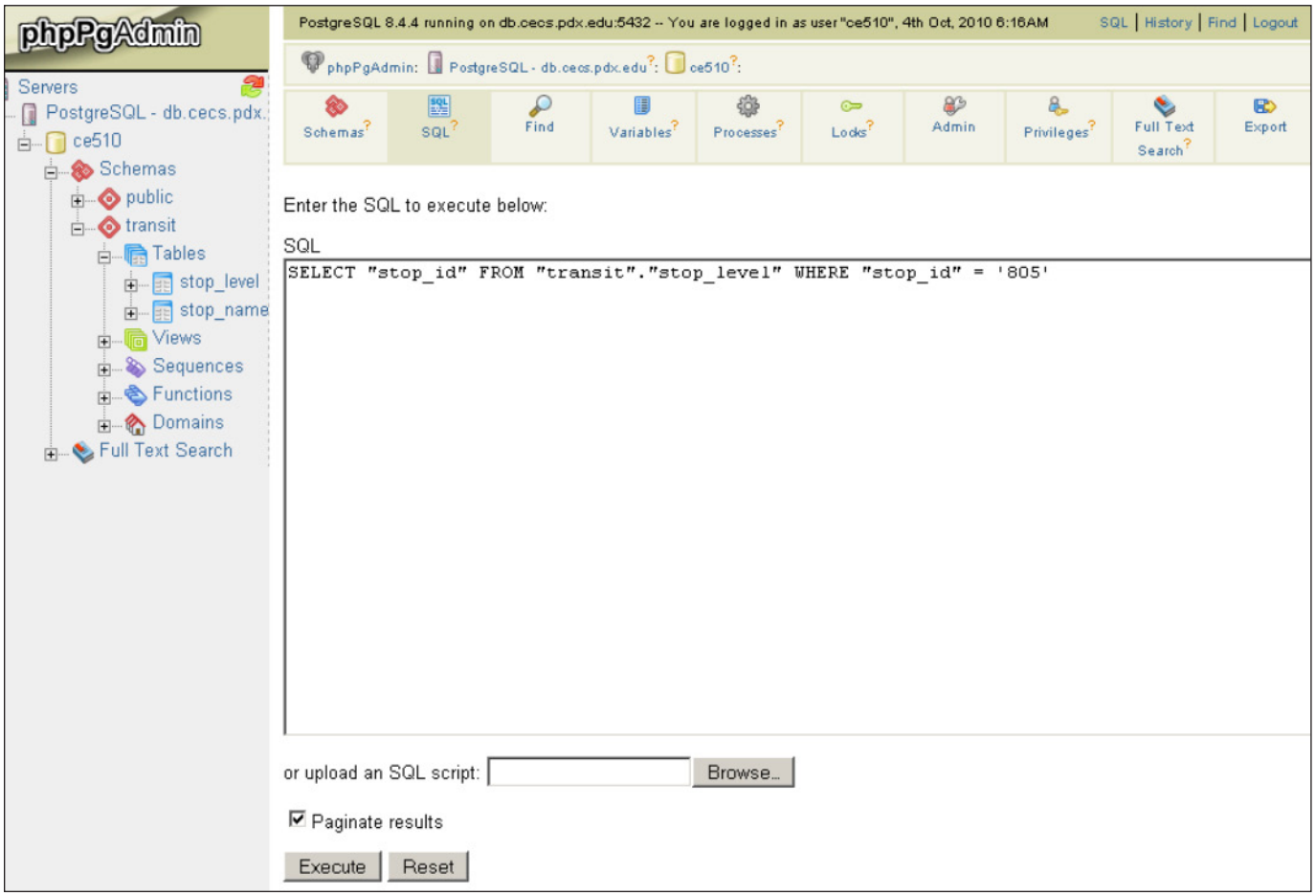


Figure 11 phpPGAdmin SQLwindow screen capture

Inspect the statement so that you understand the logic and structure behind it. Note that the columns you requested are listed after the ***SELECT*** statement, the ***FROM*** includes the schema (*transit.stop_level*), and the ***WHERE*** condition lists the logical filter. Now let's use the SQL window to answer the second question:

2. How many stops were made at STOP_ID 2001?

Edit the SQL statement to modify the necessary criteria, then click the ***EXECUTE*** button. Note that if you click the ***DOWNLOAD*** link, you are given the option to return the query you just executed in CSV format.

C. Using Queries

Now duplicate the remaining "queries" that were done in Excel "database". For each of these questions, include the SQL statement and the result.

3. How many stops were made where the STOP_ID was greater than 1500 in table *stop_level*?
4. How many stops were made at time points in table *stop_level*?
5. How many routes serve Cornelius in table *stop_names*?
6. Which routes serve the intersection of W Arlington & Barton?
7. Do the JOIN between the tables. Output the CSV to a file.
8. What is the total amount of dwell time that occurred with a stop on Glisan *(Hint: use an aggregate operator to return this answer to you directly)*.

Deliverable

Provide a typed answer to all questions. Include discussions and show comparisons to Excel work if needed. Submit to Dropbox.

Assessment

This activity is a short response activity. The score that you will be given is based on the quality and depth of discussion. The response expected differs by question as described in the rubric below:

Activity 9 Grading Rubric

	Excellent (10)	Good (8)	Poor (6)	NONE
Discussion	Insightful discussion or commentary relating to the question at hand demonstrating student understanding of the task.	Discussion was competent regarding the lessons demonstrated by a correct response, but lacked discussion other than the obtained value.	The discussion did not address the lessons or applicability of the activity.	Did not submit
Comparison	If a difference in results is noted then the student successfully demonstrated and discussed the differing results between PostgreSQL and Excel	Comparison lacked specific discussion regarding the possible reasons for the results.	No comparison was included even though a difference in results was present.	Did not submit
Quality	Document is typed, formatted, contains appropriate grammar and language.	Document has minor grammatical errors or inappropriate language.	Document was unorganized, contained inappropriate language and/or grammatical errors.	Did not submit

Student Notes