**Querying Data from PostgreSQL**

How to create demonstration tables in pgAdmin

As you work through each of the modules in this course, you will see several demonstrations using a database of airline on-time performance data. The data used in this course are a subset of data from the Federal Aviation Administration database of performance statistics; the subset used in this course reflects a variety of performance data for the month of January 2018.

It can be very helpful to your learning to create these demonstration tables in your local PostgreSQL environment so that you can follow along with the modules and practice what you’ve learned. Just use pgAdmin and follow these steps to create your demo environment.

* **Download the Federal Aviation Administration dataset.**

The data used in the demonstrations are included in the same zipped file as these instructions. The data file is *OntimeCarrier.csv*; extract and save this file to your machine.

For more information or additional practice data, you can also access the complete Federal Aviation Administration statistics database online at <https://www.transtats.bts.gov/tables.asp?DB_ID=120>.

* **Create the demonstration database.**

Create a separate database in Postgres to store your demonstration tables. In the demonstrations, this database is called “airlines”. To create this database, simply launch pgAdmin and login to your Postgres server. Select the *Object* menu, then click *Create*, and select *Database*.

When the dialog box appears, enter “airlines” in the name field and click *Save*. The airlines database you just created will appear in the left browser pane. Click it once to select it. After it is selected, select the *Tools* menu and click *Query Editor* to launch an interactive SQL editor.

* **Create the demonstration tables.**

The demonstrations in this course use three tables. Create each of these tables in theairlines database.

***Performance***

The *performance* table includes all of the on-time statistics. To create this table, copy and paste the following code into pgAdmin, and click *Execute*.

CREATE TABLE performance

(

fl\_date date,

mkt\_carrier character varying(2),

mkt\_carrier\_fl\_num character varying(4),

origin character varying(3),

origin\_city\_name character varying(45),

origin\_state\_abr character varying(2),

dest character varying(3),

dest\_city\_name character varying(45),

dest\_state\_abr character varying(2),

dep\_delay\_new numeric,

arr\_delay\_new numeric,

cancelled numeric,

cancellation\_code character varying(2),

diverted numeric,

carrier\_delay numeric,

weather\_delay numeric,

nas\_delay numeric,

security\_delay numeric,

late\_aircraft\_delay numeric

);

This code creates the empty table.

First set the "datestyle" setting. Run the following command in the pgAdmin Query Tool.

***SET datestyle = 'ISO, MDY';***

To populate the table with the contents of the *OntimeCarrier.csv* file, copy and paste the code below into pgAdmin.

Change the FROM clause (highlighted below) to reflect the correct location of the CSV file you extracted. Click *Execute*.

COPY public.performance (fl\_date, mkt\_carrier, mkt\_carrier\_fl\_num, origin, origin\_city\_name, origin\_state\_abr, dest, dest\_city\_name, dest\_state\_abr, dep\_delay\_new, arr\_delay\_new, cancelled, cancellation\_code, diverted, carrier\_delay, weather\_delay, nas\_delay, security\_delay, late\_aircraft\_delay)

FROM '/Users/Downloads/OntimeCarrier.csv'

DELIMITER ','

CSV HEADER ENCODING 'UTF8'

QUOTE '"'

ESCAPE '''';

***Cancellation codes***

The *codes\_cancellation* table is a lookup table that lists the cancellation codes that exist in the data, along with the meaning behind each code. To create this table, copy and paste the following code into pgAdmin, and click *Execute*.

CREATE TABLE codes\_cancellation

(

cancellation\_code character varying(2),

cancel\_desc character varying(45)

);

INSERT INTO codes\_cancellation (cancellation\_code, cancel\_desc)

VALUES

('A','Carrier'),

('B','Weather'),

('C','National Air System'),

('D','Security');

***Carrier codes***

The *codes\_carrier* table is a lookup table that lists the air carrier codes that exist in the data, along with the full name of each airline. To create this table, copy and paste the following code into pgAdmin, and click *Execute*.

CREATE TABLE codes\_carrier

(

carrier\_code character varying(2),

carrier\_desc character varying(45)

);

INSERT INTO codes\_carrier (carrier\_code, carrier\_desc)

VALUES

('AA','American Airlines'),

('AS','Alaska Airlines'),

('B6','JetBlue Airways'),

('DL','Delta Air Lines'),

('F9','Frontier Airlines'),

('G4','Allegiant Air'),

('HA','Hawaiian Airlines'),

('NK','Spirit Air Lines'),

('UA','United Air Lines'),

('VX','Virgin America'),

('WN','Southwest Airlines');