Adding Marina and Boat Ramp data to QGIS and Postgres

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For CS540 – Professor Lehr

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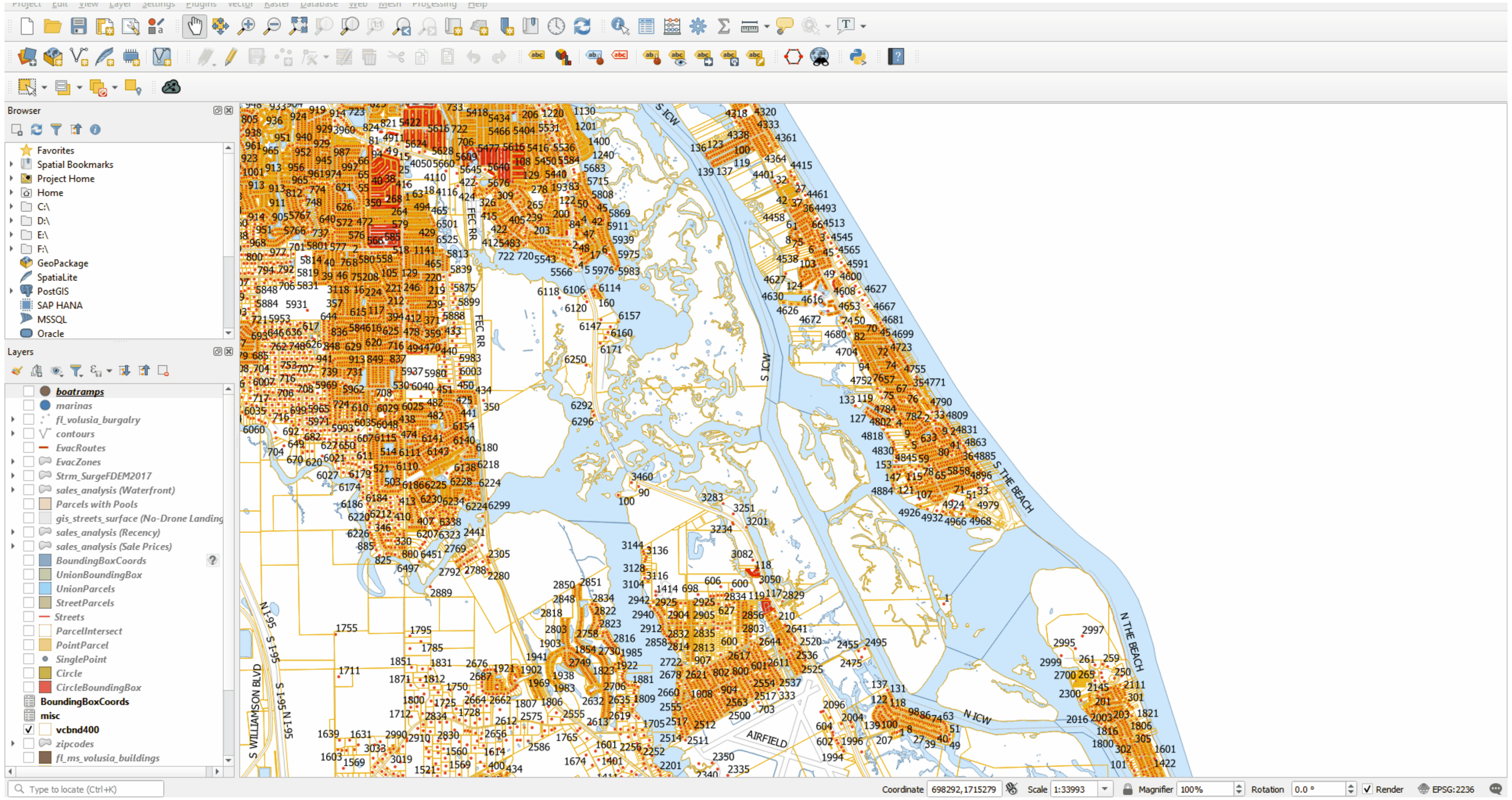
First, download the required files:

- https://github.com/Kodyth/CS540
  - Read the readme to learn more about each of the files in the repository.
  - The files needed to get the data in Postgres and QGIS are:
    - boatramps.zip
    - marinas.zip
    - Marina_and_boatramps_distance.csv

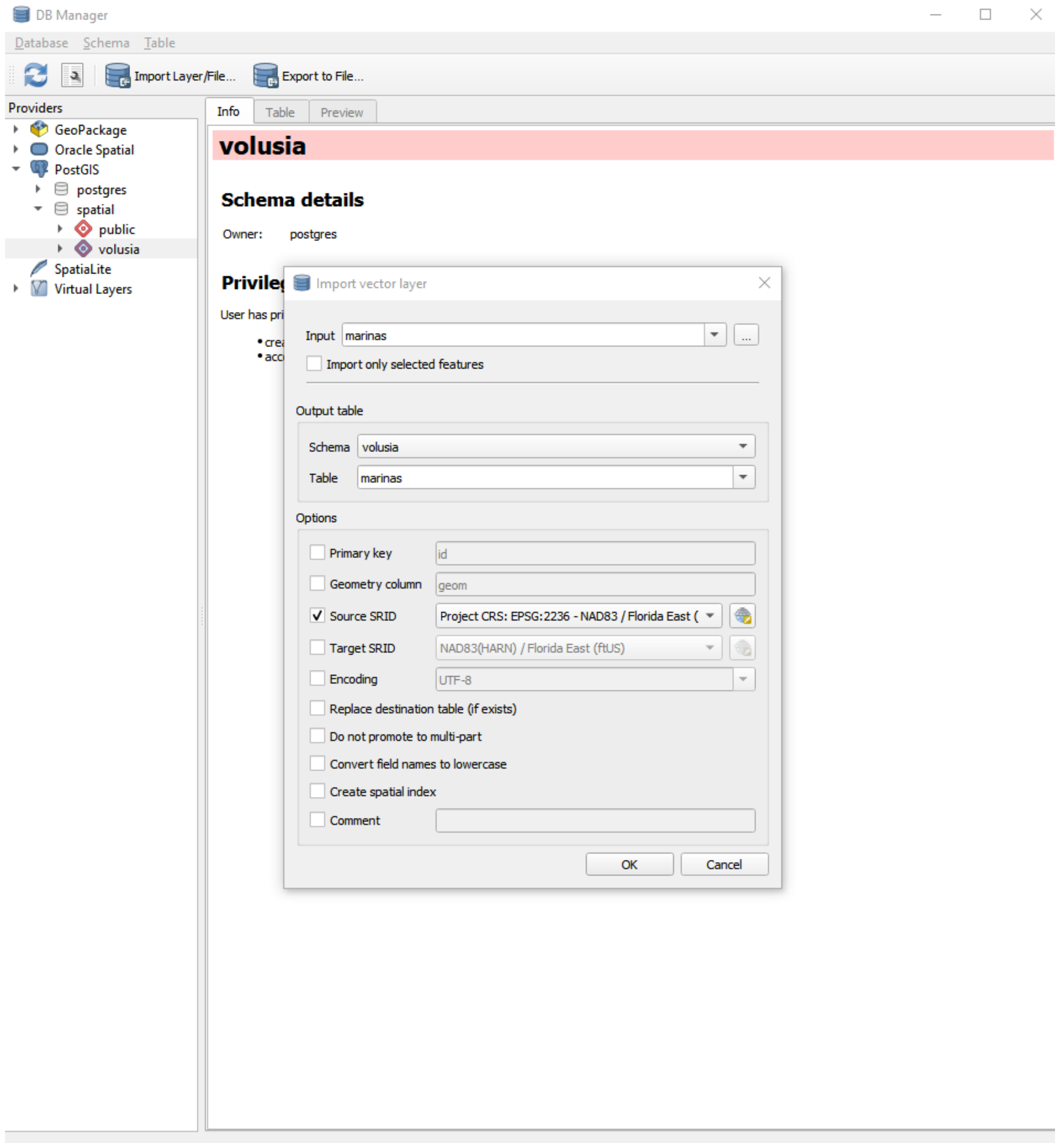
Create new layers in QGIS to visualize the location of each Marina/Boat ramp

- Extract the .zip files into a known location such as C:\temp\cs540\qgis
- In QGIS, add two new layers for the marinas and boatramps
    - Select layer -> add layer -> new vector layer -> from file
        - Select marinas.shp to create the marinas layer
        - Select BoatRamps.shp to create the boatramp layer
            - Edit the name of the boatramps layer to remove capitals letters: (BoatRamps -> boatramps)



Import the marinas and boatramps layers into Postgres

- Select DB Manager -> Postgis -> spatial -> volusia
- Next select import layer/file
  - For input, select the marinas layer (repeat this process to add the boatramps layer second)
  - For schema select volusia
  - For table, select marinas
  - Make sure the Source SRID is the correct one for the project (EPSG:2236)
  - Click done and QGIS will import the layer into Postgres as a new table



volusia

Schema details

Owner: postgres

Input: marinas

□ Import only selected features

Output table

Schema: volusia

Table: marinas

Options

□ Primary key: id

□ Geometry column: geom

☑ Source SRID: Project CRS: EPSG:2236 - NAD83 / Florida East (

□ Target SRID: NAD83(HARN) / Florida East (ftUS)

□ Encoding: UTF-8

□ Replace destination table (if exists)

□ Do not promote to multi-part

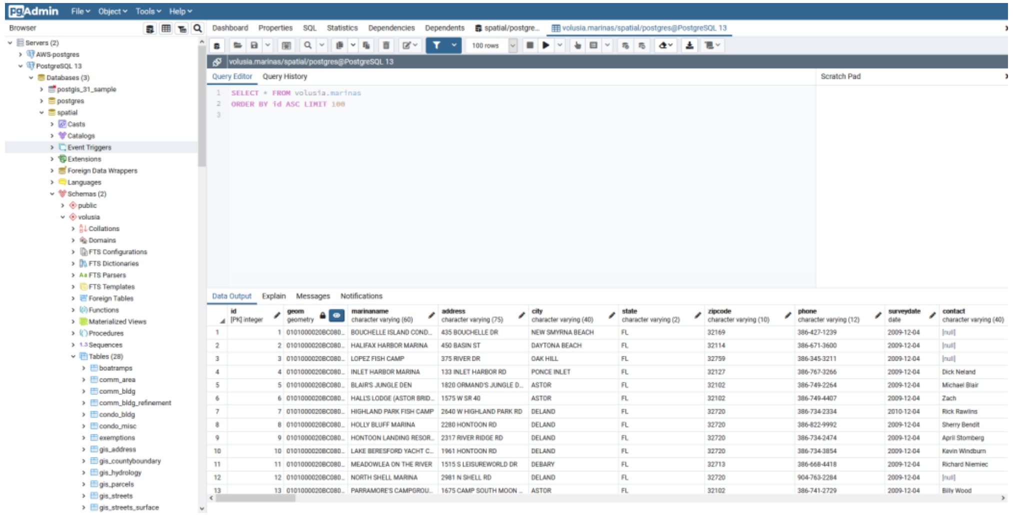
□ Convert field names to lowercase

□ Create spatial index

□ Comment

Verify tables have been added successfully

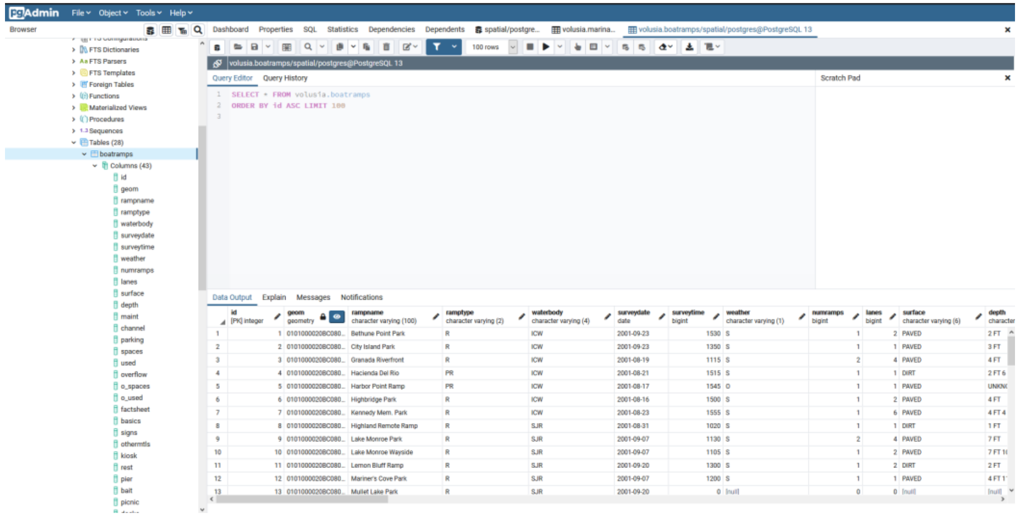
- Check in PGAdmin that the tables have been created and contain data
  - Find each table by clicking databases -> spatial -> schema -> volusia -> tables -> marinas and boatramps
  - It is recommended that you change the column labeled “name” to “marinaname” in the marinas table to prevent issues when querying the table
    - To do this, simply right click on the name column, select properties, change the column, change the name, and click save



volusia.marinas/spatial/postgres@PostgreSQL 13

```
SELECT * FROM volusia.marinas
ORDER BY id ASC LIMIT 100
```

	id [PK] integer	geom geometry	marinaname character varying (60)	address character varying (75)	city character varying (40)	state character varying (2)	zipcode character varying (10)	phone character varying (12)	surveydate date	contact character varying (40)
1	1	0101000020BC080...	BOUCHELLE ISLAND COND...	435 BOUCHELLE DR	NEW SMYRNA BEACH	FL	32169	386-427-1239	2009-12-04	[null]
2	2	0101000020BC080...	HALIFAX HARBOR MARINA	450 BASIN ST	DAYTONA BEACH	FL	32114	386-671-3600	2009-12-04	[null]
3	3	0101000020BC080...	LOPEZ FISH CAMP	375 RIVER DR	OAK HILL	FL	32759	386-345-3211	2009-12-04	[null]
4	4	0101000020BC080...	INLET HARBOR MARINA	133 INLET HARBOR RD	PONCE INLET	FL	32127	386-767-3266	2009-12-04	Dick Neland
5	5	0101000020BC080...	BLAIR'S JUNGLE DEN	1820 ORMAND'S JUNGLE D...	ASTOR	FL	32102	386-749-2264	2009-12-04	Michael Blair
6	6	0101000020BC080...	HALL'S LODGE (ASTOR BRID...	1575 W SR 40	ASTOR	FL	32102	386-749-4407	2009-12-04	Zach
7	7	0101000020BC080...	HIGHLAND PARK FISH CAMP	2640 W HIGHLAND PARK RD	DELAND	FL	32720	386-734-2334	2010-12-04	Rick Rawlins
8	8	0101000020BC080...	HOLLY BLUFF MARINA	2280 HONTOON RD	DELAND	FL	32720	386-822-9992	2009-12-04	Sherry Bendit
9	9	0101000020BC080...	HONTOON LANDING RESOR...	2317 RIVER RIDGE RD	DELAND	FL	32720	386-734-2474	2009-12-04	April Stomberg
10	10	0101000020BC080...	LAKE BERESFORD YACHT C...	1961 HONTOON RD	DELAND	FL	32720	386-734-3854	2009-12-04	Kevin Windburn
11	11	0101000020BC080...	MEADOWLEA ON THE RIVER	1515 S LEISUREWORLD DR	DEBARY	FL	32713	386-668-4418	2009-12-04	Richard Niemiec
12	12	0101000020BC080...	NORTH SHELL MARINA	2981 N SHELL RD	DELAND	FL	32720	904-763-2284	2009-12-04	[null]
13	13	0101000020BC080...	PARRAMORE'S CAMPGROU...	1675 CAMP SOUTH MOON ...	ASTOR	FL	32102	386-741-2729	2009-12-04	Billy Wood



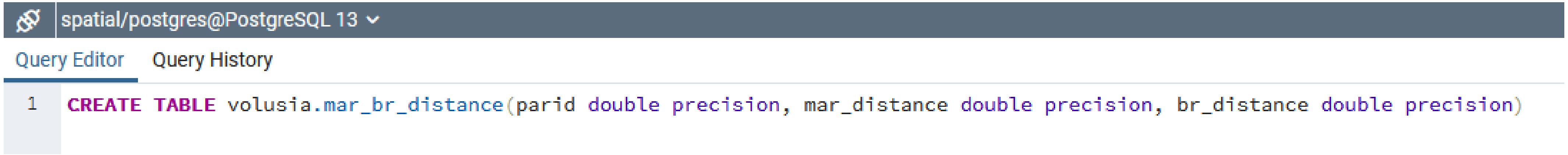
volusia.boatramps/spatial/postgres@PostgreSQL 13

```
SELECT * FROM volusia.boatramps
ORDER BY id ASC LIMIT 100
```

	id [PK] integer	geom geometry	rampname character varying (100)	ramptype character varying (2)	waterbody character varying (4)	surveydate date	surveytime bigint	weather character varying (1)	numramps bigint	lanes bigint	surface character varying (6)	depth character
1	1	0101000020BC080...	Bethune Point Park	R	ICW	2001-09-23	1530	S	1	2	PAVED	2 FT
2	2	0101000020BC080...	City Island Park	R	ICW	2001-09-23	1350	S	1	1	PAVED	3 FT
3	3	0101000020BC080...	Granada Riverfront	R	ICW	2001-08-19	1115	S	2	4	PAVED	4 FT
4	4	0101000020BC080...	Hacienda Del Rio	PR	ICW	2001-08-21	1515	S	1	1	DIRT	2 FT 6
5	5	0101000020BC080...	Harbor Point Ramp	PR	ICW	2001-08-17	1545	O	1	1	PAVED	UNKN
6	6	0101000020BC080...	Highbridge Park	R	ICW	2001-08-16	1500	S	1	2	PAVED	4 FT
7	7	0101000020BC080...	Kennedy Mem. Park	R	ICW	2001-08-23	1555	S	1	6	PAVED	4 FT 4
8	8	0101000020BC080...	Highland Remote Ramp	R	SJR	2001-08-31	1020	S	1	1	DIRT	1 FT
9	9	0101000020BC080...	Lake Monroe Park	R	SJR	2001-09-07	1130	S	2	4	PAVED	7 FT
10	10	0101000020BC080...	Lake Monroe Wayside	R	SJR	2001-09-07	1105	S	1	2	PAVED	7 FT 1
11	11	0101000020BC080...	Lemon Bluff Ramp	R	SJR	2001-09-20	1300	S	1	2	DIRT	2 FT
12	12	0101000020BC080...	Mariner's Cove Park	R	SJR	2001-09-07	1200	S	1	1	PAVED	4 FT 1
13	13	0101000020BC080...	Mullet Lake Park	R	SJR	2001-09-20	0	[null]	0	0	[null]	[null]

Create a new table in PGAdmin to import the distance data

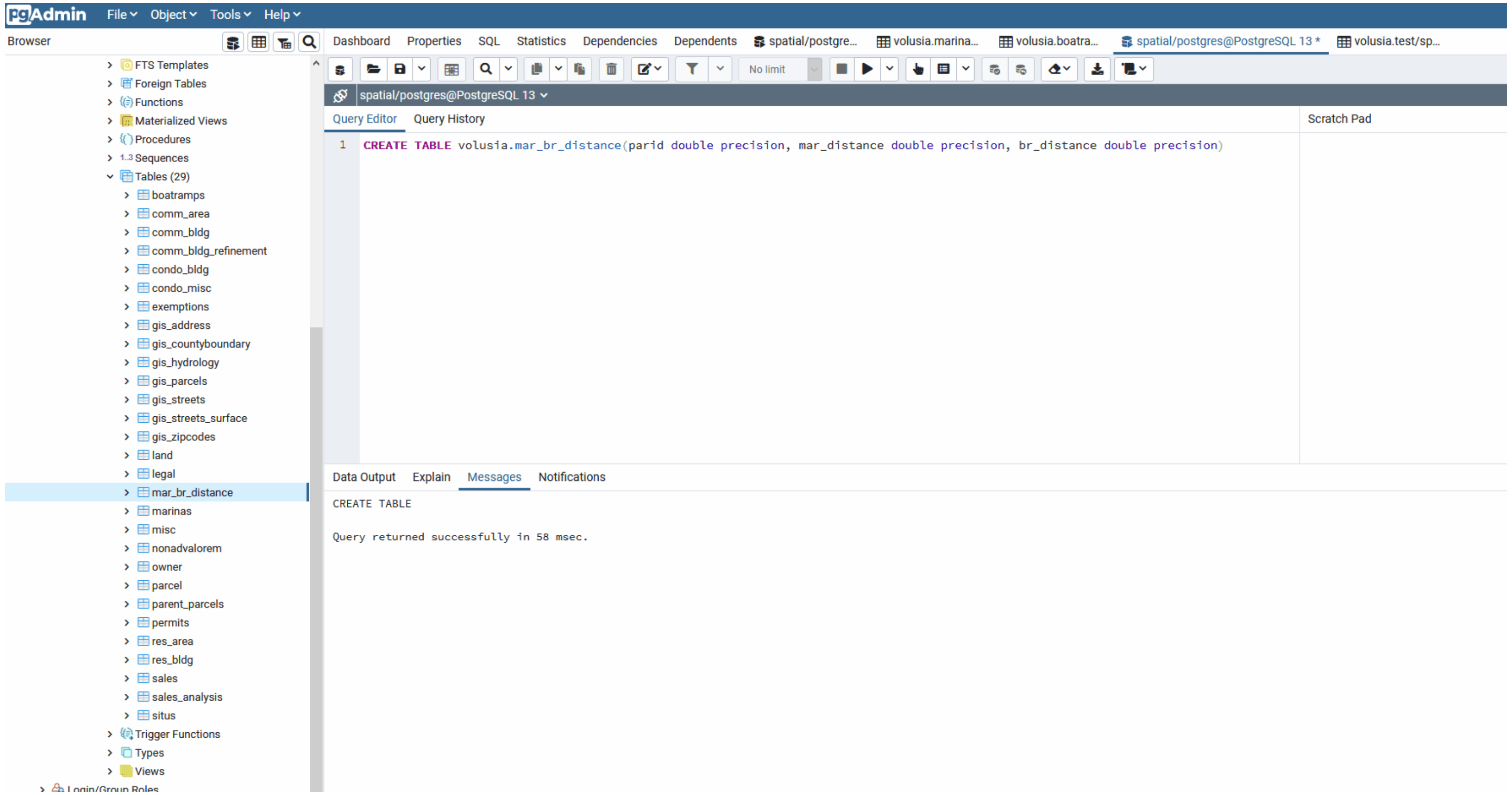
- Create a new table using the below command in PGAdmin using the query tool; this table will be used to import the data into the other tables



```
CREATE TABLE volusia.mar_br_distance(parid double precision, mar_distance double precision, br_distance double precision)
```

Import the data into the newly created table

- Right click on the new table and select Import/Export
  - Make sure Import is selected
  - Choose the “marina_and_boatramp_distances.csv” file for the filename
  - The format is csv
  - Under Miscellaneous, select YES for header
  - Select OK and the data will be imported into the table
    - Verify this is the case by viewing at least the first 100 rows of the table



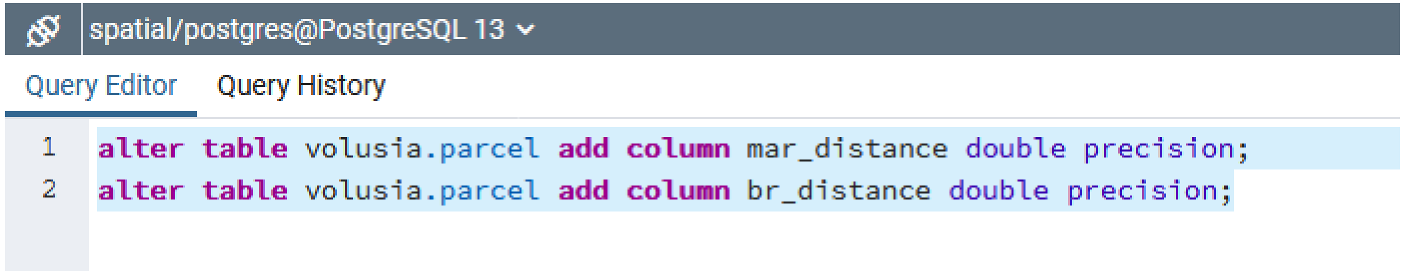
```
CREATE TABLE volusia.mar_br_distance(parid double precision, mar_distance double precision, br_distance double precision)
```

```
CREATE TABLE

Query returned successfully in 58 msec.
```

Prepare the desired table for data insertion

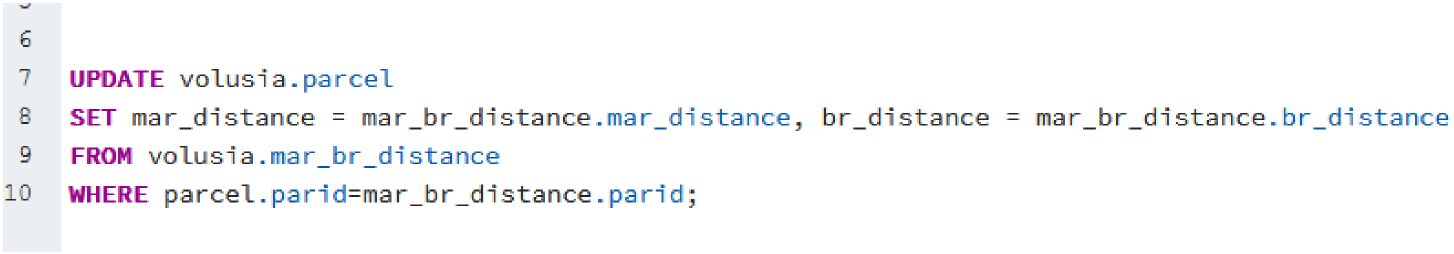
- You can now begin the processing of merging the data into any other table such as the volusia.parcel table.
- First alter the desired table to add the new columns for the distance data:
  - mar_distance
  - br_distance



```
alter table volusia.parcel add column mar_distance double precision;
alter table volusia.parcel add column br_distance double precision;
```

Merge the data into the desired tables

- You can now merge the data into the volusia.parcel table by using the below command:

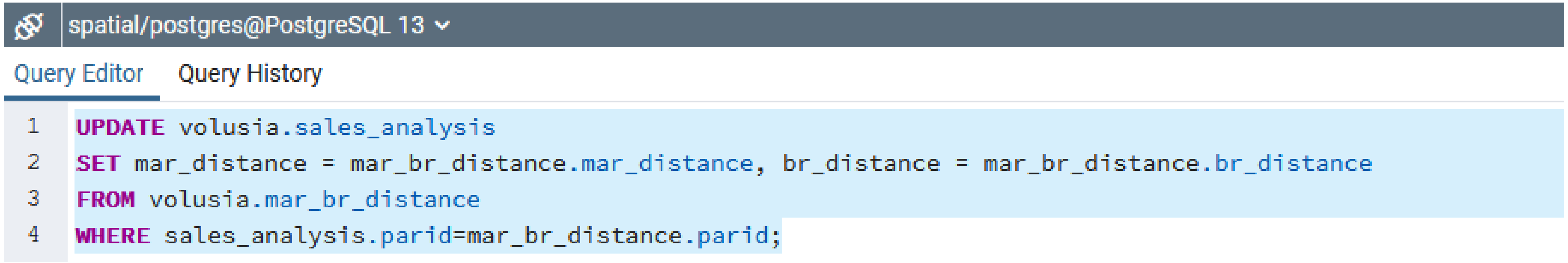


```
UPDATE volusia.parcel
SET mar_distance = mar_br_distance.mar_distance, br_distance = mar_br_distance.br_distance
FROM volusia.mar_br_distance
WHERE parcel.parid=mar_br_distance.parid;
```

- After doing that, once again check that the table has been updated correctly

Wrapping up

- At this point, the volusia.parcel table should now contain the distance data a parcel is to the closest Marina and Boat Ramp in miles.
- You can also add the data to the volusia.sales_analysis table by adding the necessary columns (mar_distance, br_distance) and running the below query



```
UPDATE volusia.sales_analysis
SET mar_distance = mar_br_distance.mar_distance, br_distance = mar_br_distance.br_distance
FROM volusia.mar_br_distance
WHERE sales_analysis.parid=mar_br_distance.parid;
```

- To verify all the distances have been placed correctly, you can measure the distance a parcel is from the nearest marina or boat ramp in QGIS using the distance tool