Visualize Db2 spatial data with QGIS oper GIS

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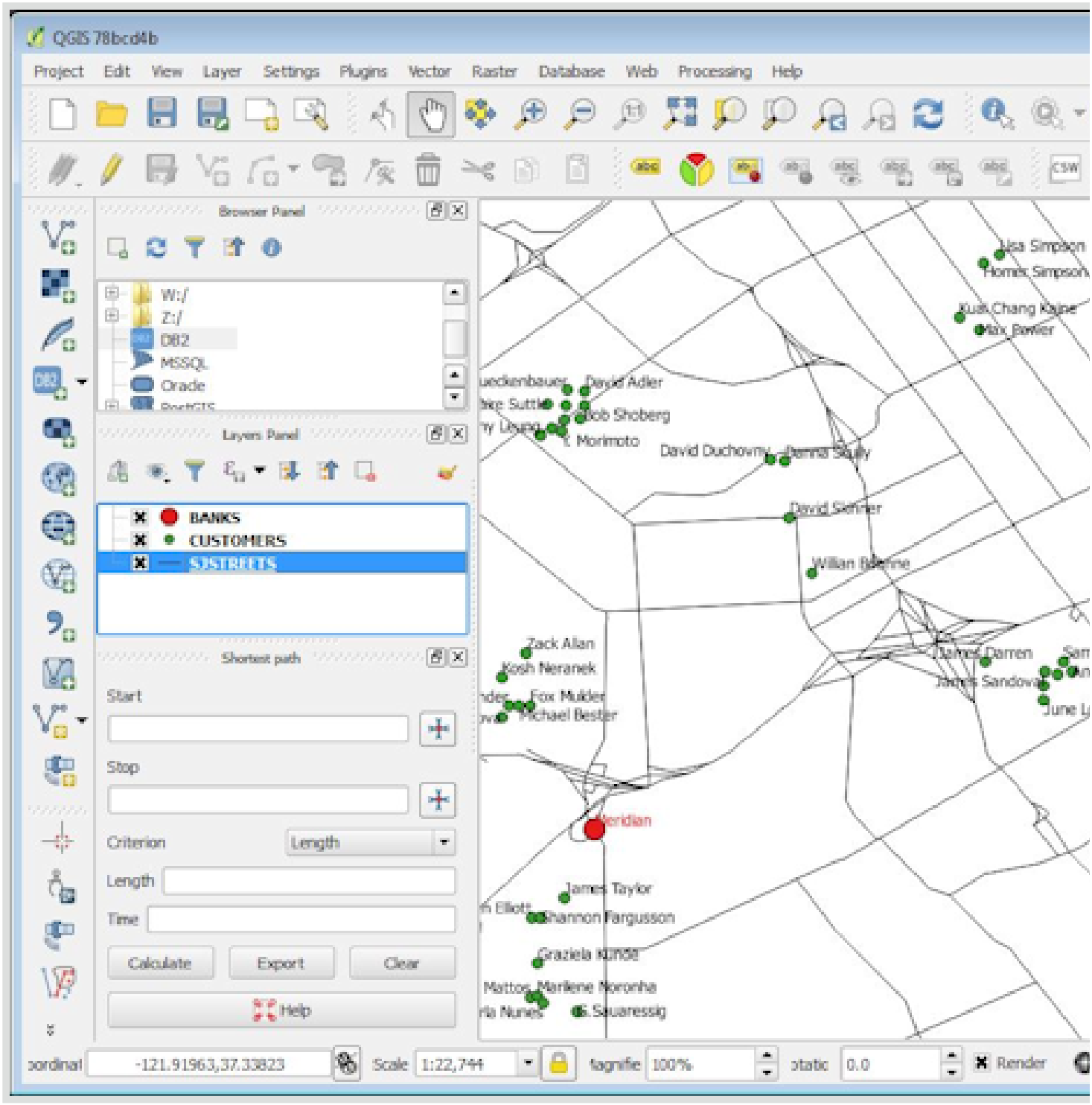

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Overview

Skill Level: Any Skill Level

Experience using SQL and Db2 is helpful

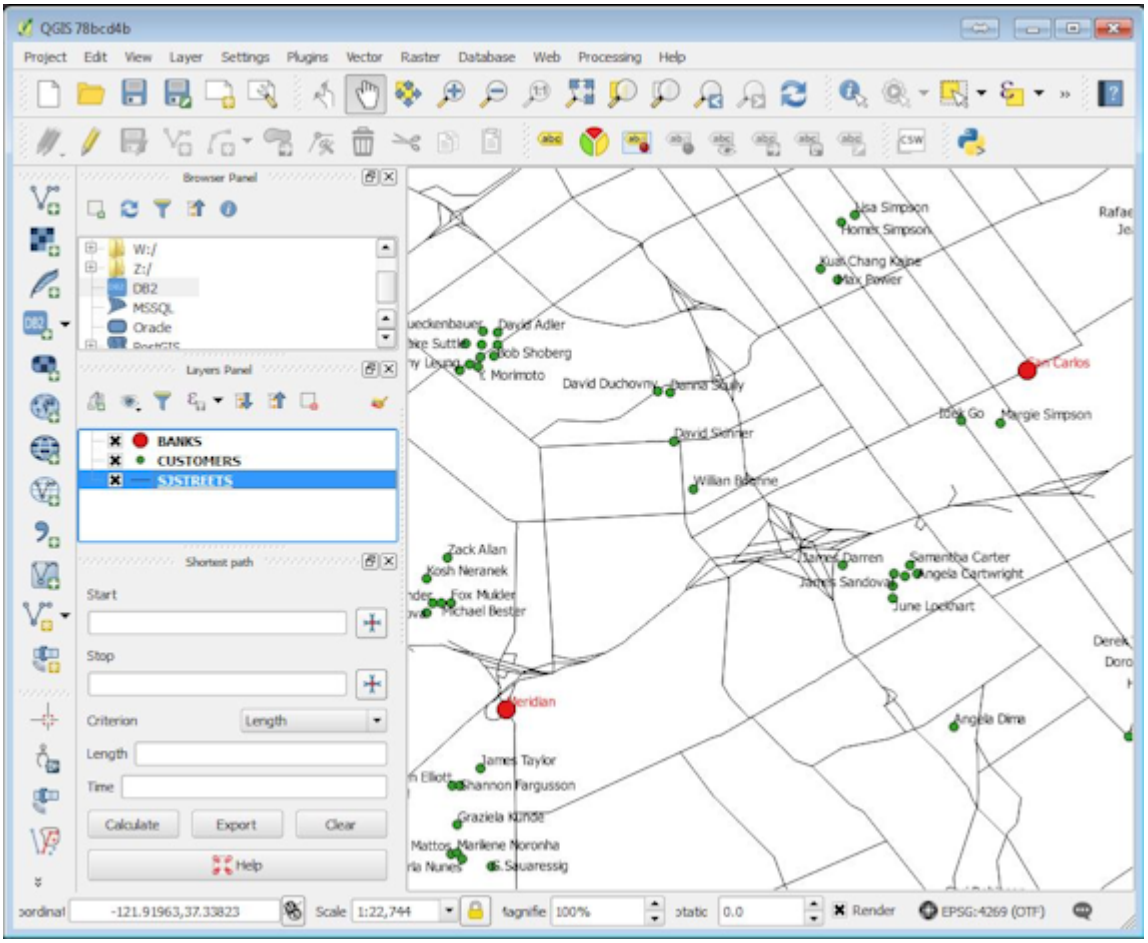
QGIS is a full-function GIS tool for displaying and analyzing spatial data.

This recipe takes you through the steps to load spatial data into a Db2 database, connect QGIS to D spatial tables.

Ingredients

- Db2 client and server (Db2 client & server download)
- QGIS 3.16 (download)
- Sample data (download)
- Db2 spatial documentation as appropriate for your environment:
  - Db2 for z/OS Knowledge Center
  - Db2 LUW Knowledge Center

With this recipe you will create a map of San Jose streets, two bank branches and a number of sample like the following screen capture from QGIS. The current QGIS support for Db2 is only the Windows en



Step-by-step

1 Setup DB2 and sample data

1. Note: this recipe uses the database name **OSTEST** and the database connection userid **OS** values in the examples to your database name and userid.
2. Download and unzip the sample data to a convenient directory.
3. Open a DB2 command window where you can execute SQL statements. If you are using a sure it is cataloged locally. You can use the scripts **catalog-luw.sql** or **catalog-zos.sql** as a changes for the remote server location.
   You can execute the script with a command like:
   db2 -tvf catalog-zos.sql

4. Import sample spatial for banks, customers and San Jose streets.
   – Modify the scripts **import-luw.sql** or **import-zos.sql** as appropriate to change the userid

procedure. (The scripts contain descriptions of each of the steps and any modifications ne
– Execute the script with a command like:
db2 -tvf import-zos.sql
– Check that there were no processing errors

5. Verify the imported data with the SQL statement (change "**osuser**" to your connection use
db2 select name, street, varchar(db2gse.st_astext(geom),32) from osuser.banks
which should return the name, street address and location of the **Meridian** and **San Carlos**

2 Install and setup QGIS

This example uses QGIS on Microsoft Windows to connect to a remote DB2 for z/OS database.

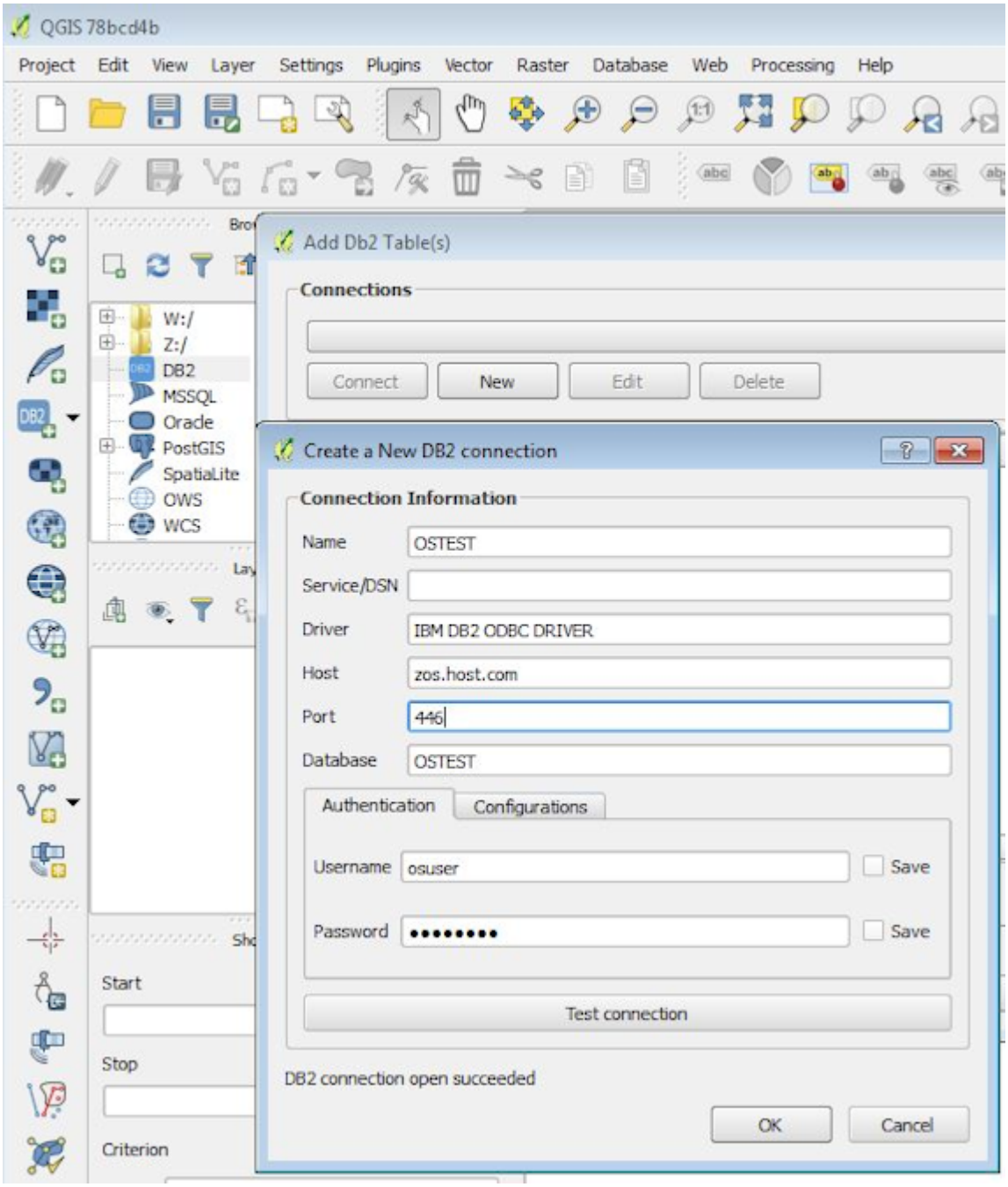
1. Download and install QGIS using the instructions at the download link in the **Ingredients** s
2. In order to use QGIS with DB2, there is a manual installation step to ensure the Db2 code PATH. Create a file with the name db2.bat which contains the lines:

```
REM Uncomment line below for Windows 32-bit
REM SET gskpath=C:\Program Files (x86)\ibm\gsk8\lib
REM Uncomment line below for Windows 64-bit
REM SET gskpath=C:\Program Files\ibm\gsk8\lib64
SET Path=%db2path%\BIN;%db2path%\FUNCTION;%gskpath%;%path%
```

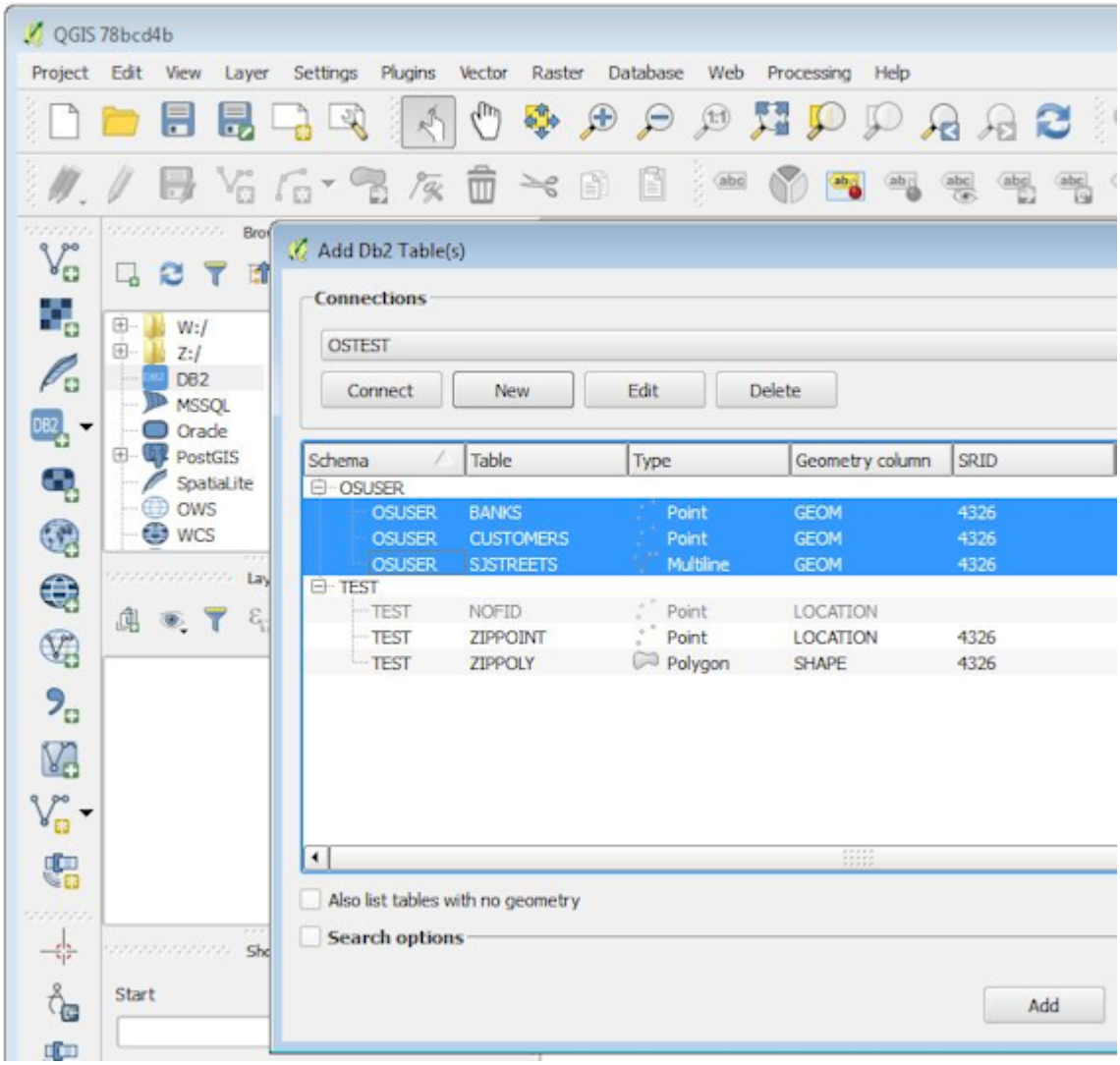
   Put this file in the \\etc\\ini subdirectory under the QGIS installation directory.

3. Start QGIS Desktop from the Windows Start menu.
4. There are several ways to add the Db2 connection but the easiest is the menu bar; select **L**
Add DB2 Spatial Layer... and click **New**. Choose a "Name" that is meaningful, like the data
"Driver" should generally be "IBM DB2 ODBC DRIVER". Fill in the "Host", "Port", "Databas
"Password" to connect to your system. The **Test connection** button can be used to verify t
connection parameters.
   The **Save** check boxes can be used to save the Username and Password values for subseq
this can pose a security risk as they are stored in plain text. If you don't save these values,
them when you connect to the database.

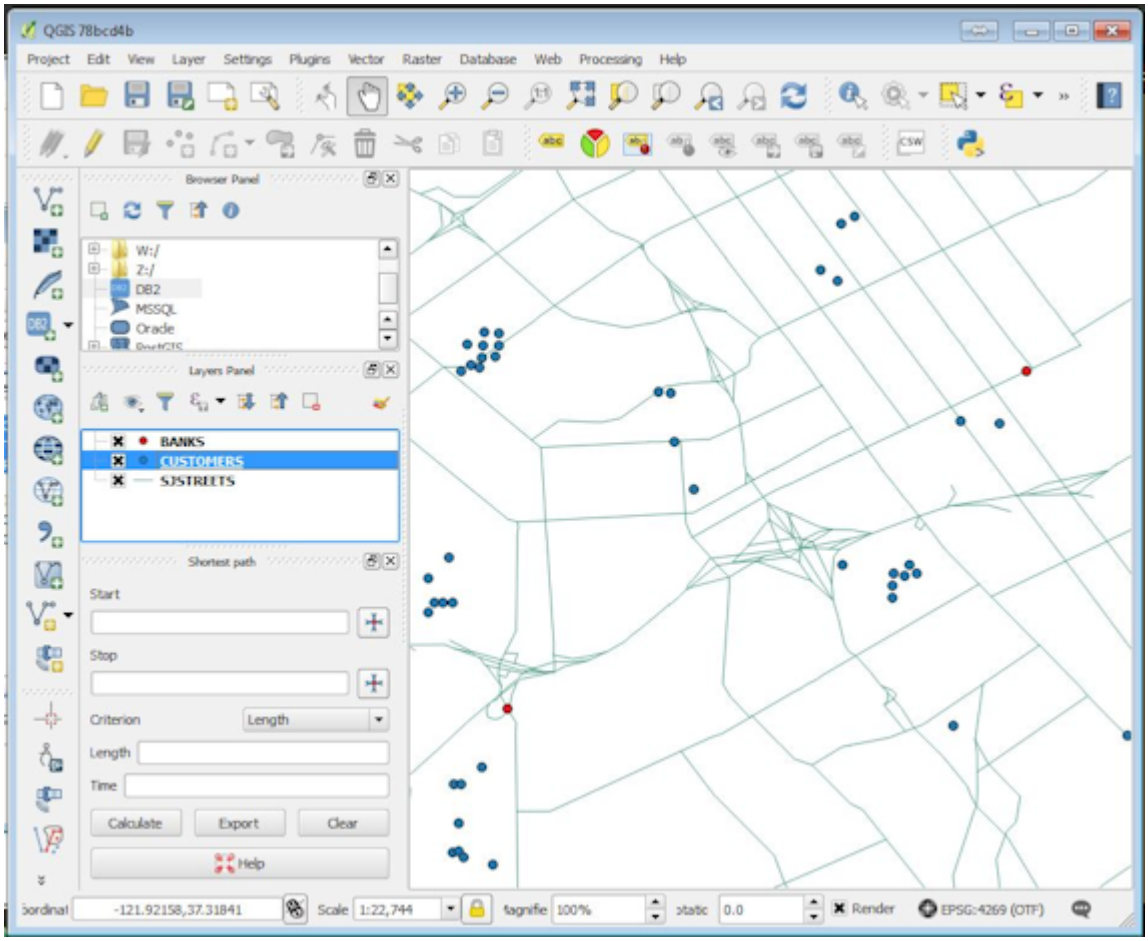
   Click **OK** to save the connection information.



5. Click “Connect” to display the list of spatial tables in Db2 as shown below. Multiple tables clicking on the rows and then click **Add** to add and display the map.



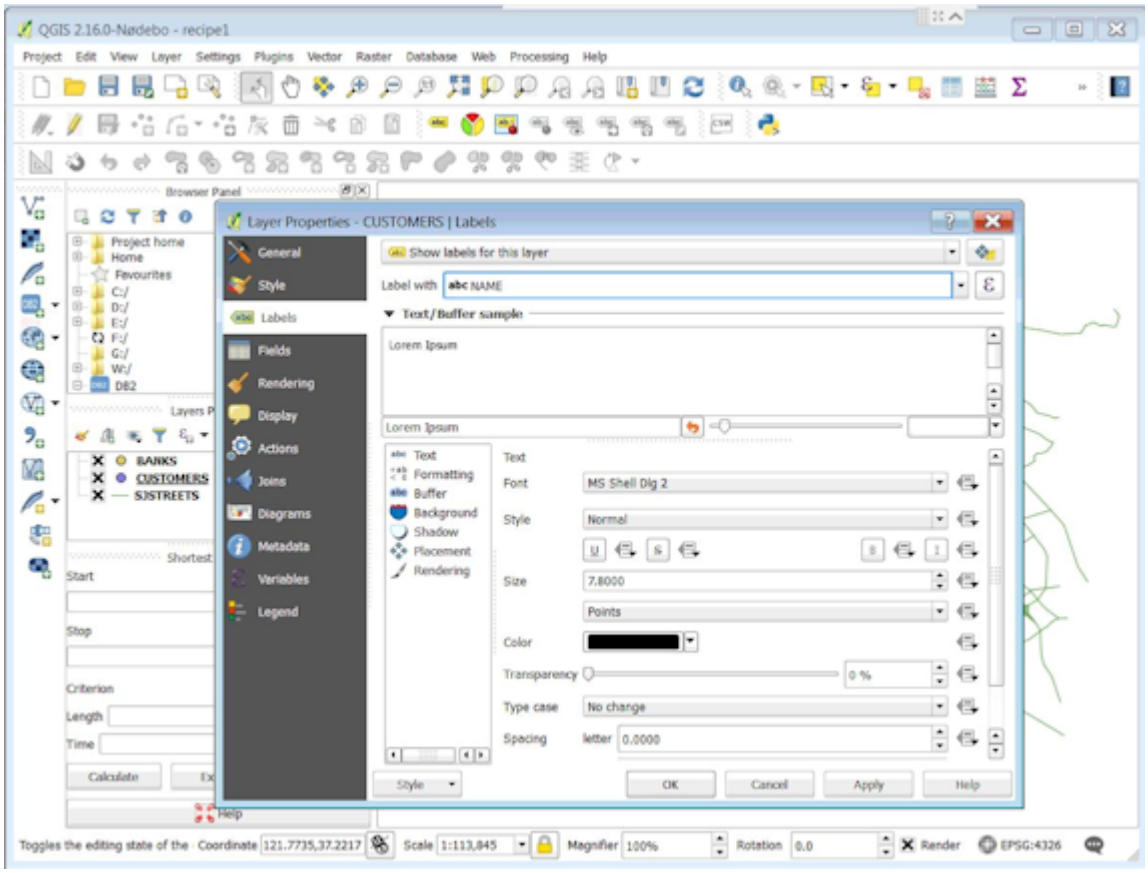
6. Initial map display



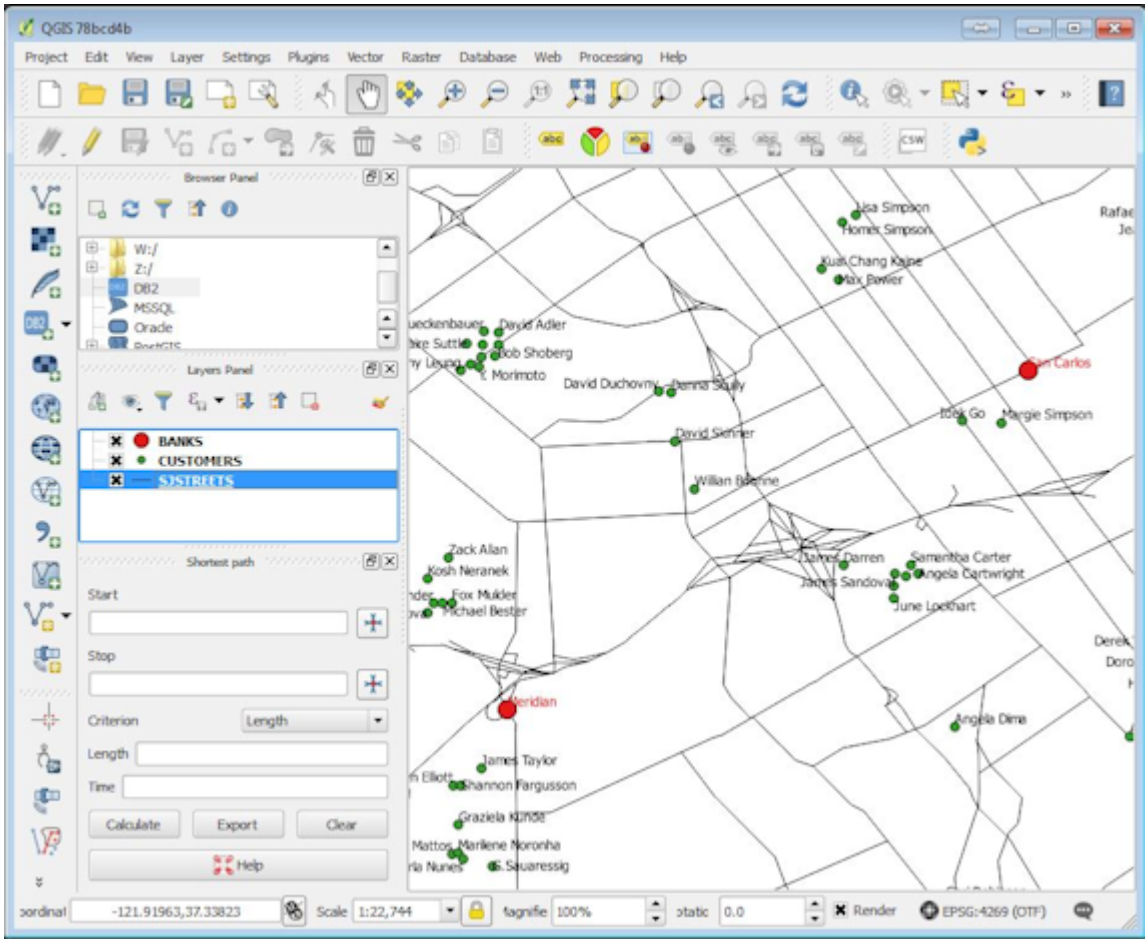
3 Customize the map display

QGIS allows you to customize the style for symbols, color and labels based on table attributes

1. To change the style of a layer, right-click on the layer name and select Properties. This will the following where you can change aspects of the style such as the symbol to be displaye labels to be associated with each feature. Make your changes and click **OK**.



2. This is an example of the map after adding labels to the customers, banks and streets and associated with customers and banks.

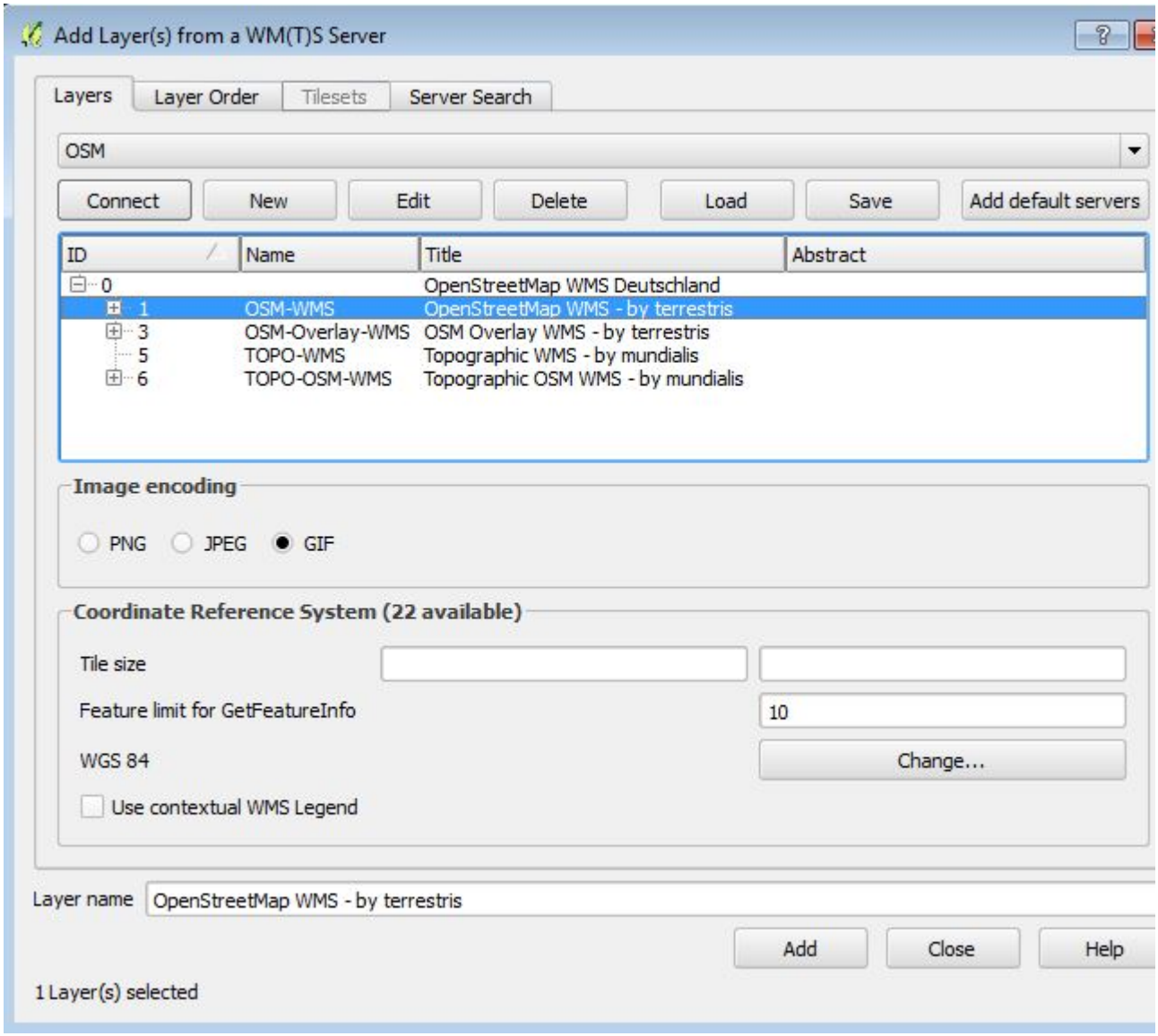


4 Integrate a web base map

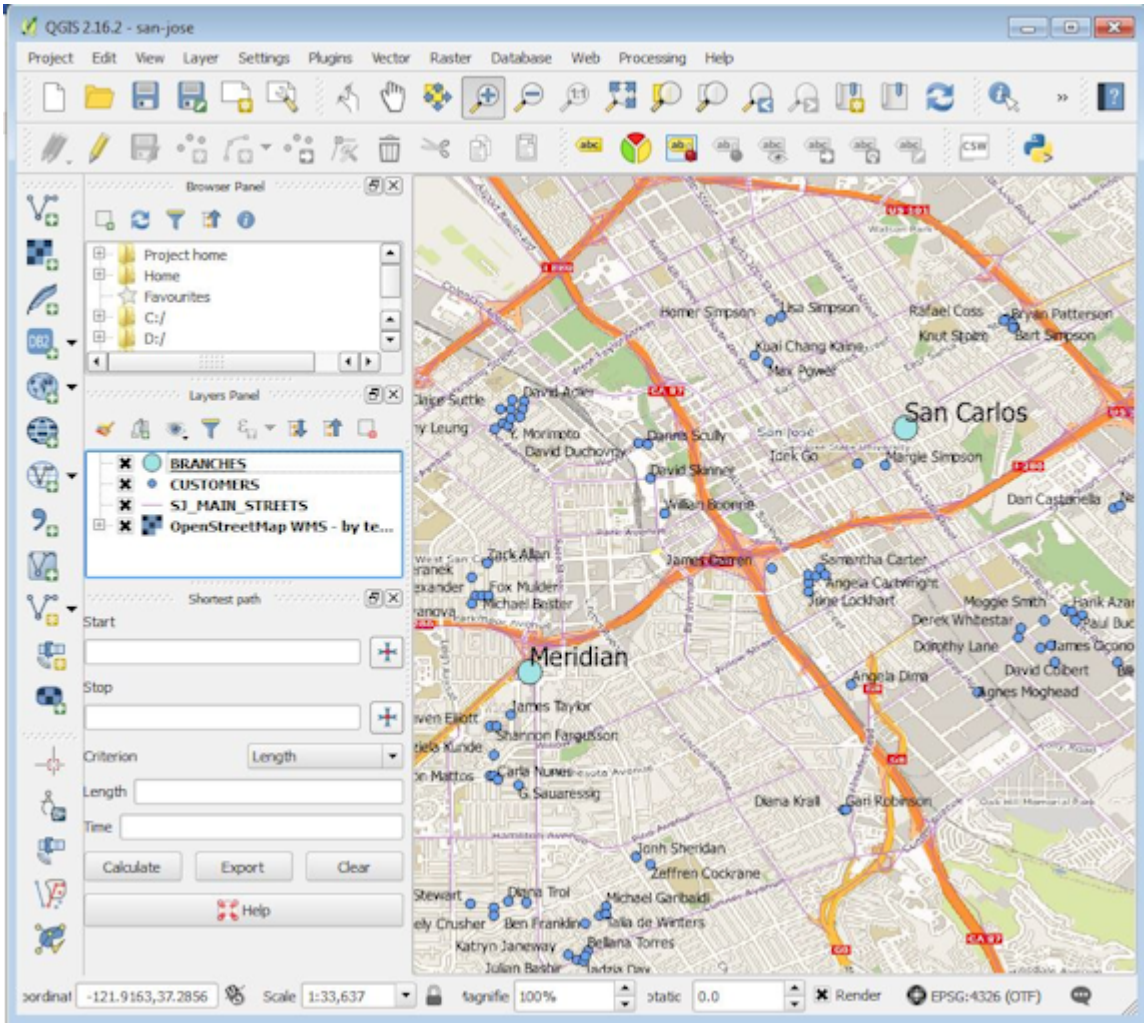
A more attractive representation can be produced by incorporating a base map from a Web Ma step, you will integrate a base map using the Open Street Map data and hosted by **ows.terrest**

1. From the menu bar, select **Layer -> Add Layer -> Add WMS/WMTS Layer...** and click **New.**
2. In the **Connection details** section, enter **http://ows.terrestris.de/osm/service** and click **O**

3. Select the **OSM-WMS** entry and click **Add**.



4. This will re-display your data with a nice base map background. Make sure that OpenStree layer listed – drag it down to reposition it if necessary.



5 Conclusion

With QGIS you can integrate spatial data from many different sources – other databases, files QGIS to gain insight into spatial relationships of your data.

The current map state can be saved as a project for subsequent use and also printed or export

You may also find these tutorials on Developer Works useful:

- Manage spatial data with IBM DB2 Spatial Extender, Part 1 – Acquiring spatial data and de
- Manage spatial data with IBM DB2 Spatial Extender, Part 2 – Implementing typical spatial

TAGS DASHDB, DB2, GEOSPATIAL, GIS, QGIS, SPATIAL

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