

## **Second Milestone Part 1 Report**

### **Course Information:**

Course code : CSE 6331  
Course Section : 002  
Course Name : Adv topics in Database systems  
Course focus : Spatial, Temporal and spatial-temporal databases

### **Project Team Information:**

Team member 1 : Sai Venkata Krishnaveni, Devarakonda  
Team member 2 : Kumar, Niraj

## Description:

The requirement of this milestone is to display the maps of different areas by using GIS visualization tools (QGIS). The pre-requisites to display the maps is to install QGIS and load the database (contains the shape files of all tables) on to the QGIS. Once the pre-requisites are fulfilled then follow specific steps mentioned in this document which are required by the query to display the maps with specific areas mentioned in query.

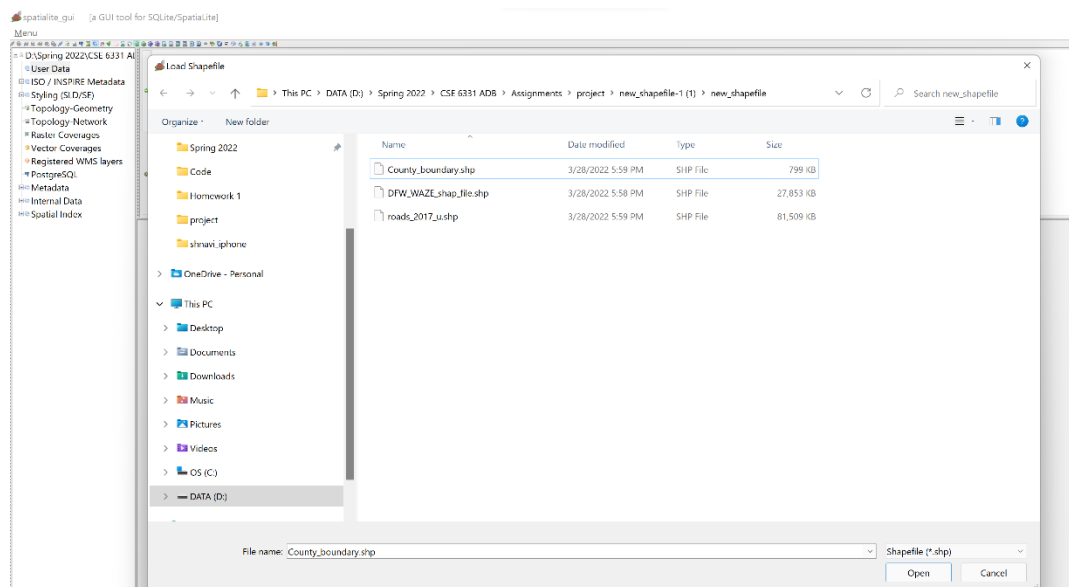
## Pre-requisite steps:

- i) Add county\_boundary, dfw\_waze\_shap\_file and roads\_2017\_u Shapefile in Spatialite gui using steps below

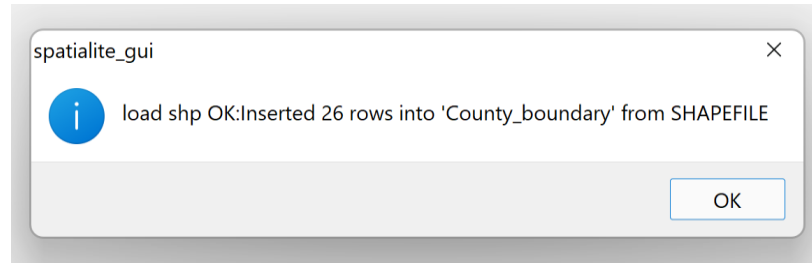
- a. Open spatial GUI app



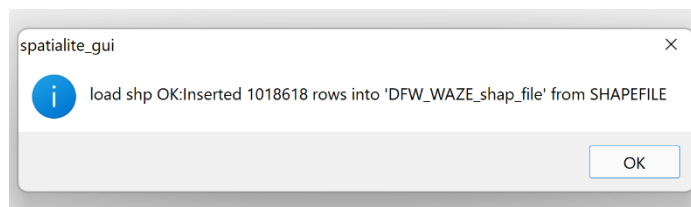
- b. Click on Load Shapefile icon located on the top



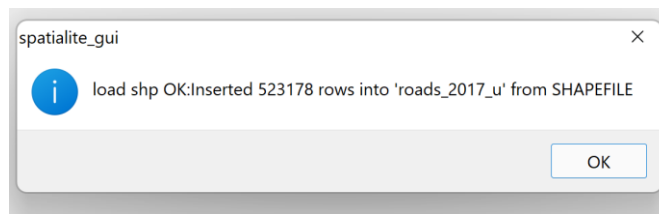
- c. Select the shape file to be uploaded
  - i. For county\_boundary shape file:



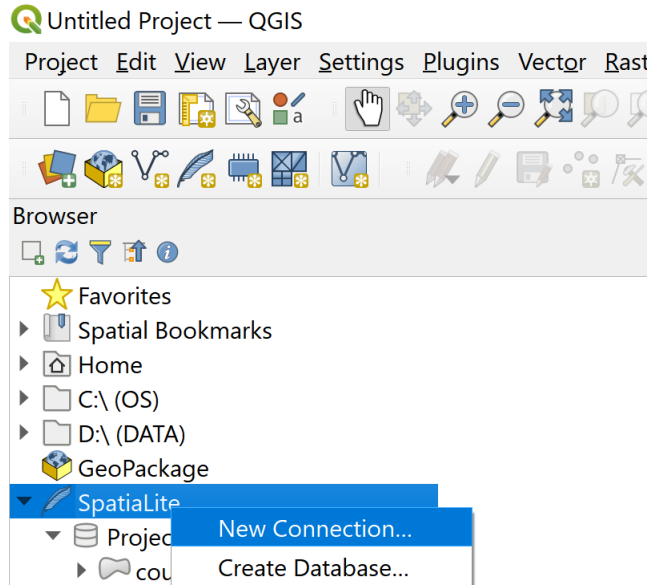
ii. For DFW\_WAZE\_shap\_file shape file:



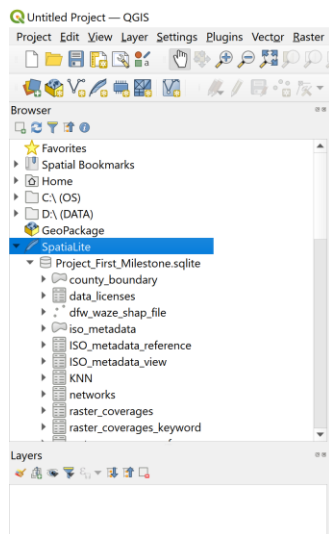
iii. For roads\_2017\_u shape file:



ii) Connect spatialite database with QGIS using New Connection



iii) Select the spatialite database location and click open. The Spatialite Database will be loaded on the QGIS as shown below

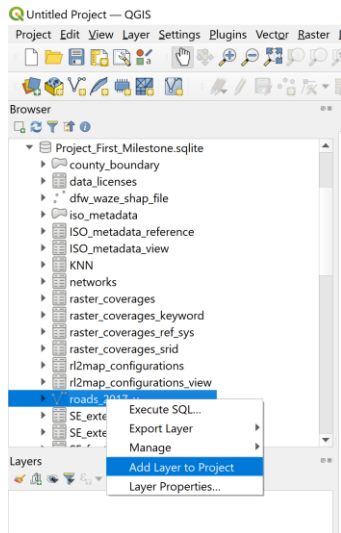


## Questions and queries for the second milestone:

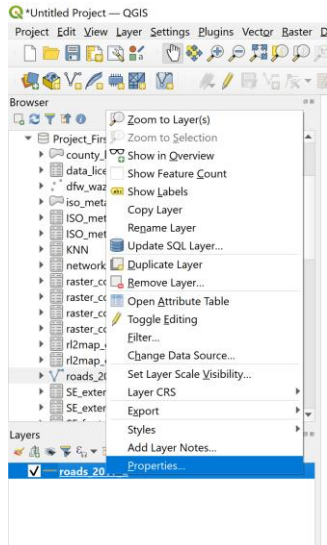
1. Display the roads that are located in Collin county in Red color and in Tarrant county in Black color and in Dallas County in Blue color. The rest of the counties, display the roads in Yellow color. The example below shows Tarrant roads in red and Dallas roads in black – your query is slightly different.

Steps:

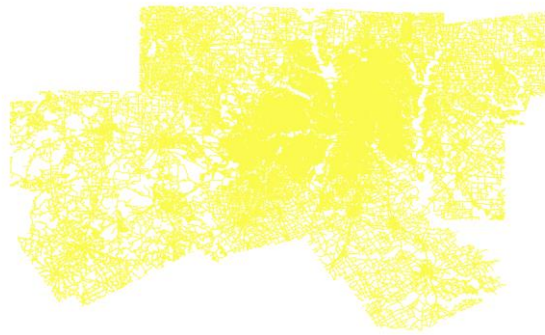
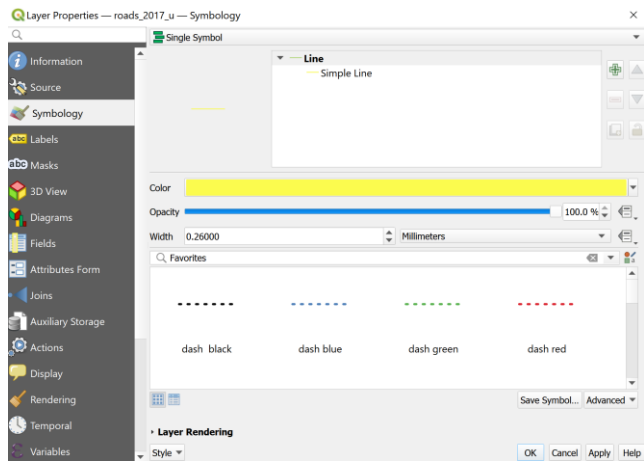
- i) Add roads\_2017\_u layer



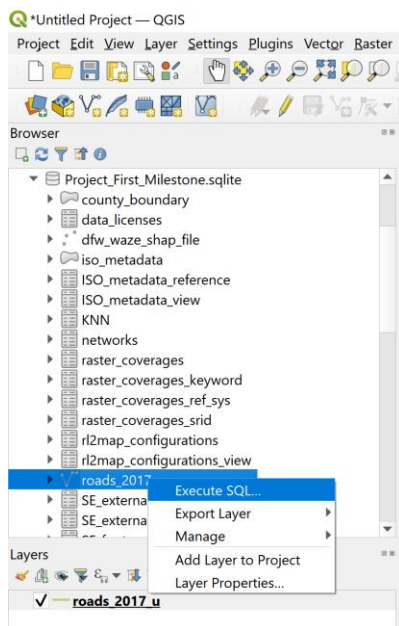
- ii) Right click on roads\_2017\_u and select properties



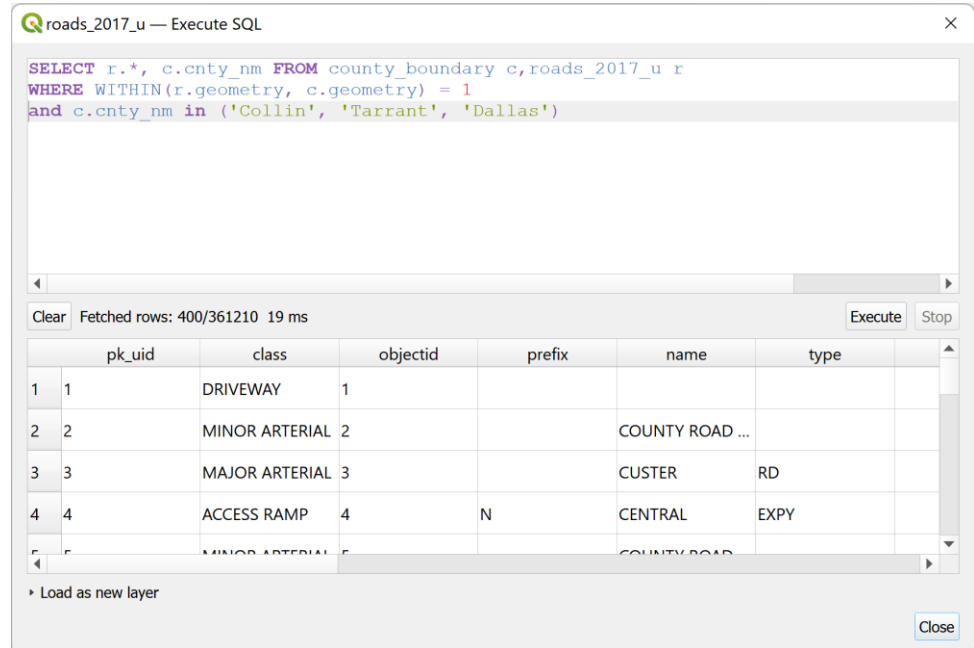
- iii) Choose Symbology and select color option as yellow → click on Apply → click on OK



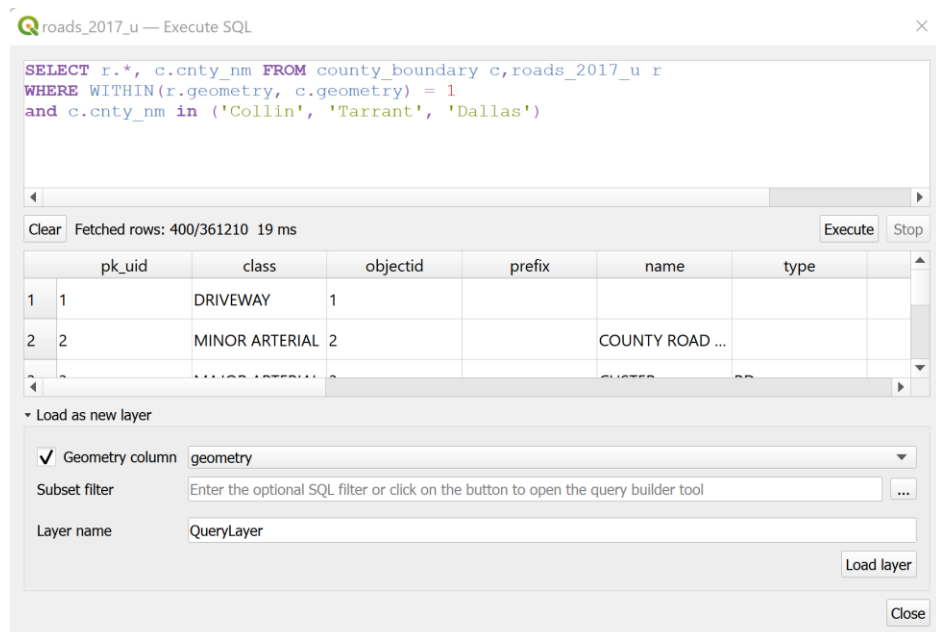
iv) Right click on roads\_2017\_u and select Execute SQL

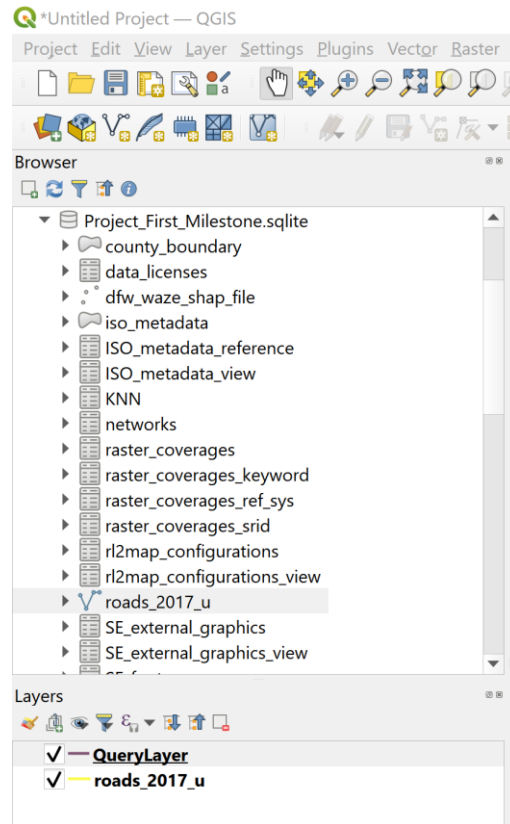


- v) Execute the query below:  
SELECT r.\*, c.cnty\_nm FROM county\_boundary c,roads\_2017\_u r  
WHERE WITHIN(r.geometry, c.geometry) = 1 and c.cnty\_nm in ('Collin',  
'Tarrant', 'Dallas')

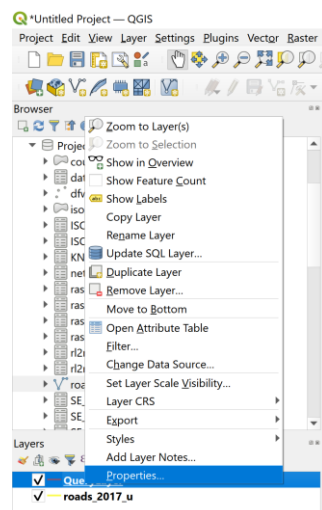


- vi) Click on Load as new layer and select 'Geometry column' check box and enter Layer name as 'QueryLayer'



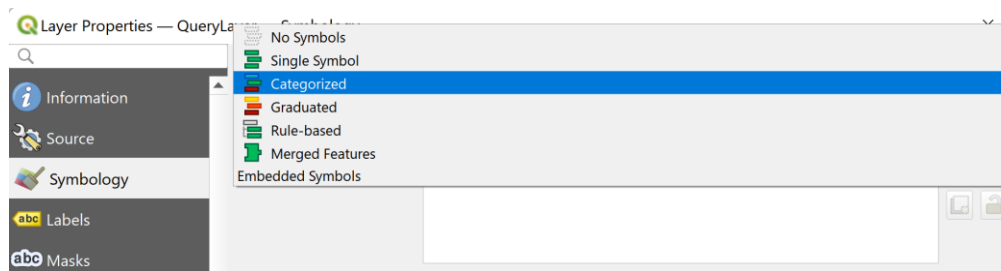


vii) Right click on QueryLayer → Click on Properties

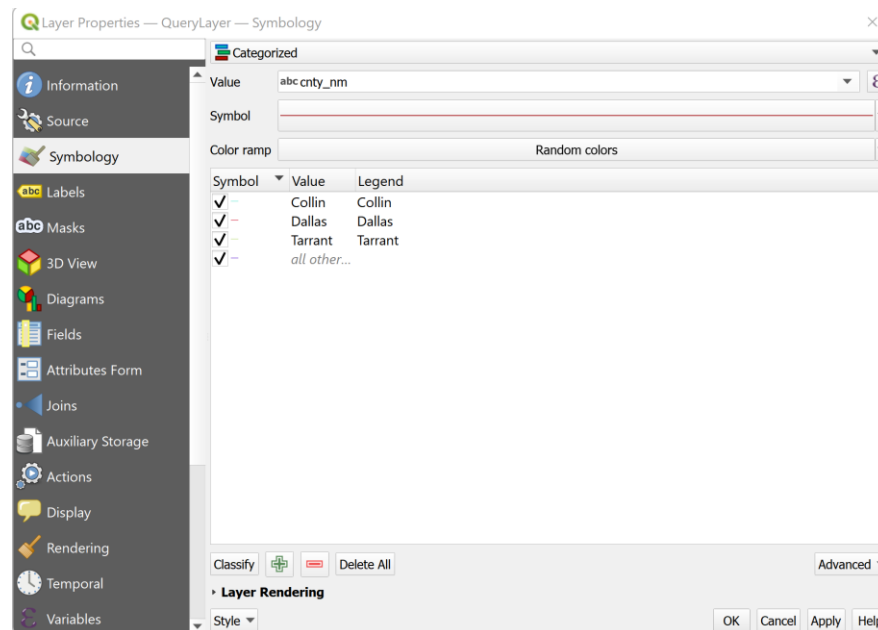


viii) Select Symbology → Select Categorized as shown below

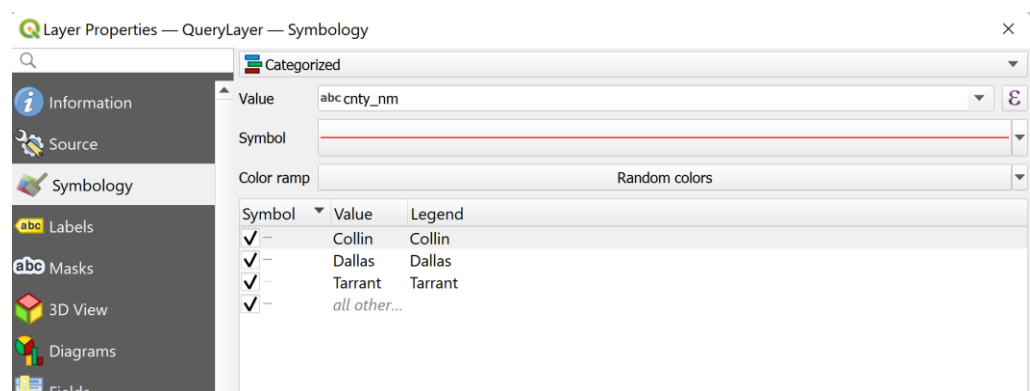




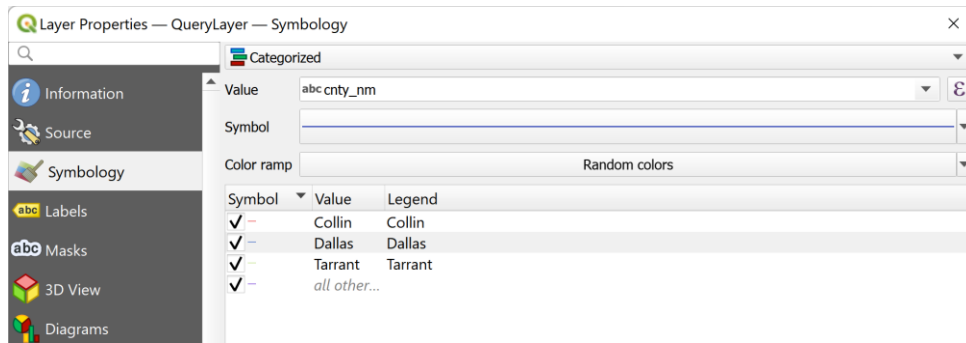
ix) Select Value as cnty\_nm → click on Classify in left bottom of the panel



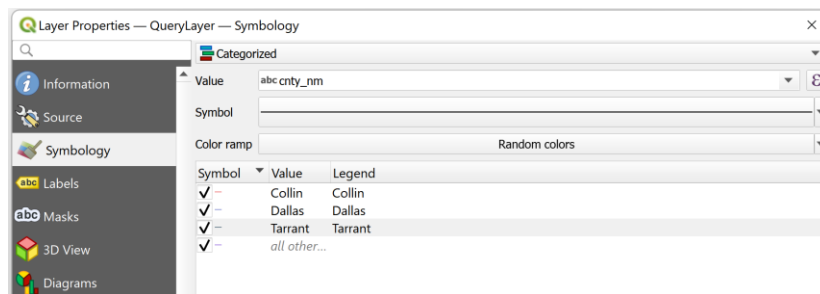
x) Select 'Collin' value and change symbol color to 'Red'



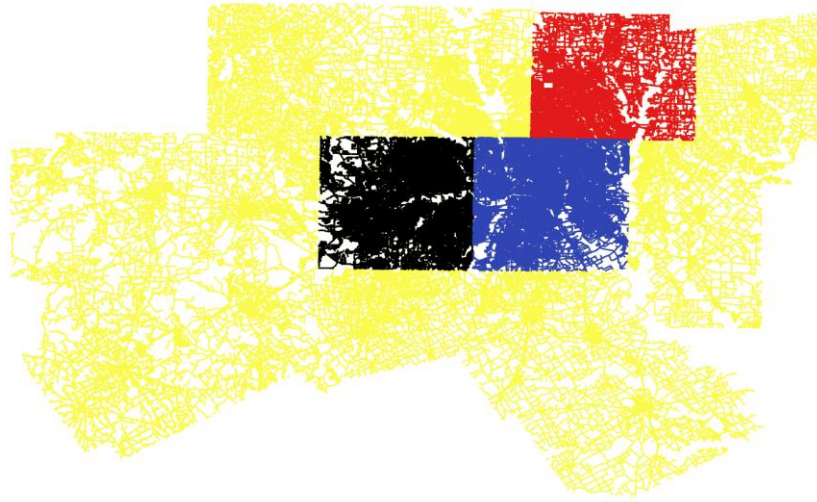
xi) Select 'Dallas' value and change symbol color to 'Blue'



xii) Select 'Tarrant' value and change symbol color to 'Black'



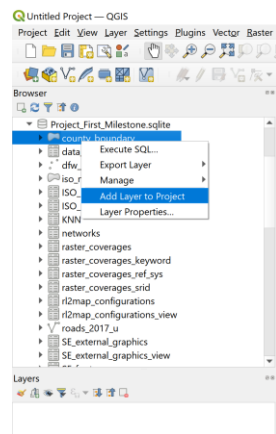
xiii) Click on Apply → Click on Ok



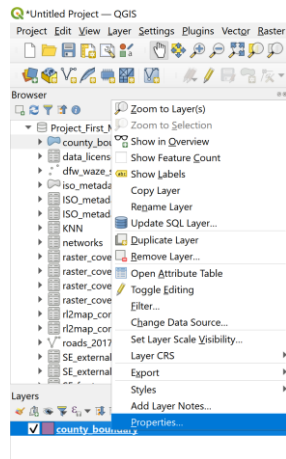
2. Display the roads that are in the class: 'PRIMARY HIGHWAY' in black with the county in the background. Here they are shown in green.

### Steps:

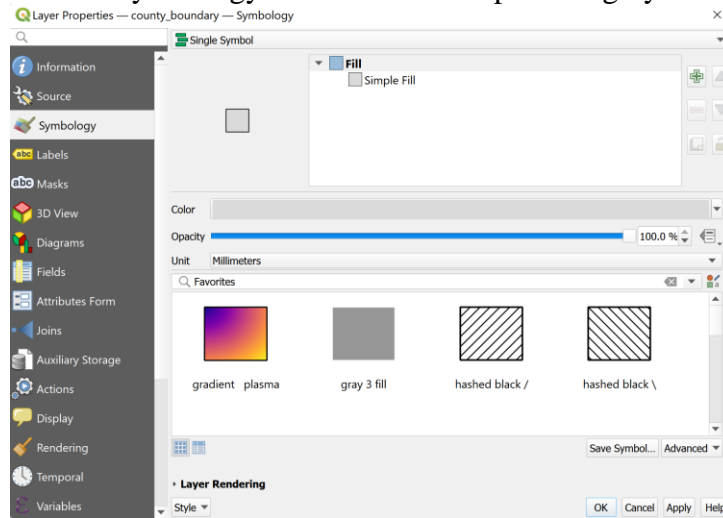
#### I. Add County\_boundary layer



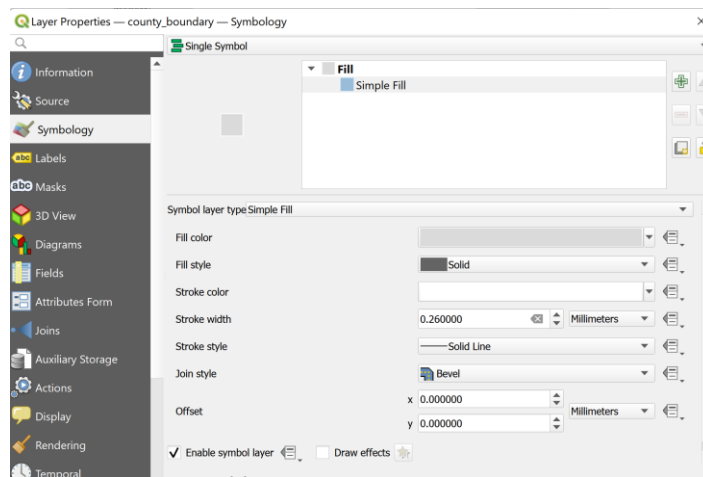
#### II. Right click on county\_boundary layer and select properties



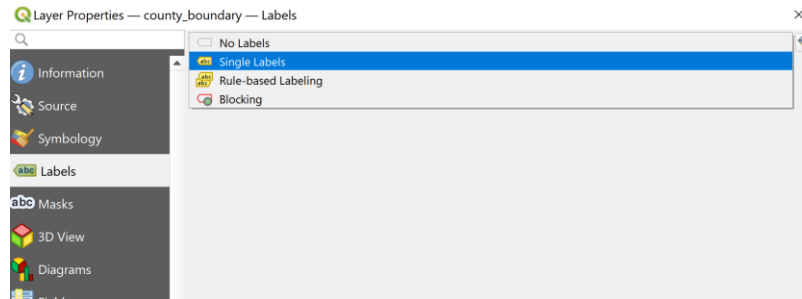
### III. Choose Symbology and select color option as gray



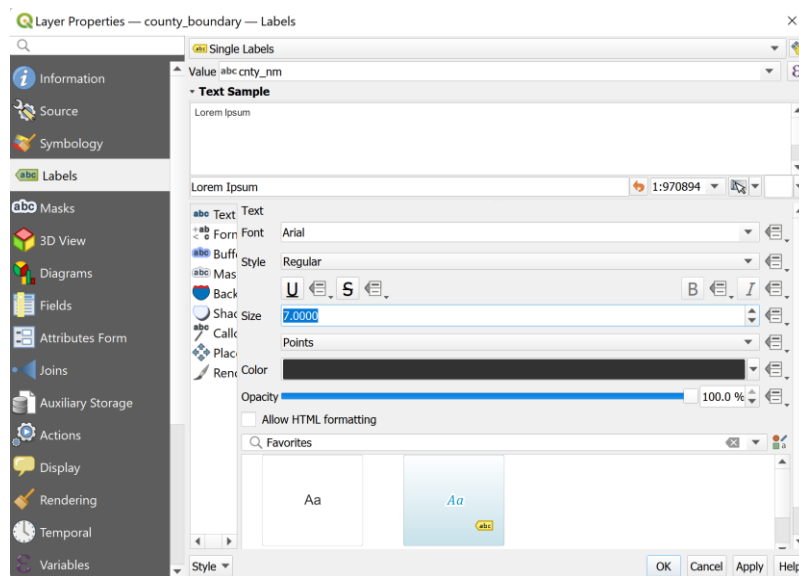
### IV. Select simple Fill → select stroke color as 'White'



V. Choose labels and select ‘single labels’ from dropdown

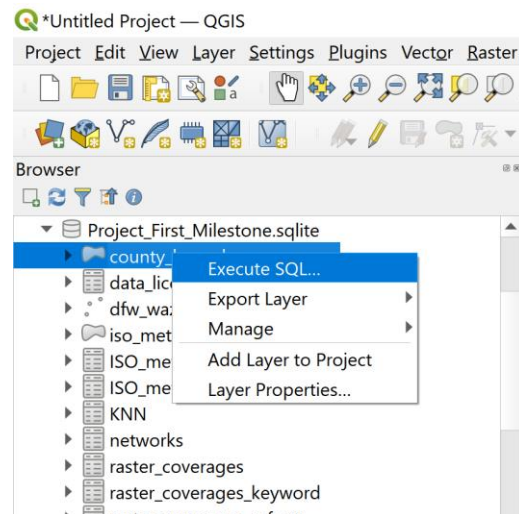


VI. Select value as 'cnty\_nm' and size as 7.0000



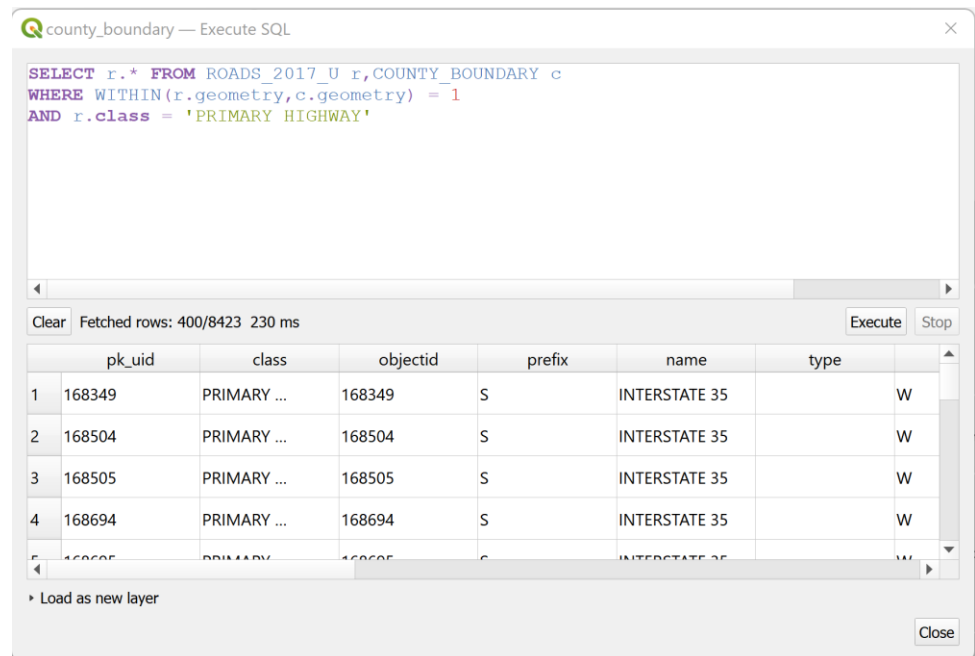
VII. Click on Apply → click on ok

VIII. Right click on county\_boundary and select Execute SQL

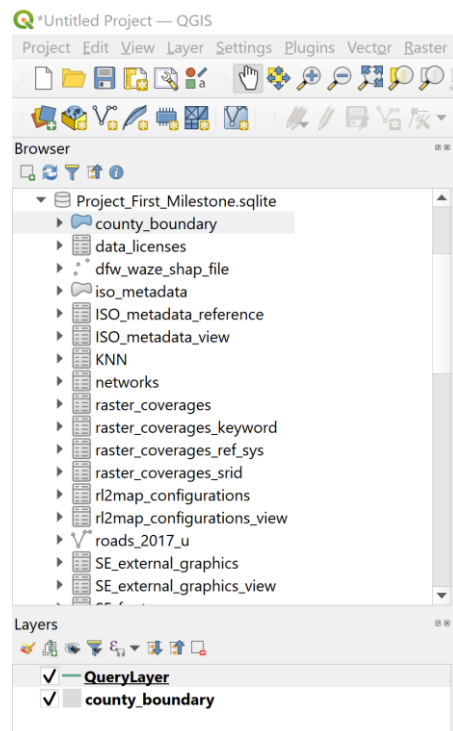
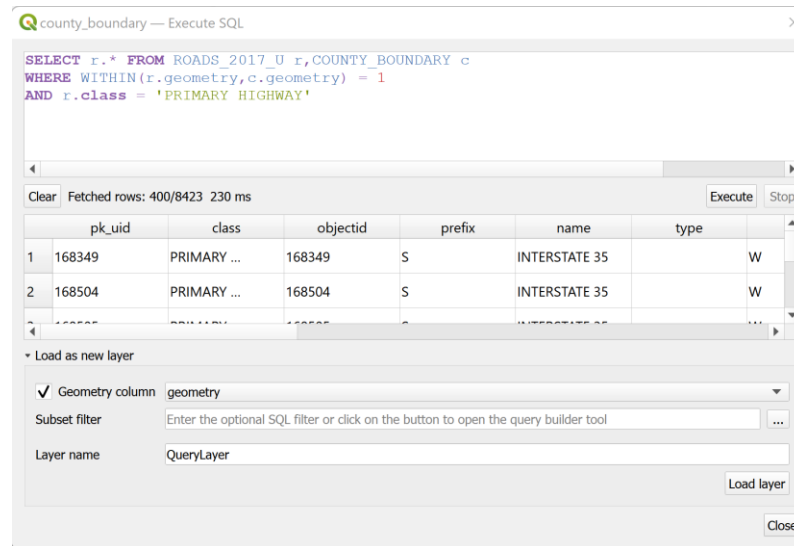


IX. Execute the query below:

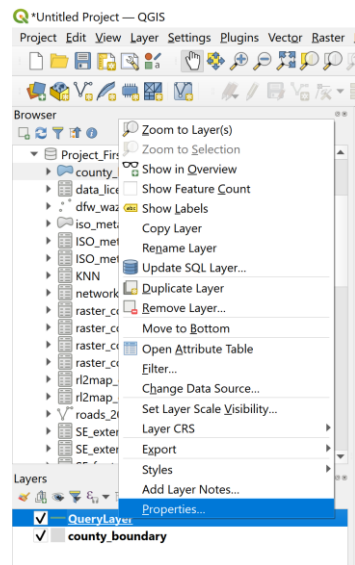
```
SELECT r.* FROM ROADS_2017_U r,COUNTY_BOUNDARY c
WHERE WITHIN(r.geometry,c.geometry) = 1
AND r.class = 'PRIMARY HIGHWAY'
```



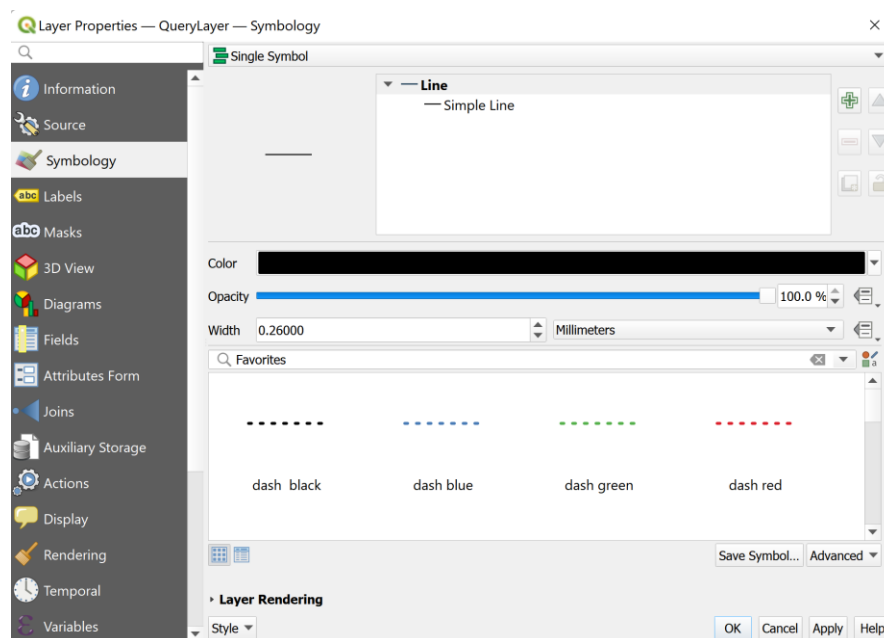
- X. Click on Load as new layer and select 'Geometry column' check box and enter Layer name as 'QueryLayer'



xiv) Right click on QueryLayer → Click on Properties



xv) Select Symbology and change color to black





xvi) Click on Apply → Click on Ok

