SGD LAB EXP - 2

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Aim:

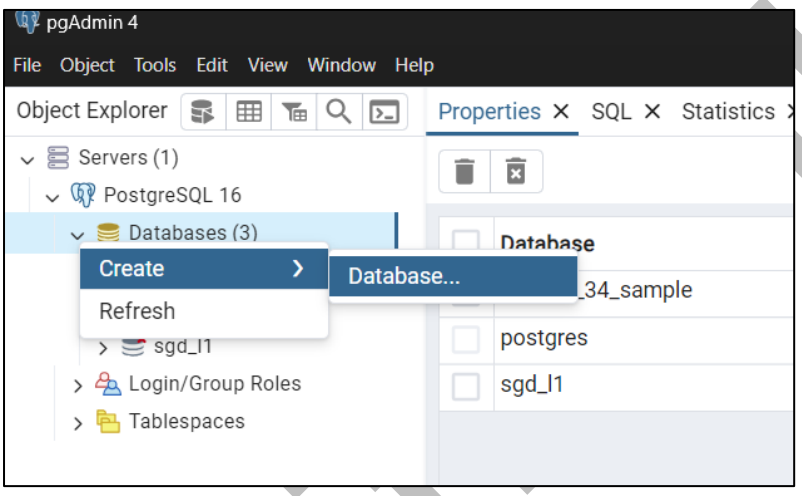
A. *Create a new Schema*
B. *Load data from a shapefile*
C. *Load data from CSV*
D. *Load data using COPY command*

Implementation :

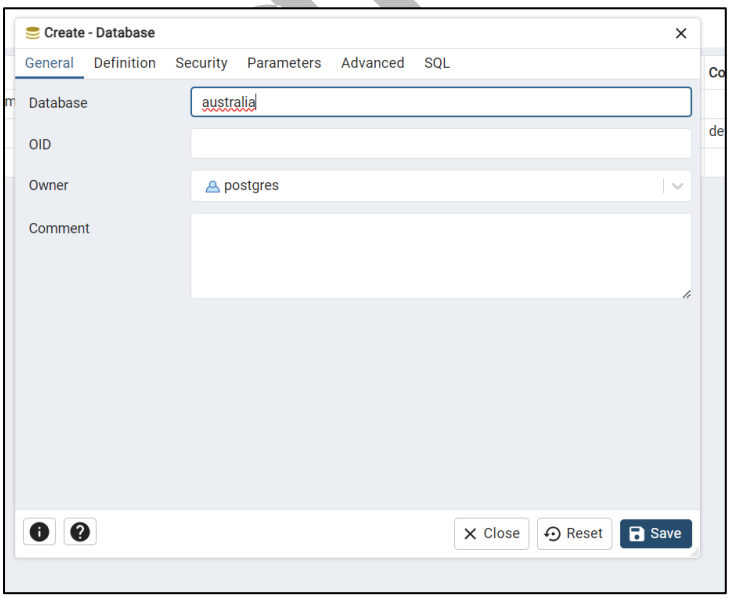
a. Create a new Schema

● *Launch pgAdmin and create a new database*

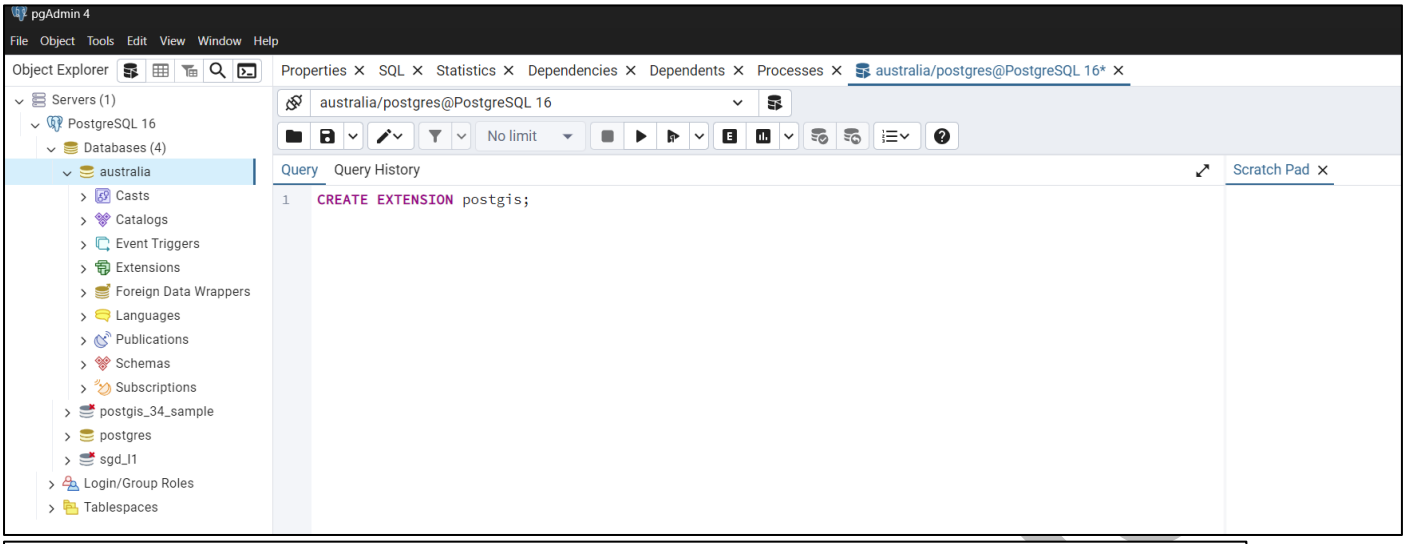
1. server->databases->create database

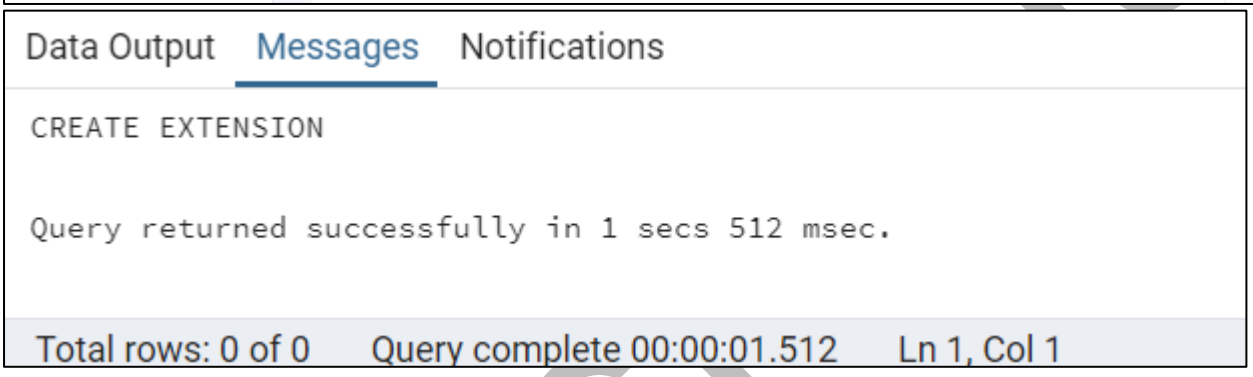


2. Enter database name.

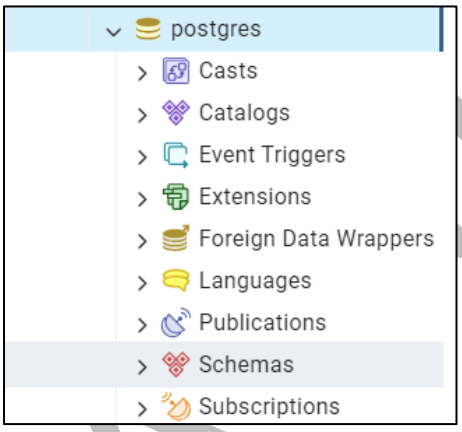


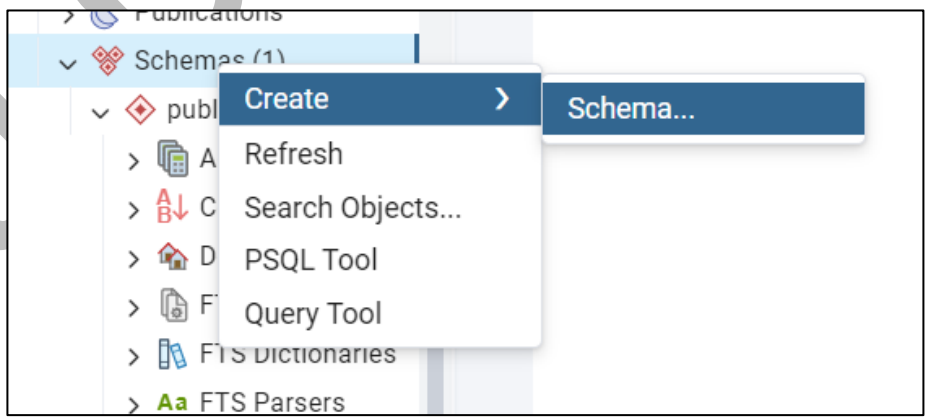
● *Under the new database create an extension using the following query*
CREATE EXTENSION postgis;

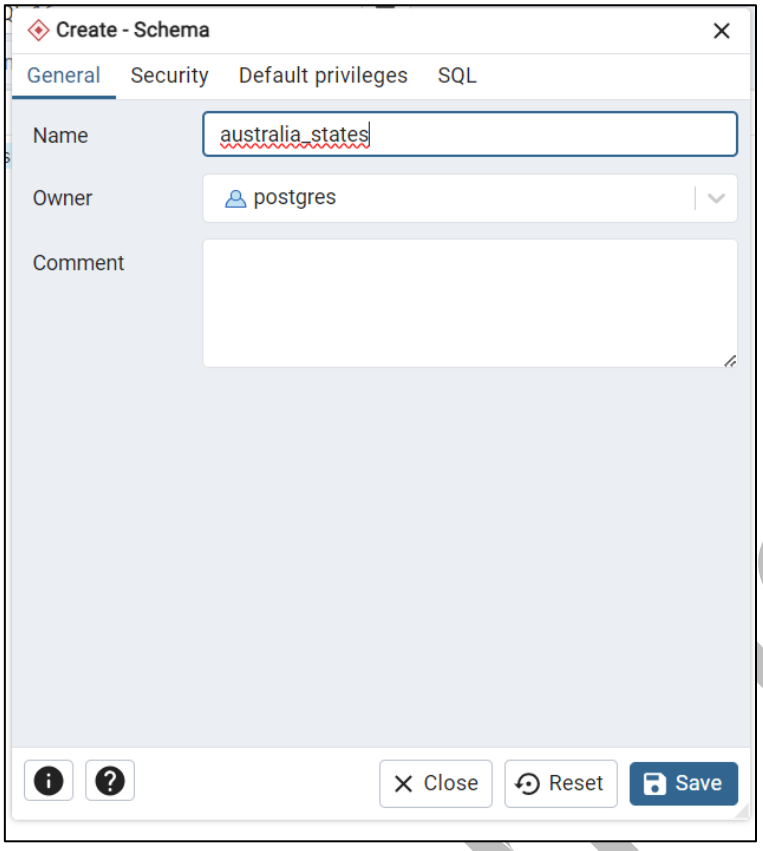




● *Create a new schema under owner postgres.*



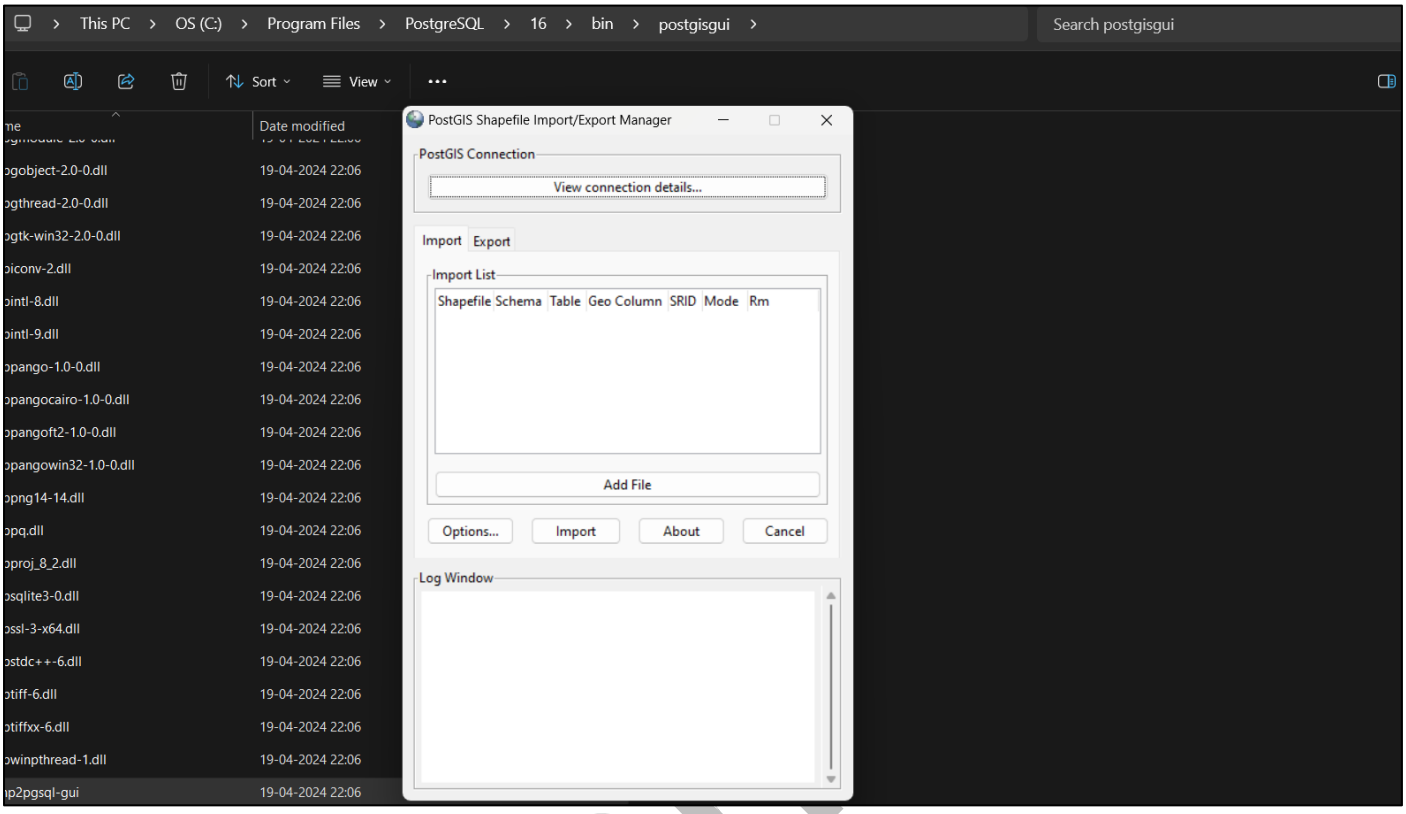




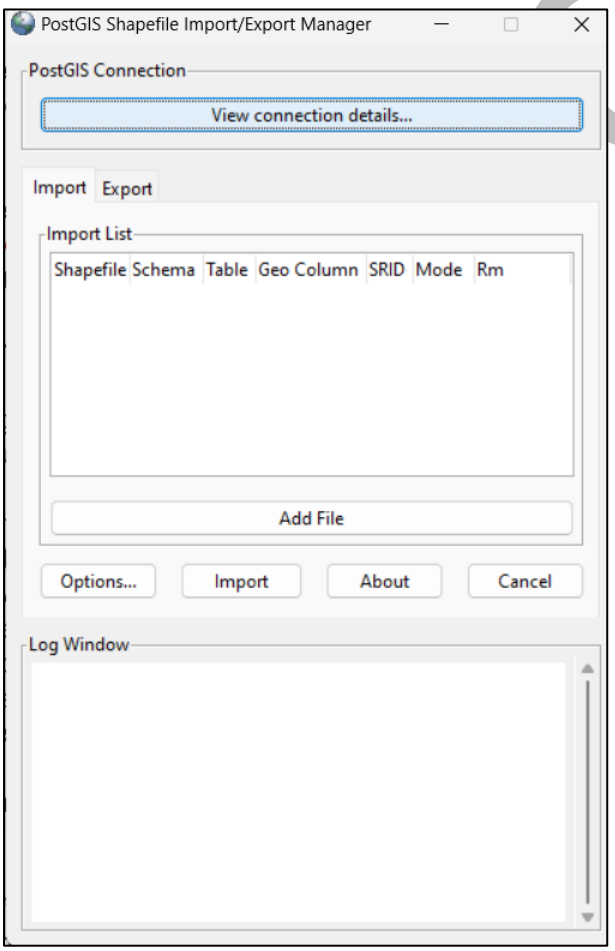
we create "australia_states" as our schema here

B. Load data from a shapefile

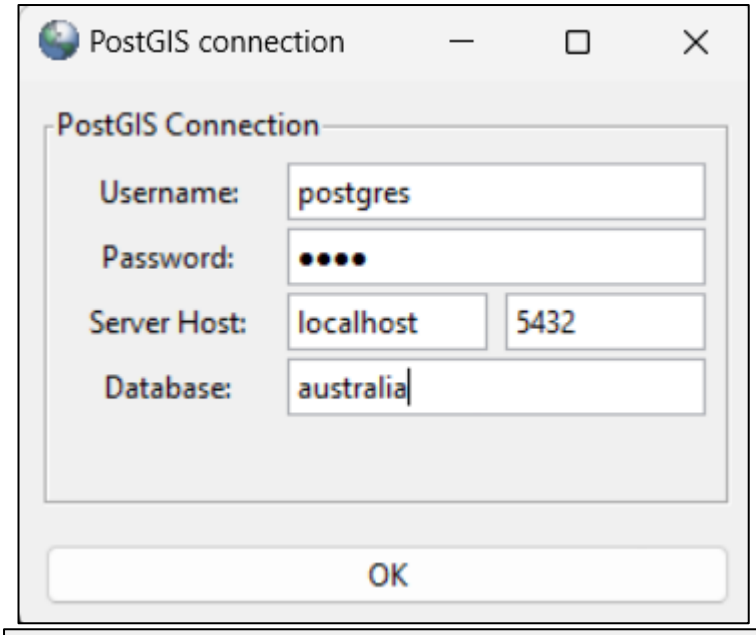
● Navigate to c:\Program Files\PostgreSQL\15\bin\postgis gui and run executable file shp2pgsql-gui.exe

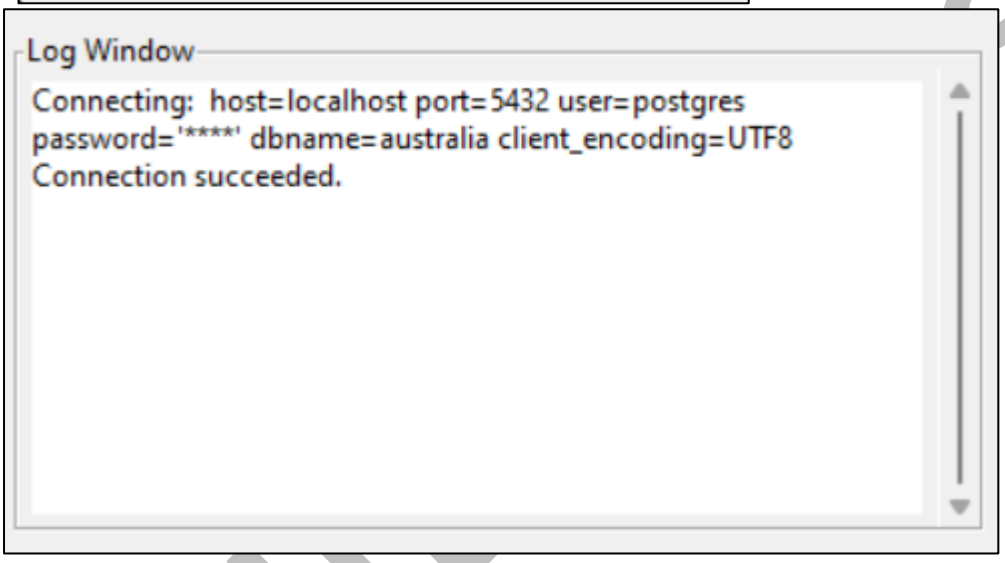


● Click on view connection details

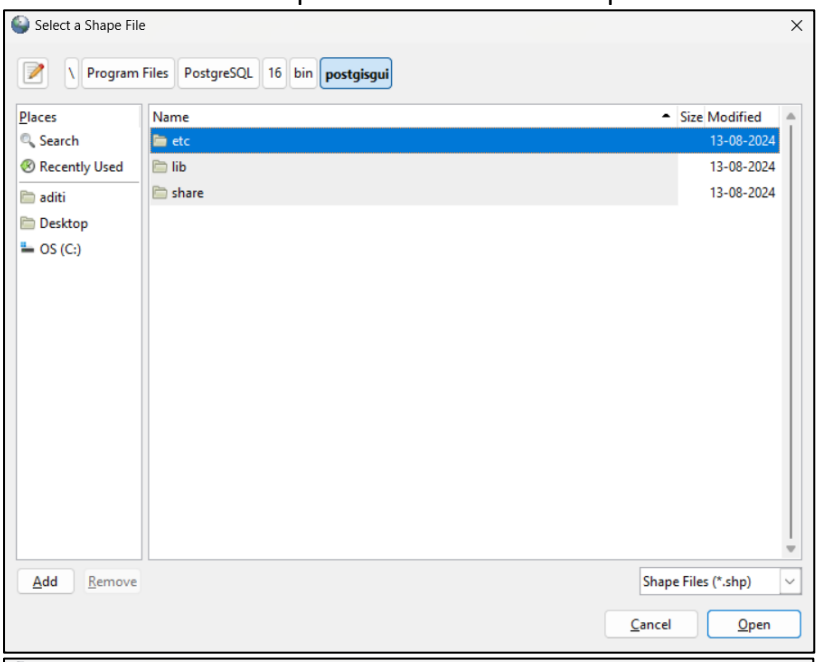


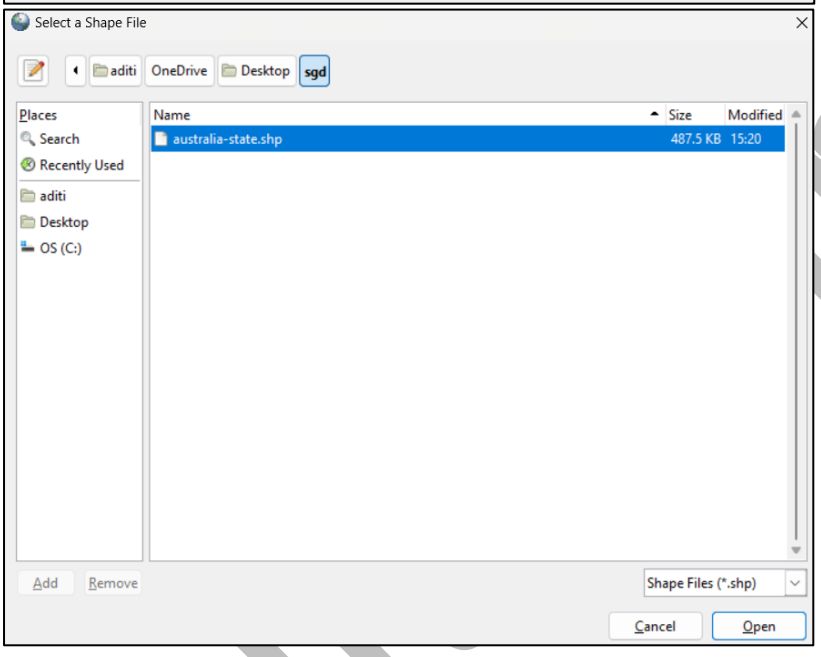
● Enter username as postgres, password, server host as localhost and port as 5432 and database name is the same as that was created above in step A.1. After clicking on OK, it should give a message connection succeeded.



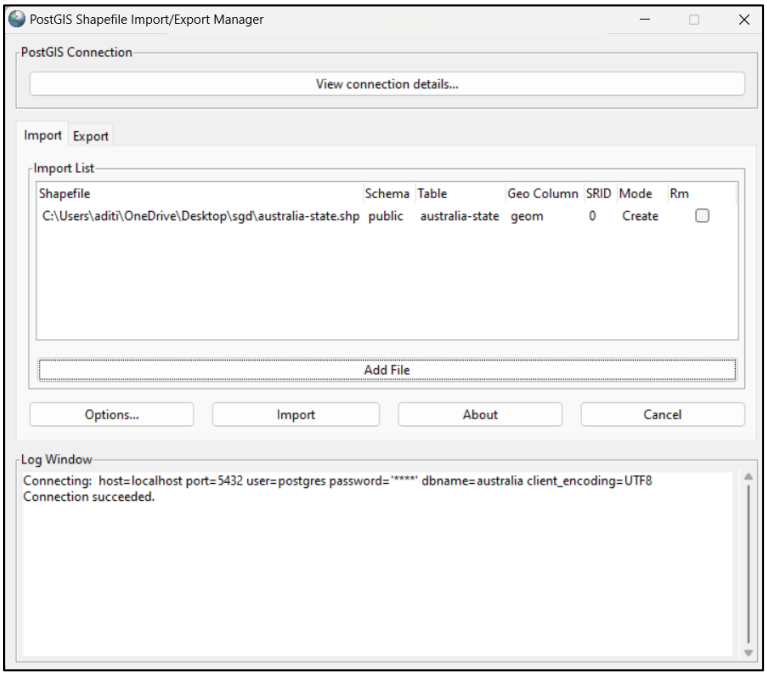


- Select the add files option and select the shapefile.





● In the import list set the schema parameter to public, table parameter to australia-state, geo column to geom and SRID to 4269. Now import the shapefile



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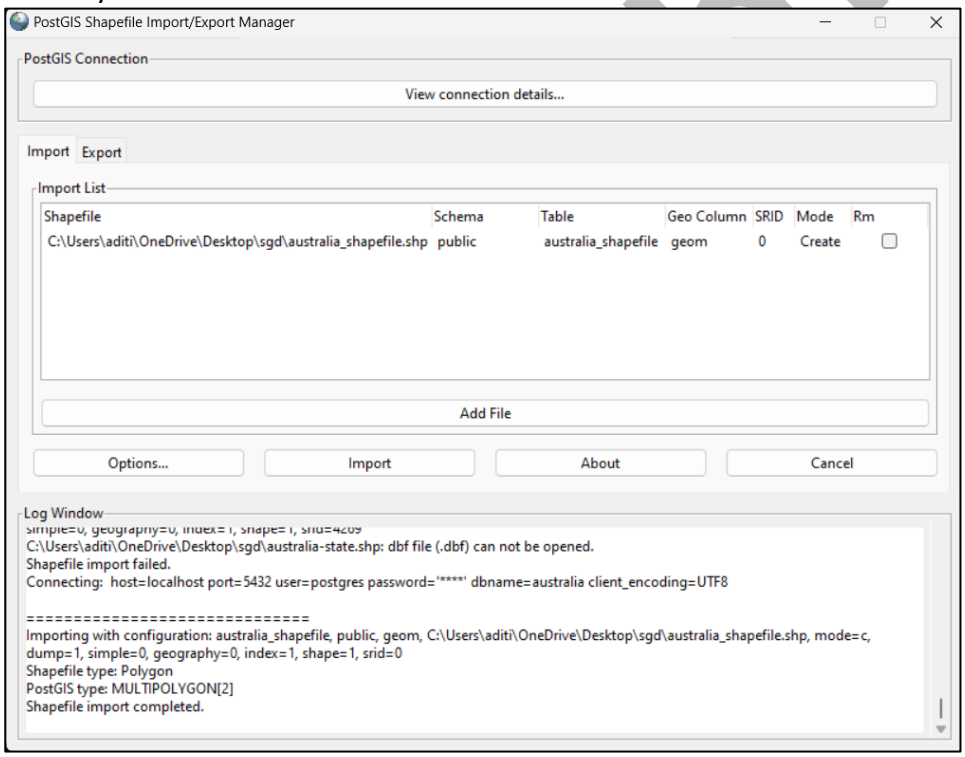
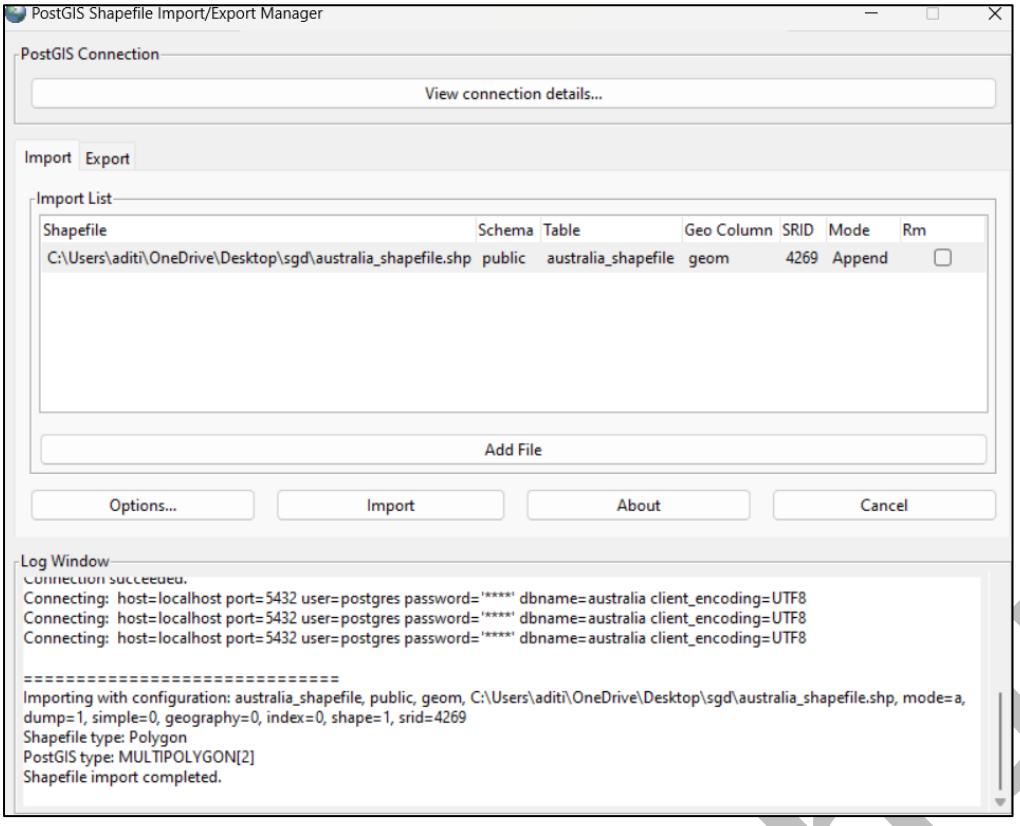
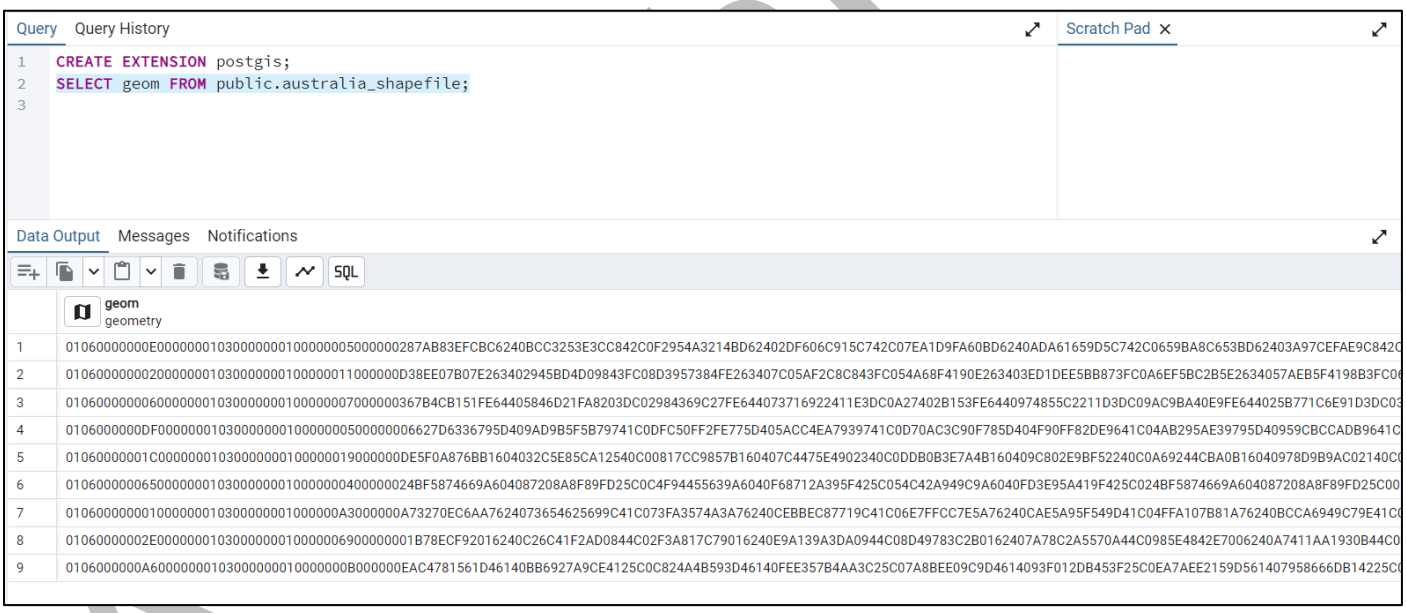
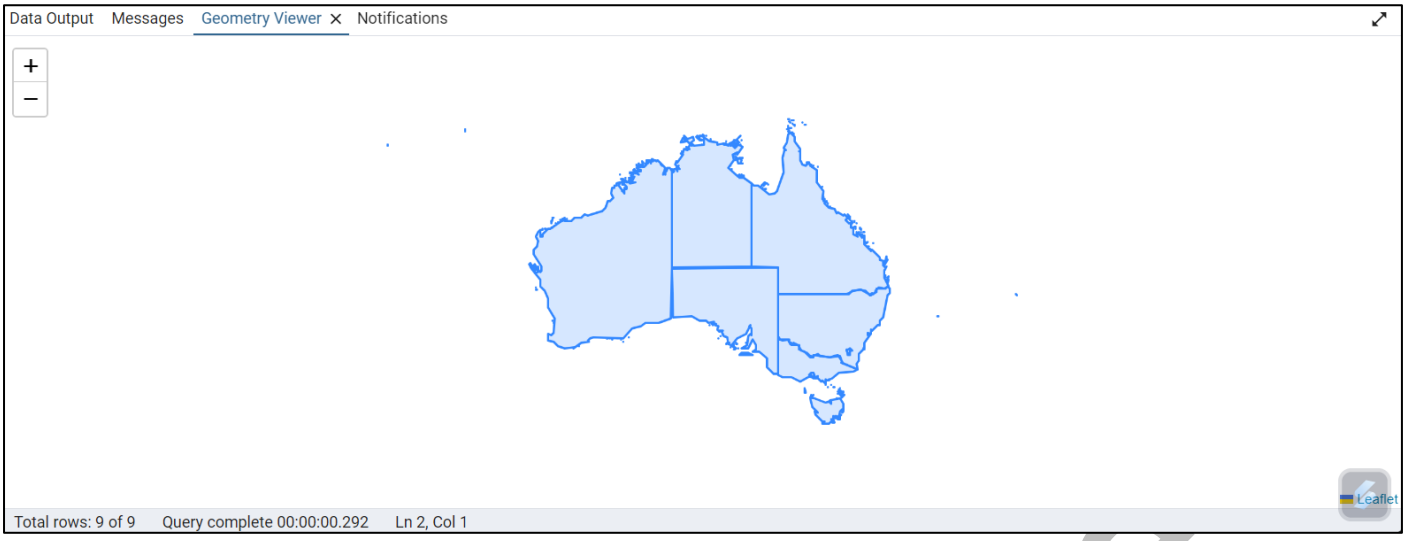
● Click on import and see the message in the log window. Query the data to ensure it has been imported correctly.





Shapefile is imported.





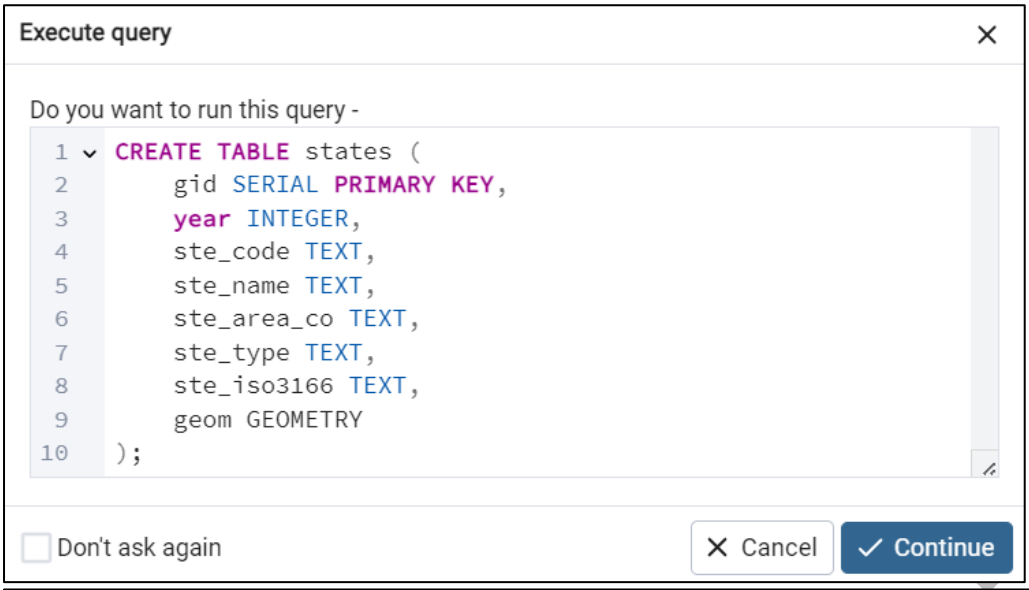
- Click on geom column map icon to visualize the map.

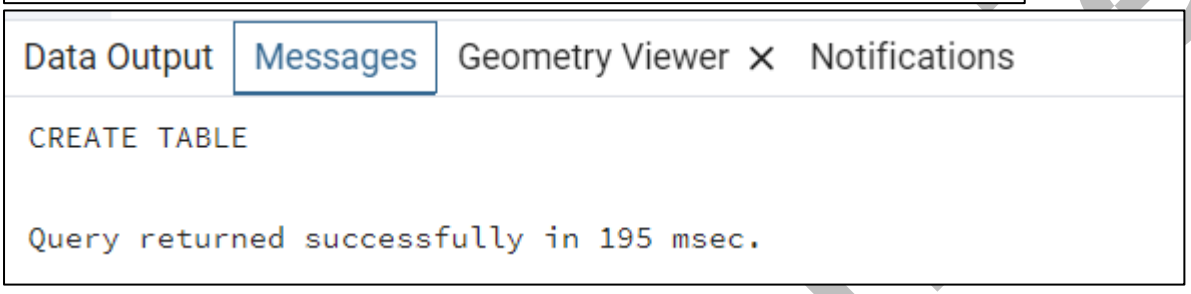
C. Load data from CSV

- Download the CSV file and view it in notepad.

- Write a query to create a table with attributes as the column headers of the CSV file.

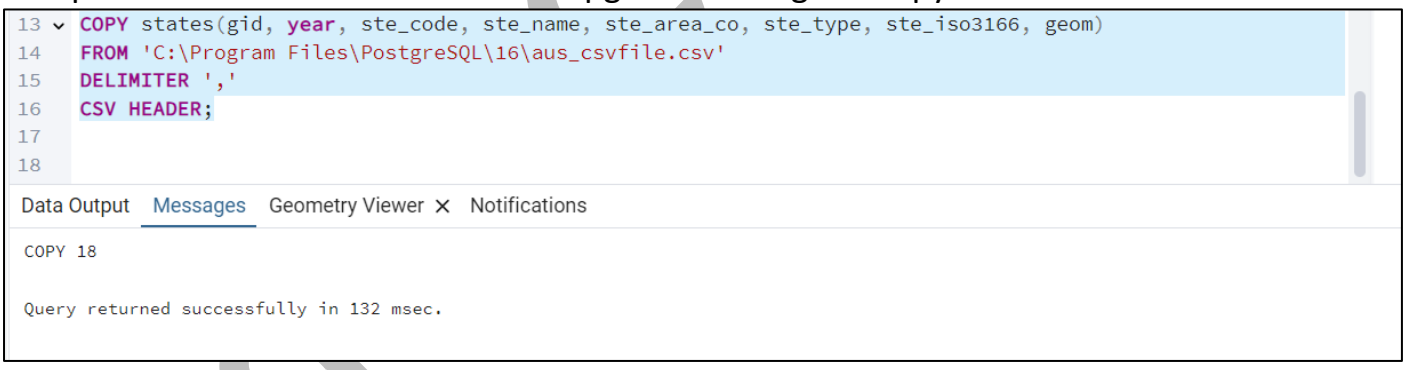
- Create a table for the CSV file in pgAdmin





D. Load data using COPY command

- Import the data from the CSV file to pgAdmin using the copy command.



- Run a select query to check successful loading of data.

```
18  select * from states;
19
```

Data Output | Messages | Geometry Viewer | Notifications

	gid [PK] integer	year integer	ste_code text	ste_name text	ste_area_co text	ste_type text	ste_iso3166 text	geom geometry
1	1	2021	['2']	['Victoria']	AUS	state	VIC	01060000000E0000001030000000100000005000000287AB83EFCBC6240BCC3253E3(
2	2	2021	['1']	['New South Wales']	AUS	state	NSW	01060000000200000001030000000100000011000000D38EE07B07E263402945BD4D09
3	3	2021	['9']	['Other Territories']	AUS	territory	NULL	010600000006000000010300000001000000070000000367B4CB151FE64405846D21FA8
4	4	2021	['5']	['Western Australia']	AUS	state	WA	0106000000DF0000000103000000010000000500000006627D6336795D409AD9B5F5B7
5	5	2021	['4']	['South Australia']	AUS	state	SA	01060000001C0000000103000000010000001900000DE5F0A876BB1604032C5E85CA
6	6	2021	['7']	['Northern Territory']	AUS	territory	NT	0106000000650000001030000000100000004000000024BF5874669A604087208A8F89
7	7	2021	['8']	['Australian Capital Territory']	AUS	territory	ACT	010600000001000000010300000001000000A3000000A73270EC6AA762407365462569
8	8	2021	['6']	['Tasmania']	AUS	state	TAS	0106000000200000001030000000100000069000000001B78ECF92016240C26C41F2AD
9	9	2021	['3']	['Queensland']	AUS	state	QLD	0106000000A6000000010300000001000000B000000EAC4781561D46140BB6927A9CI
10	10	2021	['2']	['Victoria']	AUS	state	VIC	0106000020AD1000000E0000000103000000010000005000000287AB83EFCBC6240B(
11	11	2021	['1']	['New South Wales']	AUS	state	NSW	0106000020AD10000002000000010300000001000000110000000D38EE07B07E2634029
12	12	2021	['9']	['Other Territories']	AUS	territory	NULL	0106000020AD100000060000000103000000010000000700000000367B4CB151FE644058
13	13	2021	['5']	['Western Australia']	AUS	state	WA	0106000020AD100000DF0000000103000000010000005000000006627D6336795D409A
14	14	2021	['4']	['South Australia']	AUS	state	SA	0106000020AD1000001C0000000103000000010000001900000DE5F0A876BB160403

Total rows: 18 of 18 | Query complete 00:00:00.225 | Ln 18, Col 1

- Write queries in pgAdmin

```
19  select gid from states;
20  select gid,year from states where year = '2021';
```

Data Output | Messages | Geometry Viewer | Notifications

	gid [PK] integer
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14

```
20  select gid,year from states where year = '2021';
```

Data Output | Messages | Geometry Viewer | Notifications

	gid [PK] integer	year integer
1	1	2021
2	2	2021
3	3	2021
4	4	2021
5	5	2021
6	6	2021
7	7	2021
8	8	2021
9	9	2021
10	10	2021
11	11	2021
12	12	2021
13	13	2021
14	14	2021

Conclusion:

The process of importing a CSV file into PostgreSQL involves creating the appropriate table structure, ensuring the CSV file is properly formatted, and using the correct method to import the data. The `COPY` command is a powerful tool for server-side imports, but it requires that the file is accessible by the PostgreSQL server with appropriate permissions.

Key takeaways:

1. Ensure the CSV file is placed in a directory accessible by the PostgreSQL server.

2. The file path and permissions play a crucial role in the success of the import operation.

By following these steps, we successfully imported CSV data into PostgreSQL, ensuring that all data is loaded into the database for further use or analysis.