

PostGIS műgyoróhéjban

2014. november 21.

Siki Zoltán

Tartalom

- Téradatbázis létrehozása
- Adatok betöltése a téradatbázisba
 - shp2pgsql,
 - QGIS DB kezelő
- Adatok lekérdezése elemzése
- Adatok exportálása
 - pgsql2shp
 - QGIS



Hálózat beállítása

Editing Wired connection 1

Connection name: Wired connection 1

General Ethernet 802.1x Security IPv4 Settings IPv6 Settings

Method: Manual

Addresses

Address	Netmask	Gateway
152.66.5. [redacted]	255.255.255.0	152.66.5.62

+ Add

Delete

DNS servers: 152.66.116.1

Search domains:

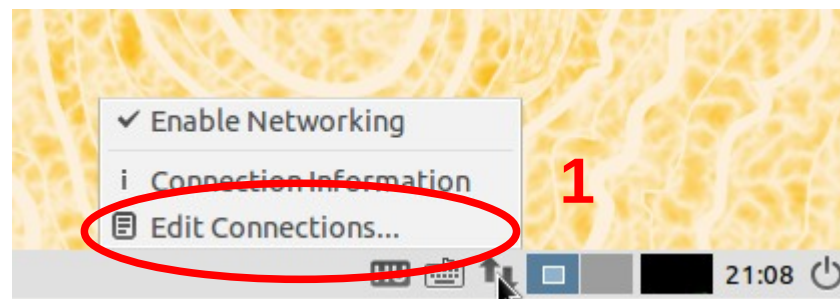
DHCP client ID:

☐ Require IPv4 addressing for this connection to complete

Routes...

Cancel Save...

gépen lévő szám



Adatok letöltése

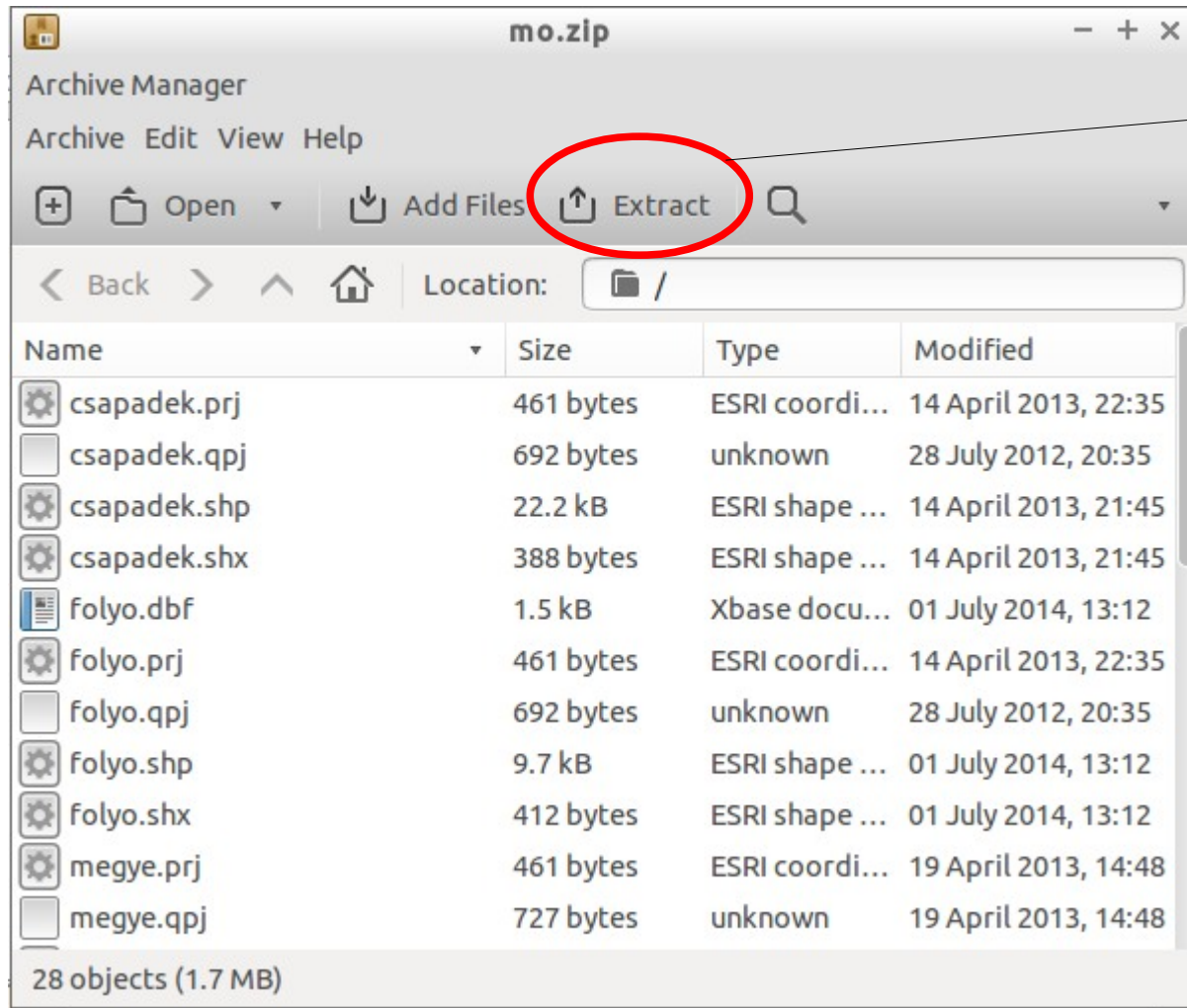
<http://www.agt.bme.hu/php/browse.php?/foss>

The screenshot shows a web browser window with the address bar displaying www.agt.bme.hu/php/browse.php?/foss. The page content is a table of files for download. A Firefox download dialog is open, showing the file **mo.zip** (17.3 MB) from <http://www.agt.bme.hu>. The dialog asks "What should Firefox do with this file?" and the "Open with" option is selected, with "Archive Manager (default)" chosen from the dropdown menu. The file **mo.zip** in the table below is also circled in red.

gama-local-1.9.04.exe	2832051 byte	2008.04.25.	GNU GaMa 1.9.04 Windows binary (Dev-C++) static
gama-local-1.9.05.exe	2884		ary (Dev-C++) static
gama-local-1.9.06.exe	2884		ary (Dev-C++) static
gama-local-1.9.07.exe	2885		ary (Dev-C++) static
itr2dxf.pdf	110		F nyiltforrású (GPLv3)
itr2dxf.zip	4024		F nyiltforrású (GPLv3)
jumpxy.tgz	3		rkép koordinátával adott
mo.zip	18167	21:25	jlok Magyarországról
robot.zip	172834 byte	2012.11.20. 22:28	Program Leica mérőállomások robotvezérléséhez (Windows)
server_scripts.zip	20919 byte	2013.02.24. 10:49	Szerver oldali szkriptek, Ulyxes

OSGeo Budapest
Your Open Source Compass

Adatok kicsomagolása

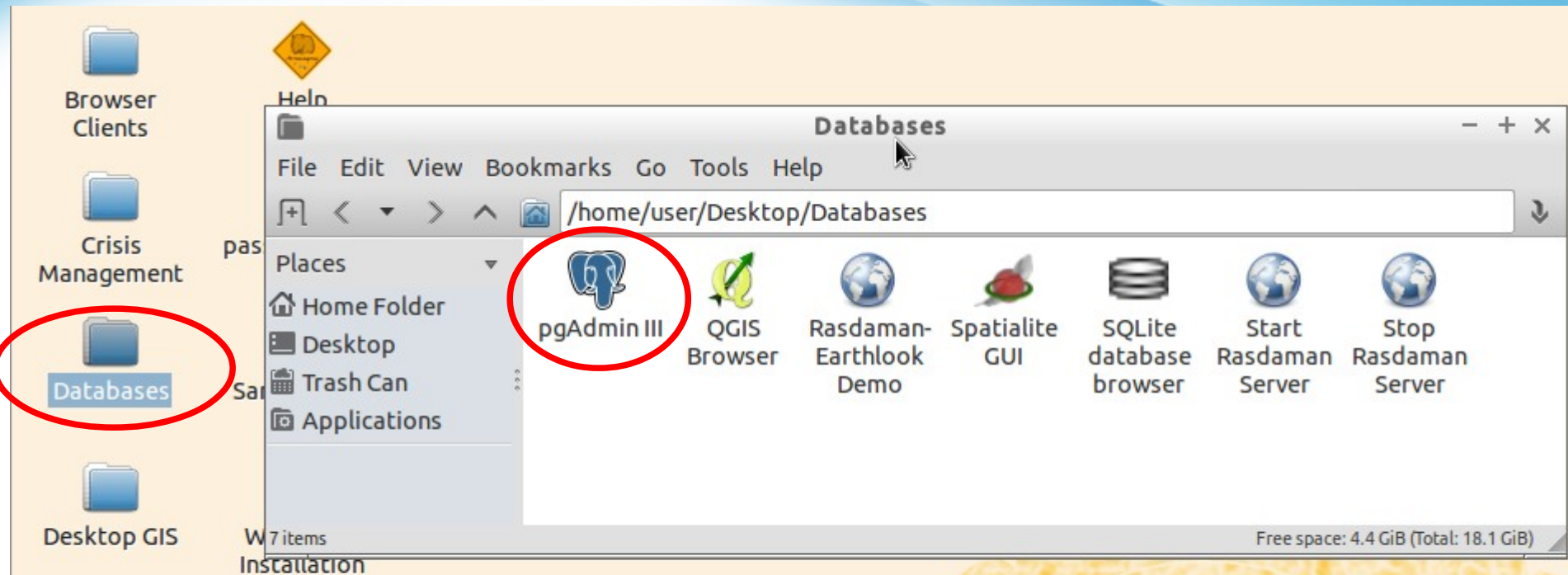


Downloads
könyvtár



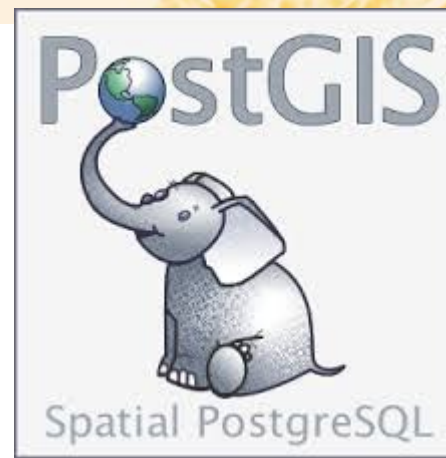
OSGeo Budapest
Your Open Source Compass

Téradatbázis létrehozása

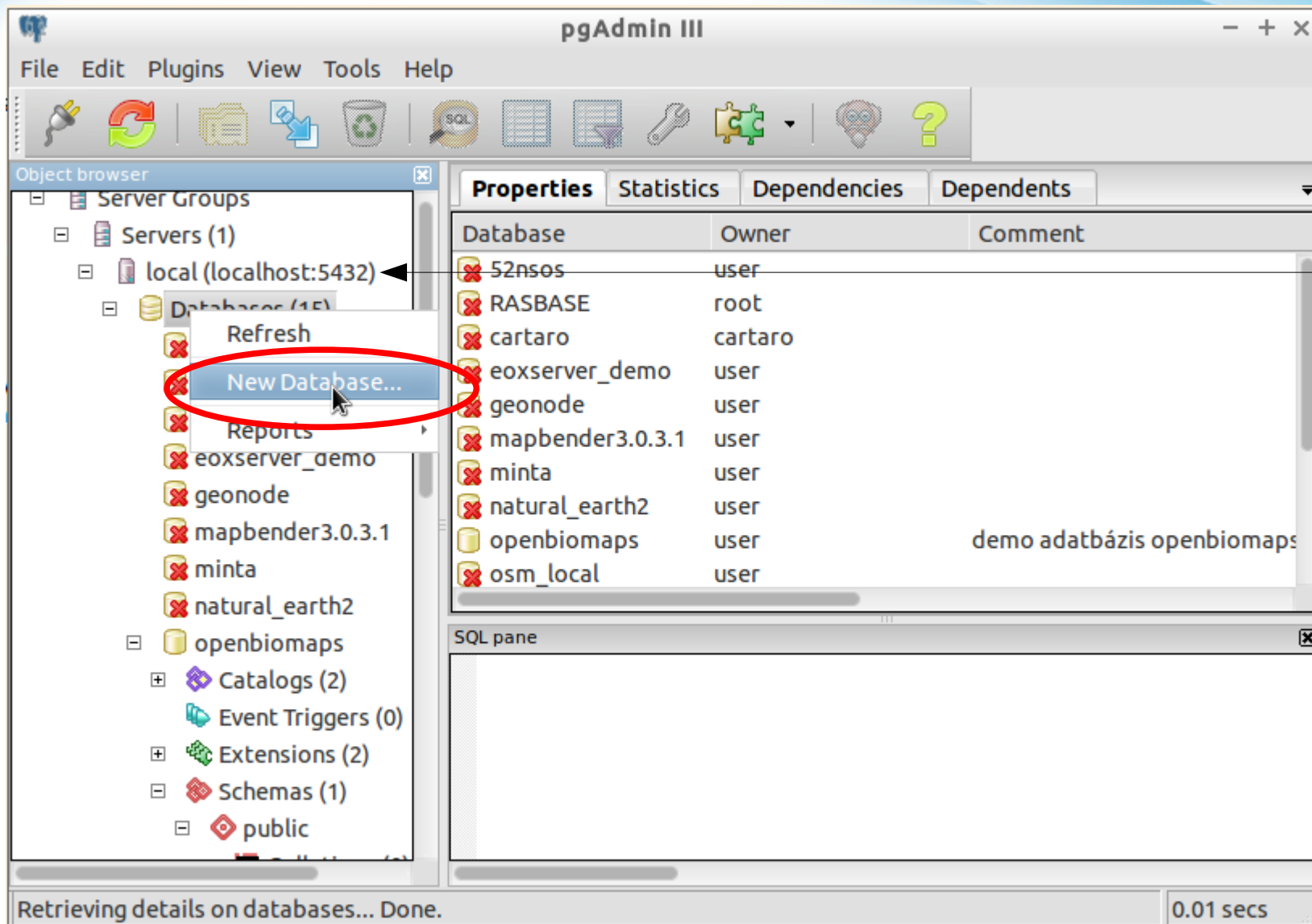


Paul Ramsey

OSGeo Live 8



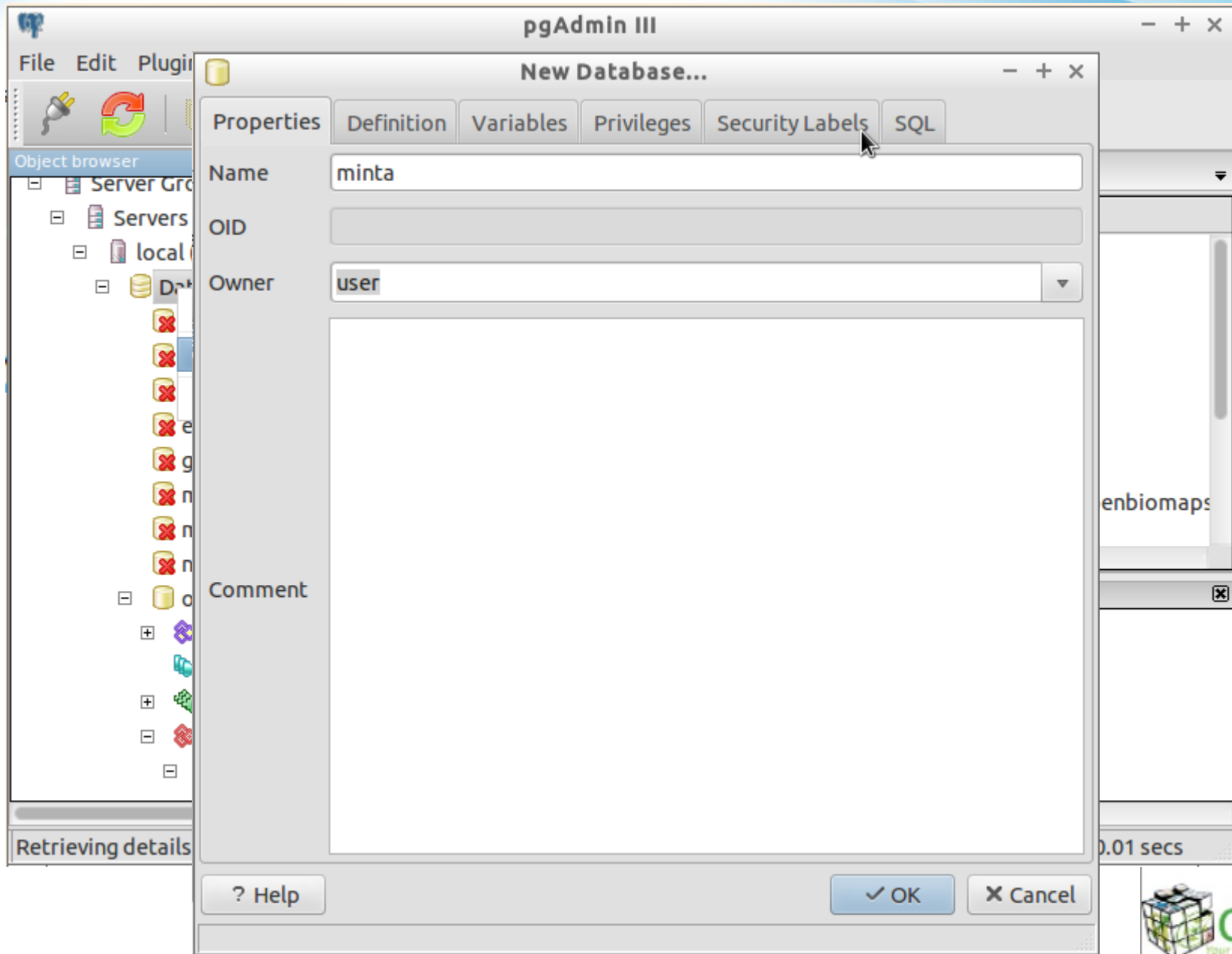
pgadmin3



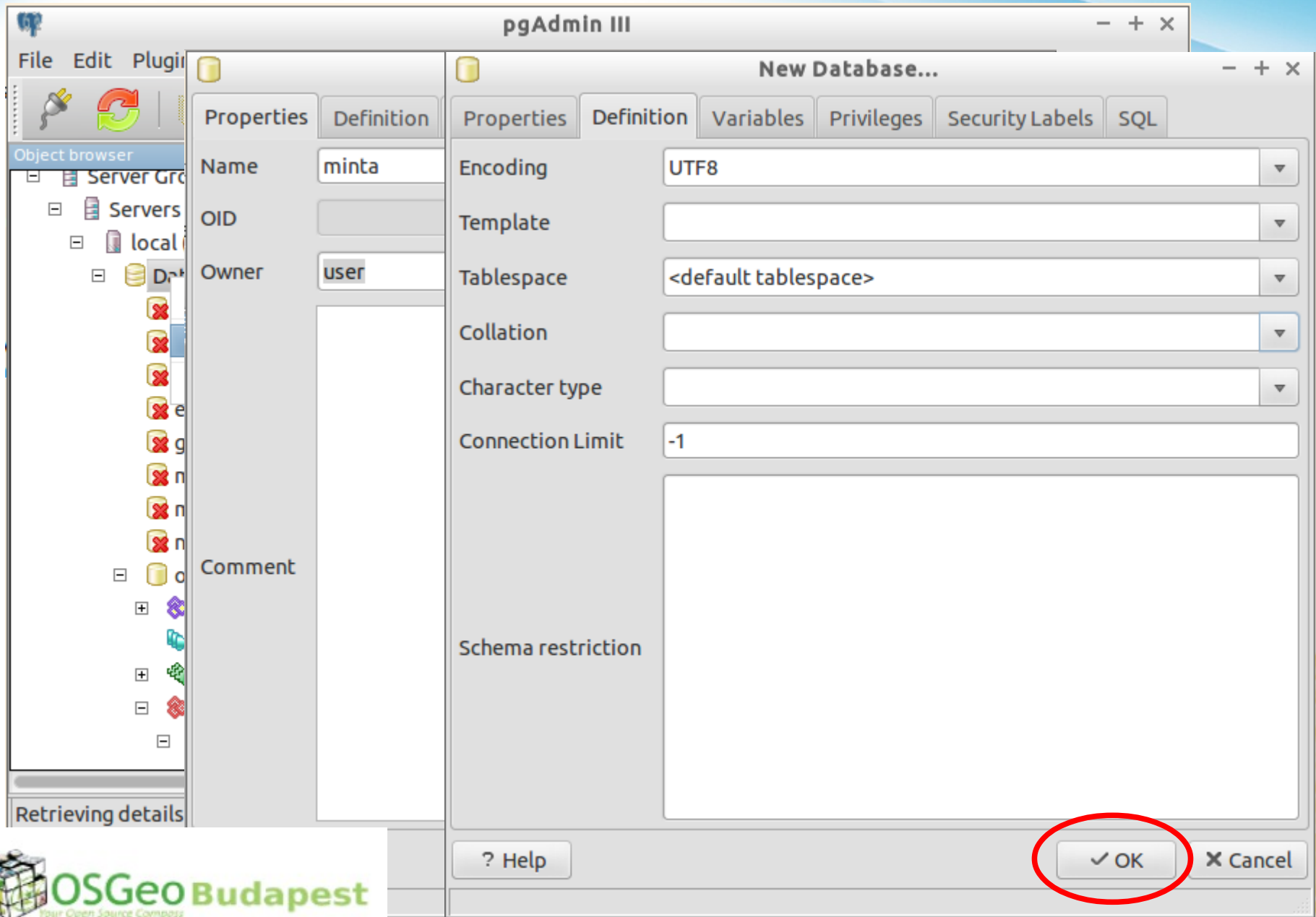
Dupla kattintás
a csatlakozáshoz



pgadmin3



pgadmin3



pgadmin3

The screenshot displays the pgAdmin III application window. The left pane shows the 'Object browser' tree with 'Servers (1)' expanded, showing 'local (localhost:5432)' and its 'Databases (15)'. The database 'minta' is selected and circled in red. The right pane shows the 'Properties' tab for the selected database, displaying various attributes and their values. Below the properties, the 'SQL panel' shows the SQL commands used to create the database.

Object browser

- Servers (1)
 - local (localhost:5432)
 - Databases (15)
 - 52nsos
 - RASBASE
 - cartaro
 - eoxserver_demo
 - geonode
 - mapbender3.0.3.1
 - minta**
 - Catalogs (2)
 - Event Triggers (0)
 - Extensions (2)
 - Schemas (1)
 - Stony Replication
 - natural_earth2
 - openbiomaps

Properties

Property	Value
Name	minta
OID	55762
Owner	user
ACL	
Tablespace	pg_default
Default tablespace	pg_default
Encoding	UTF8
Collation	en_US.UTF-8
Character type	en_US.UTF-8
Default schema	public

SQL panel

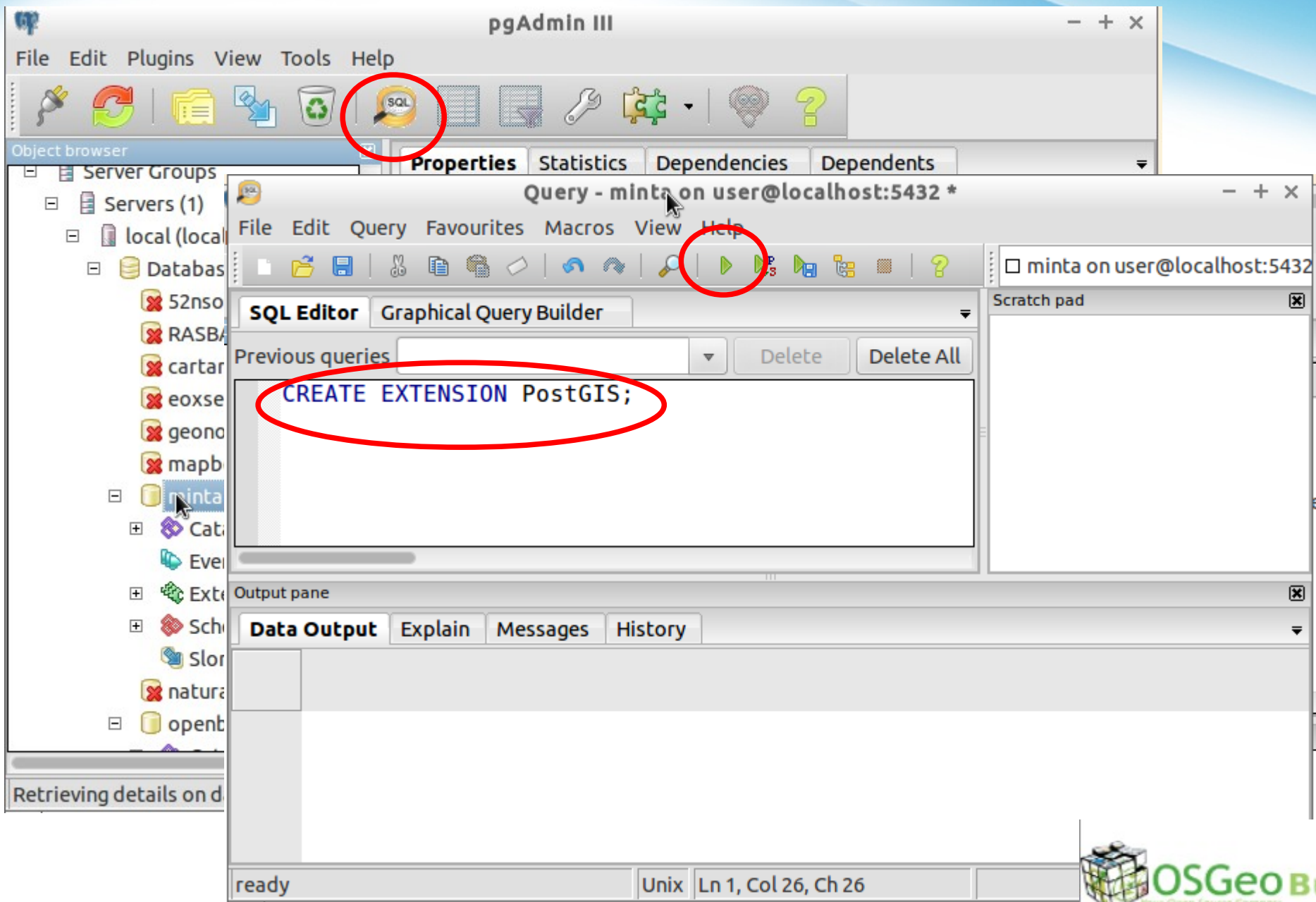
```
-- Database: minta
-- DROP DATABASE minta;

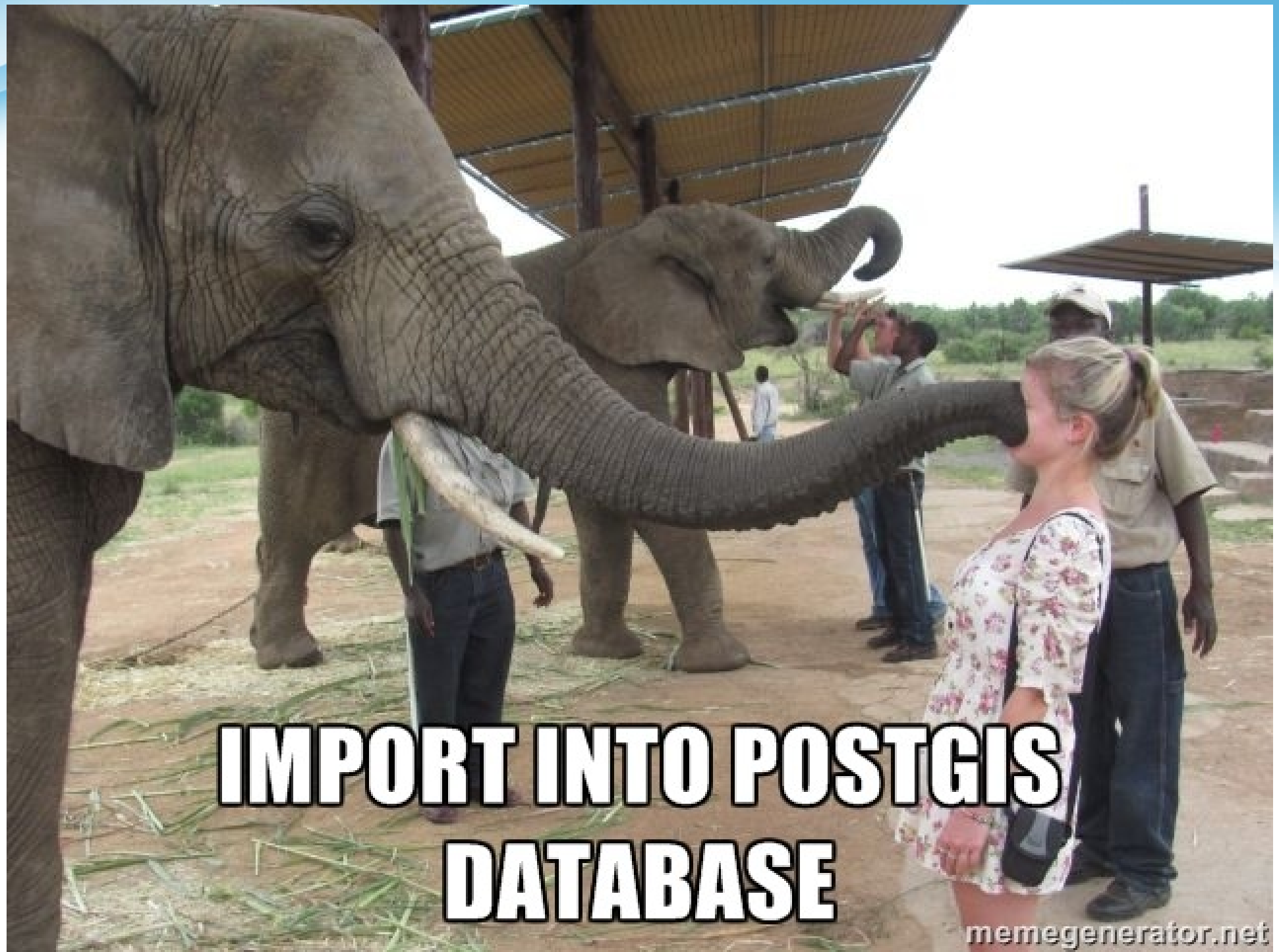
CREATE DATABASE minta
  WITH OWNER = "user"
  ENCODING = 'UTF8'
```

Retrieving details on database minta... Done.



PostGIS képességek



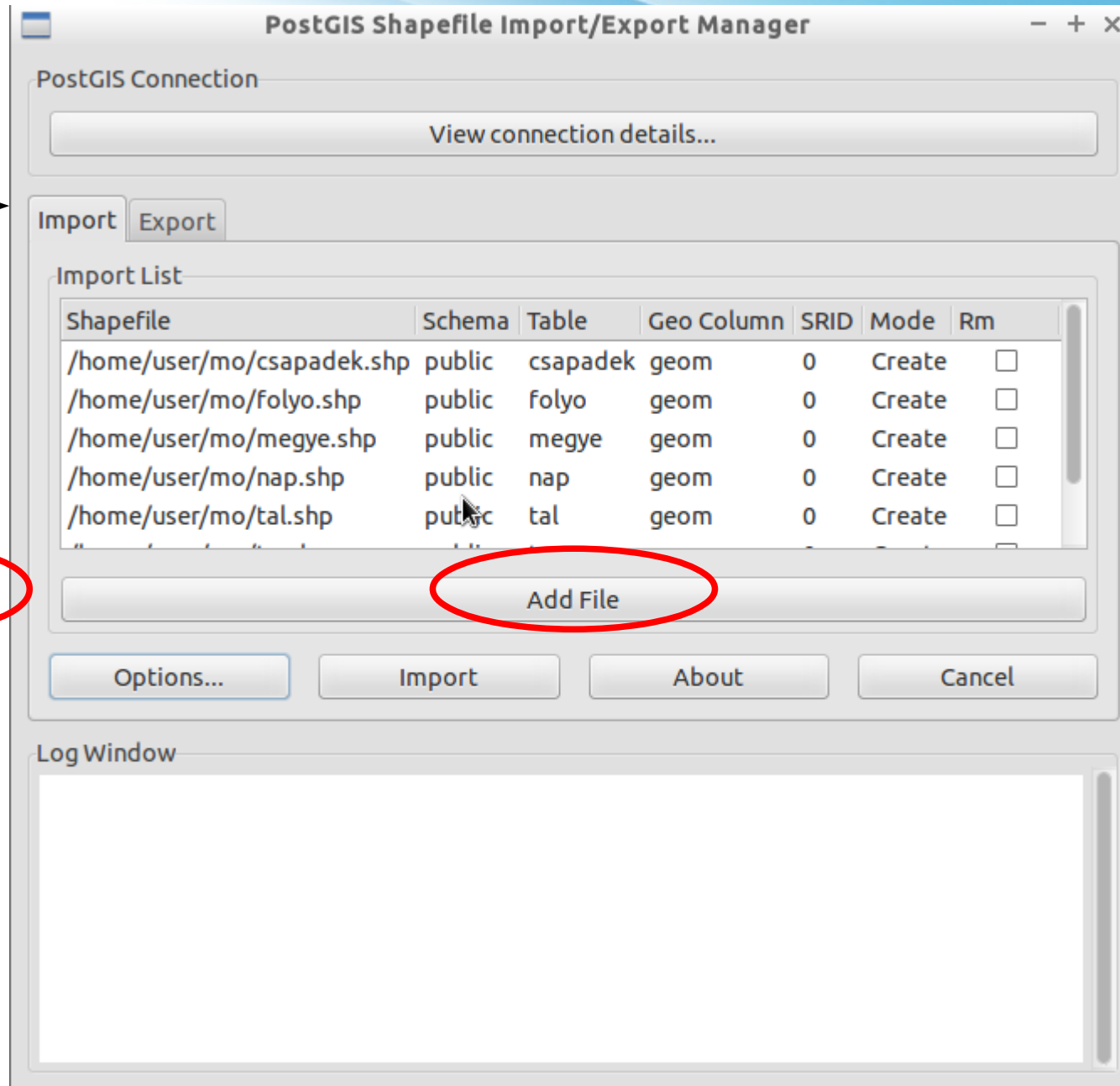


**IMPORT INTO POSTGIS
DATABASE**

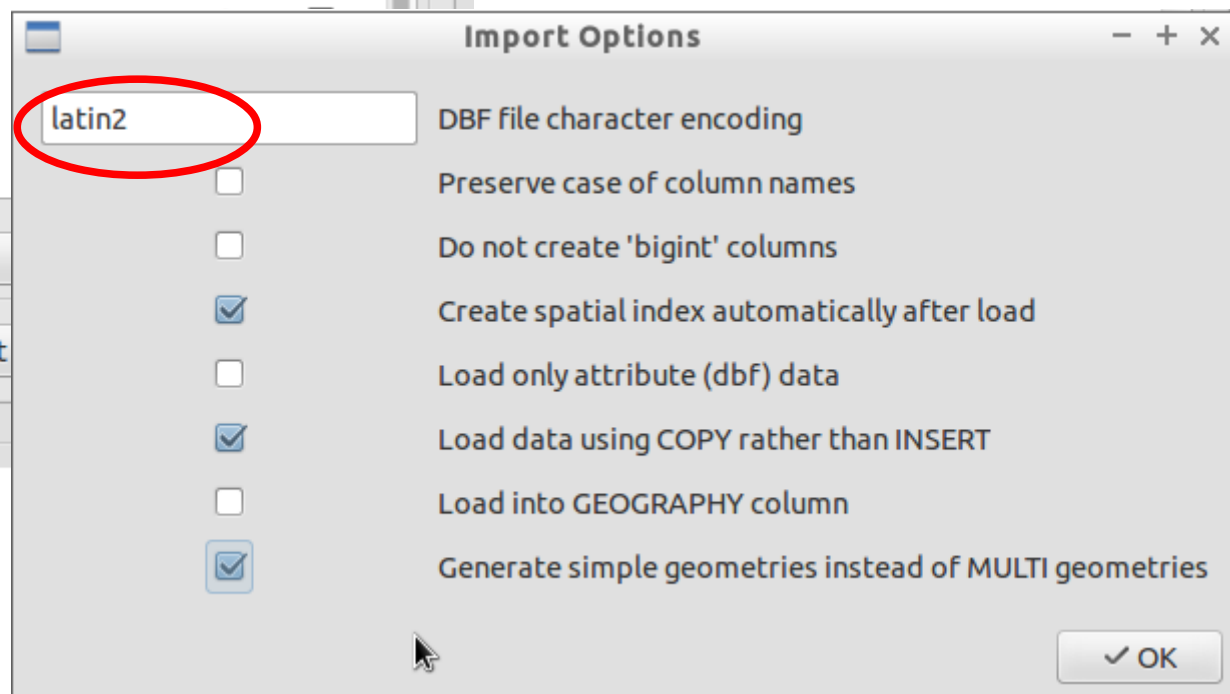
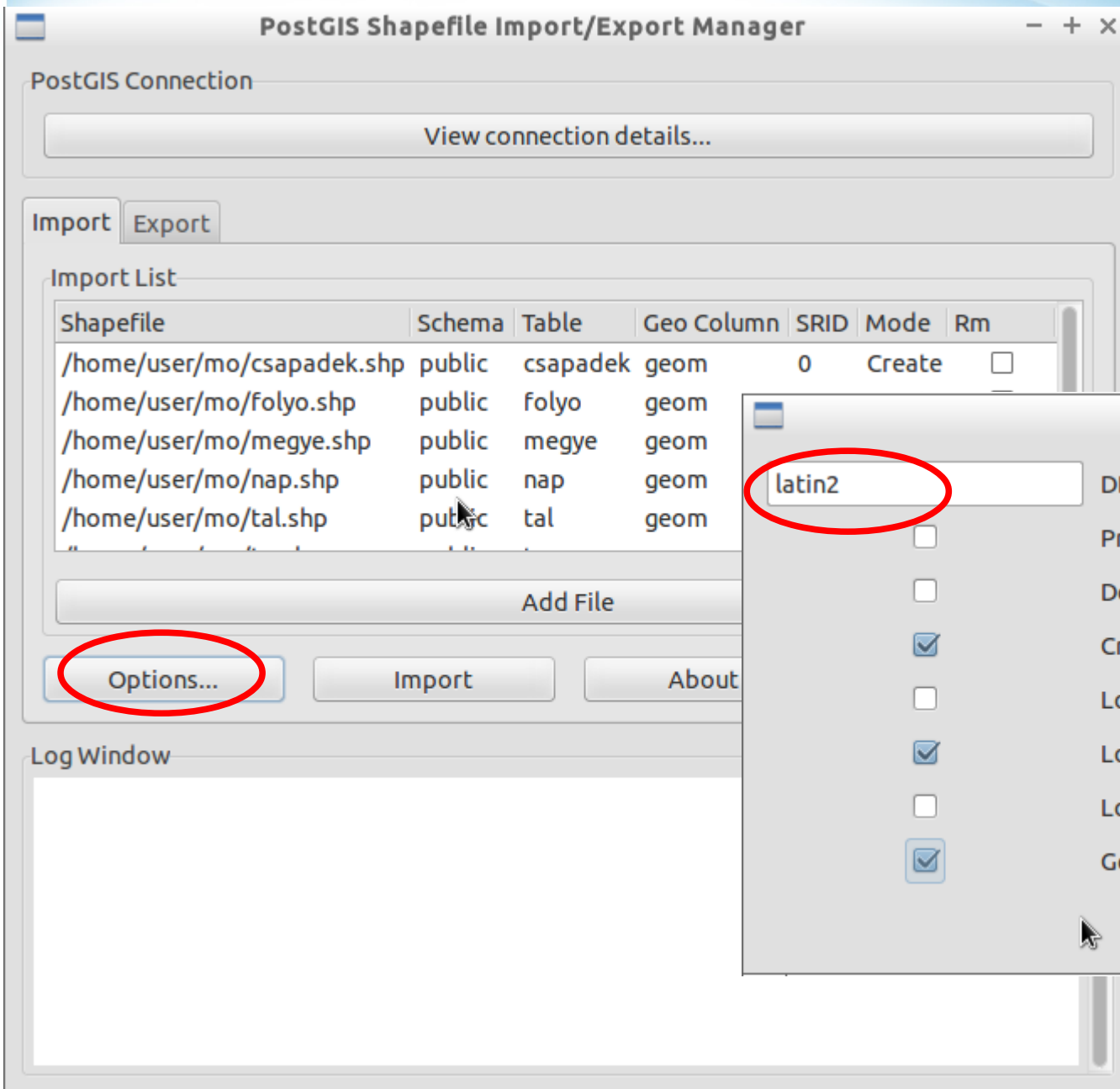
shp2pgsql-gui



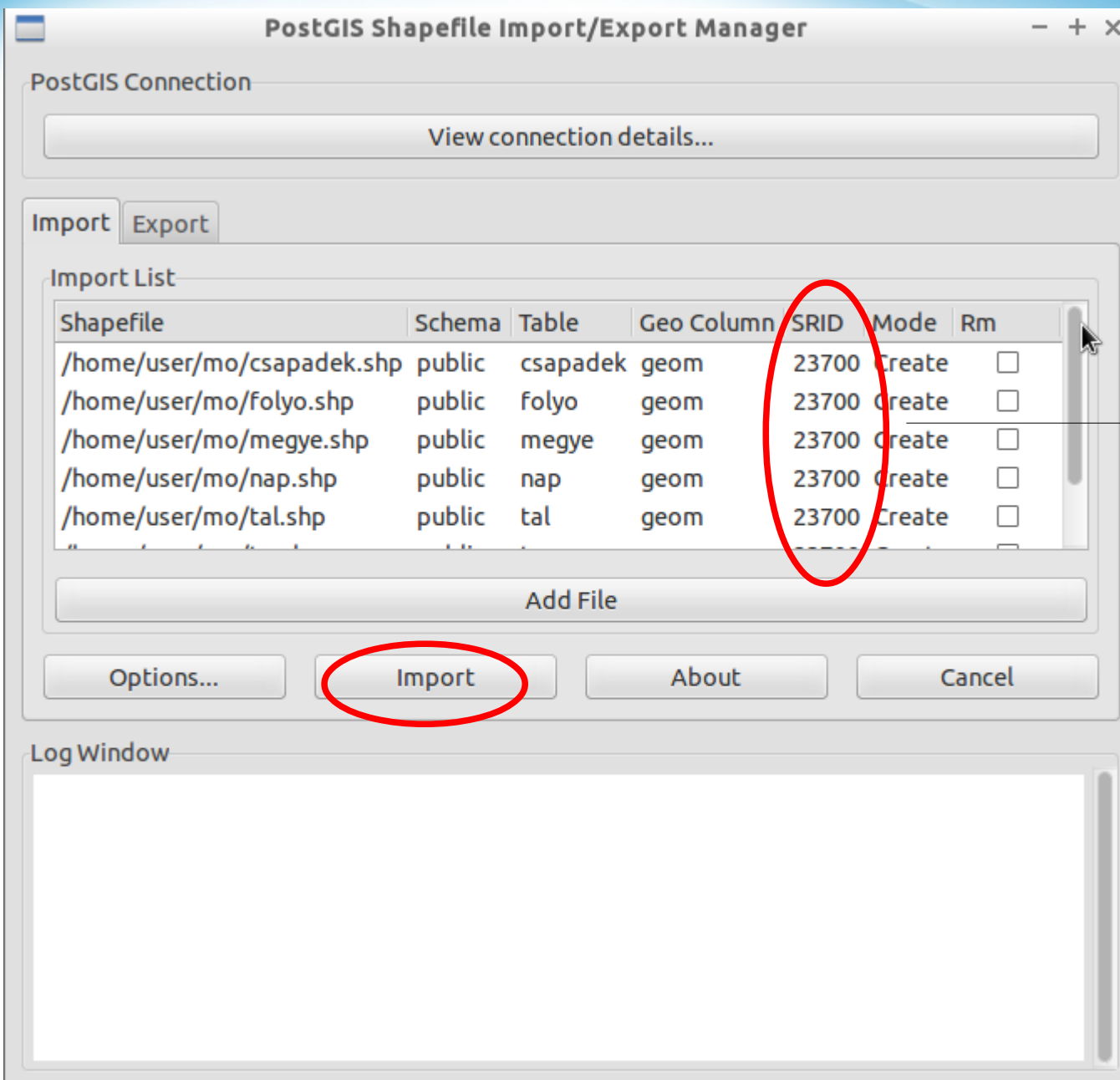
```
user@user-virtual-mac
user@user-:~$ shp2pgsql-gui
```



Shp2pgsql-gui



shp2pgsql



EOV vetület



OSGeo Budapest
Your Open Source Compass

pgadmin3

pgAdmin III

File Edit Plugins View Tools Help

Object browser

- Domains (0)
- FTS Configurations (0)
- FTS Dictionaries (0)
- FTS Parsers (0)
- FTS Templates (0)
- Functions (1049)
- Sequences (7)
- Tables (8)
 - csapadek
 - folyo
 - megye**
 - nap
 - spatial_ref_sys
 - tal
 - to
 - varos
- Trigger Functions (2)
- Views (4)

Properties Statistics Dependencies Dependents

Property	Value
Name	megye
OID	57084
Owner	user
Tablespace	pg_default
ACL	
Of type	
Primary key	gid
Rows (estimated)	20
Fill factor	
Rows (counted)	20

SQL pane

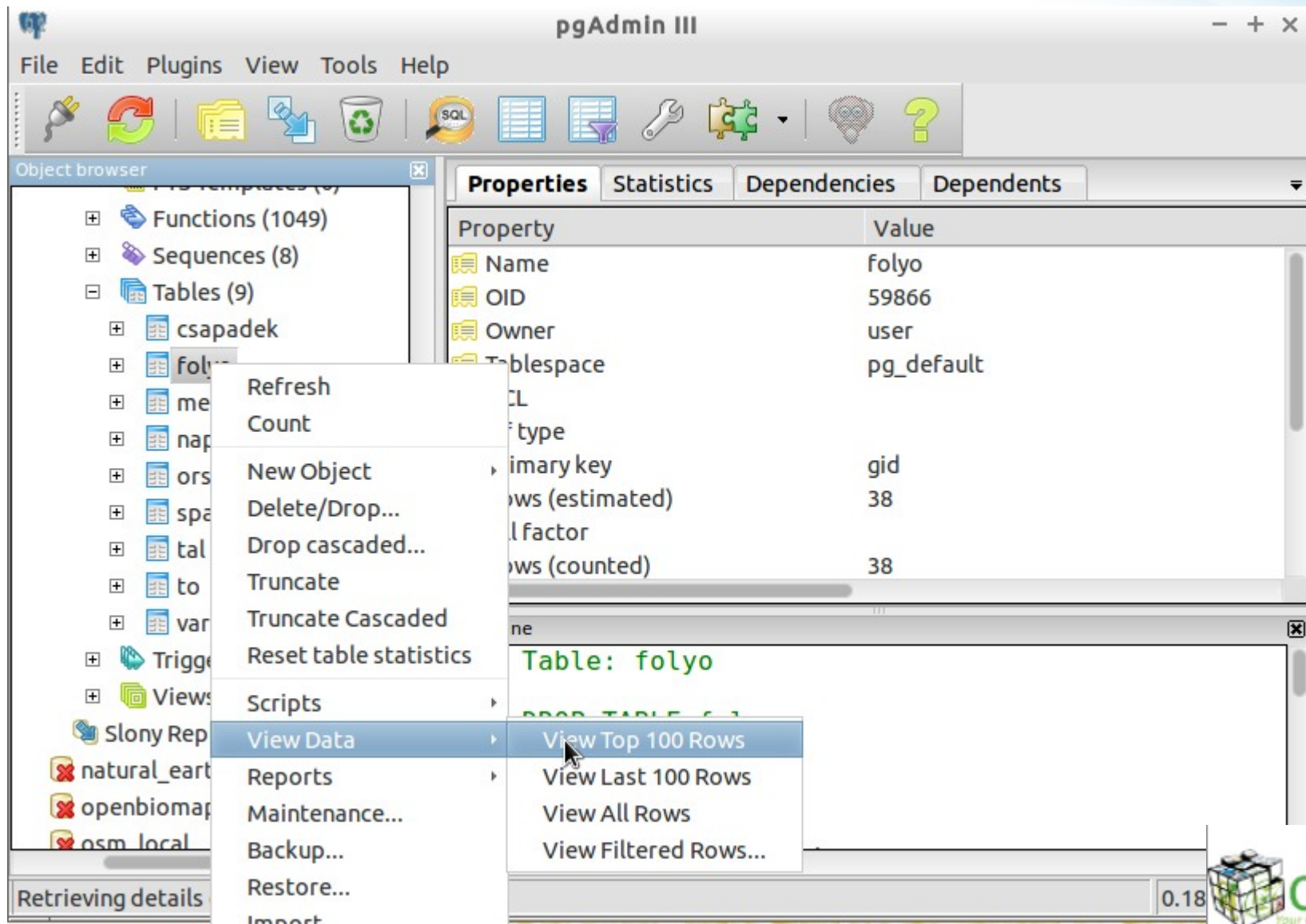
```
-- Table: megye
-- DROP TABLE megye;

CREATE TABLE megye
(
  gid serial NOT NULL
```

Retrieving details on table megye... Done. 0.01 s



pgadmin3



pgadmin3



WKB

pgAdmin III

File Edit Plugins View Tools Help

Object browser

- Domains (0)
- FTS Configurations (0)

Properties Statistics Dependencies Dependents

Property Value

Edit Data - local (localhost:5432) - minta - megye

File Edit View Tools Help

100 rows

	gid [PK] serial	nev character varying(25)	sl n	sl n	sl n	kod smallint	geom geometry(Polygon,23700)
1	1	Budapest	9	1	1	5	0103000020945C0000001000000C90100
2	2	Fejér	6	1	1	7	0103000020945C0000001000000E20400
3	3	Tolna	5	8	1	17	0103000020945C00000010000008F0500
4	4	Bács-Kiskun	1	1	1	1	0103000020945C00000010000000400600
5	5	Heves	5	1	2	10	0103000020945C00000010000000440500
6	6	Jász-Nagykun-Szol	8	7	8	11	0103000020945C00000010000000C30600
7	7	Borsod-Abaúj-Zemp	1	2	1	4	0103000020945C00000010000000E80400

Scratch pad

Retrieving c

20 rows

OSGeo Budapest
Your Open Source Compass

pgadmin3

WKT

The screenshot displays the pgAdmin III application window. The main window has a menu bar (File, Edit, Plugins, View, Tools, Help) and a toolbar. A red circle highlights the 'Tools' menu. The 'Object browser' on the left shows a tree of database objects, with 'Tables (8)' expanded and 'megye' selected. The 'Query' window is open, showing a SQL query in the 'SQL Editor' tab: `SELECT ST_AsText(geom) FROM varos`. The 'Output pane' at the bottom shows the results of the query in a table with two columns: 'st_astext' and 'text'. The results are displayed as WKT (Well-Known Text) coordinates. A status bar at the bottom indicates 'OK.', 'Unix', 'Ln 1, Col 34, Ch 34', '21 rows.', and '13 ms'.

pgAdmin III

File Edit Plugins View Tools Help

Object browser

- Domains (0)
- FTS Configurations (0)
- FTS Dictionaries (0)
- FTS Parsers (0)
- FTS Templates (0)
- Functions (1049)
- Sequences (7)
- Tables (8)
 - csapadek
 - folyo
 - megye
 - nap
 - spatial_ref_sys
 - tal
 - to
 - varos
- Trigger Functions (2)
- Views (4)

Retrieving details on table megye... Do

Query - minta on user@localhost:5432 *

File Edit Query Favourites Macros View Help

SQL Editor Graphical Query Builder

Previous queries [] Delete Delete All

```
SELECT ST_AsText(geom) FROM varos
```

Output pane

Data Output Explain Messages History

	st_astext	text
1	POINT(466772.097657108 260000.473886692)	
2	POINT(465638.521809064 210788.737132531)	
3	POINT(483619.62860708 165560.958011648)	
4	POINT(588947.817264933 79800.3640568266)	
5	POINT(625087.827028208 107170.221088278)	

OK. Unix Ln 1, Col 34, Ch 34 21 rows. 13 ms

Egyszerű lekérdezések

PostGIS verzió

SELECT postgis_full_version();

Folyószakaszok hossza

SELECT nev, ST_Length(geom) FROM folyo;

Leghosszabb magyarországi szakasszal bíró folyó

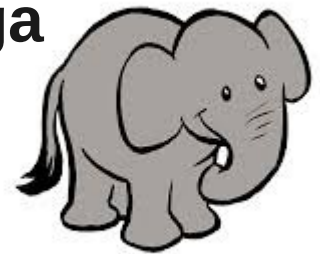
**SELECT nev, Sum(ST_Length(geom)) FROM folyo
GROUP BY nev ORDER BY 2 DESC LIMIT 1**

Egerhez legközelebbi vízfolyás

**SELECT varos.nev, folyo.nev, ST_Distance(varos.geom, folyo.geom)
FROM varos CROSS JOIN folyo
WHERE varos.nev='Eger' ORDER BY 3 LIMIT 1**

Az egyes városokhoz legközelebbi vízfolyás távolsága

**SELECT v.nev, min(ST_Distance(v.geom, f.geom))
FROM varos AS v CROSS JOIN folyo AS f
GROUP BY v.nev
ORDER BY 2;**



Egyszerű lekérdezések 2.



Egymáshoz legközelebbi város-folyó párok

```
SELECT v.nev, f.nev, ST_Distance(v.geom, f.geom)
FROM varos AS v CROSS JOIN folyo AS f
WHERE (v.nev, ST_Distance(v.geom, f.geom)) in (
SELECT varos.nev, min(ST_Distance(varos.geom, folyo.geom))
FROM varos CROSS JOIN folyo
WHERE varos.nev = v.nev
GROUP BY varos.nev);
```

Városok melyik megyébe esnek

```
SELECT megye.nev AS megye, varos.nev AS varos FROM
Varos INNER JOIN megye
ON ST_Contains(megye.geom, varos.geom)
ORDER BY varos.nev;
```

Veszprém megye szomszédai

```
SELECT b.nev FROM megye AS a INNER JOIN megye AS b
ON ST_Touches(a.geom, b.geom)
WHERE a.nev='Veszprém' and b.nev <> 'Veszprém';
```



Térbeli elemzések SQL

Legcsapadékosabb város

```
SELECT varos.nev, csapadek.mm FROM  
    csapadek INNER JOIN varos ON  
        ST_Contains(csapadek.geom, varos.geom)  
WHERE csapadek.mm = (  
    SELECT max(mm) FROM csapadek INNER JOIN varos ON  
        ST_Contains(csapadek.geom, varos.geom));
```

Összesen a leghosszabb folyószakaszokat tartalmazó megye

```
SELECT nev, sum(ST_Length(geom)) FROM  
    (SELECT megye.nev as nev,  
        ST_Intersection(megye.geom, folyo.geom) AS geom  
    FROM megye INNER JOIN folyo  
        ON (ST_INTERSECTS(megye.geom, folyo.geom))) AS szakasz  
GROUP BY nev  
ORDER BY 2 DESC LIMIT 1;
```

Térbeli elemzések grafikus eredménnyel

Erdei talajok (tábla összekapcsolás)

```
SELECT tal.gid AS gid, talajok.talaj_nev AS nev, tal.geom AS geom  
FROM tal INNER JOIN talajok ON tal.tipus=talajok.tipus  
WHERE talajok.talaj_nev LIKE '%erdei';
```

Folyó szakaszok megyénként

```
SELECT megye.gid * 100 + folyo.gid AS gid, megye.nev, folyo.nev,  
ST_Intersection(megye.geom, folyo.geom) AS geom  
FROM megye INNER JOIN folyo  
ON (ST_INTERSECTS(megye.geom, folyo.geom));
```

Talajok és napsütéses órák metszete

```
SELECT ROW_NUMBER() OVER () AS gid, tipus, ora, geom  
FROM (SELECT tal.tipus, nap.ora,  
(ST_Dump(ST_Intersection(tal.geom, nap.geom))).geom AS geom  
FROM tal INNER JOIN nap ON  
ST_Intersects(tal.geom, nap.geom)) AS talnap  
WHERE ST_GeometryType(geom) = 'ST_Polygon';
```



Térbeli elemzések grafikus eredménnyel

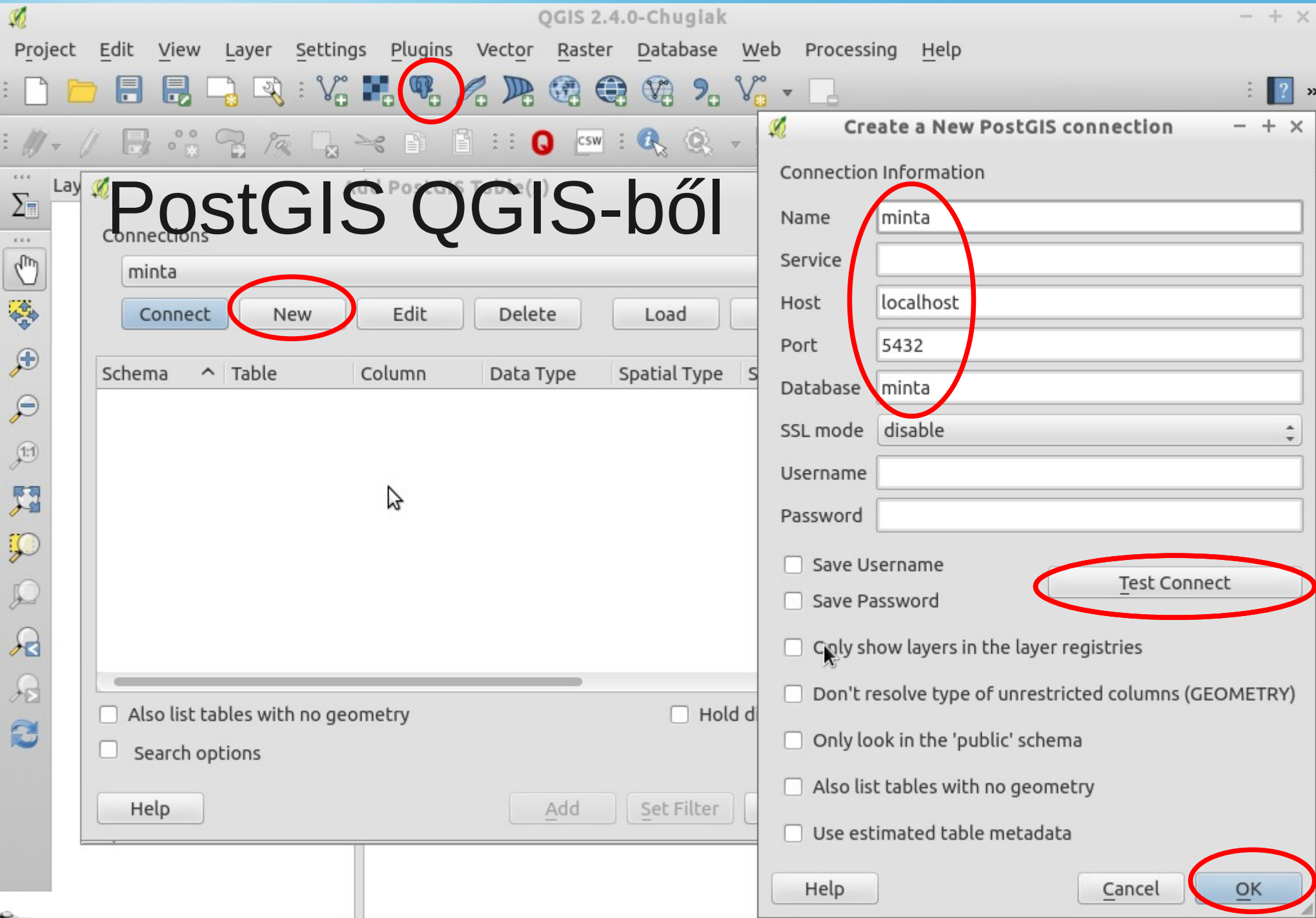
Folyó szakaszok megyénként

```
SELECT megye.gid * 100 + folyo.gid AS gid, megye.nev, folyo.nev,  
ST_Intersection(megye.geom, folyo.geom) AS geom  
FROM megye INNER JOIN folyo  
ON (ST_INTERSECTS(megye.geom, folyo.geom));
```

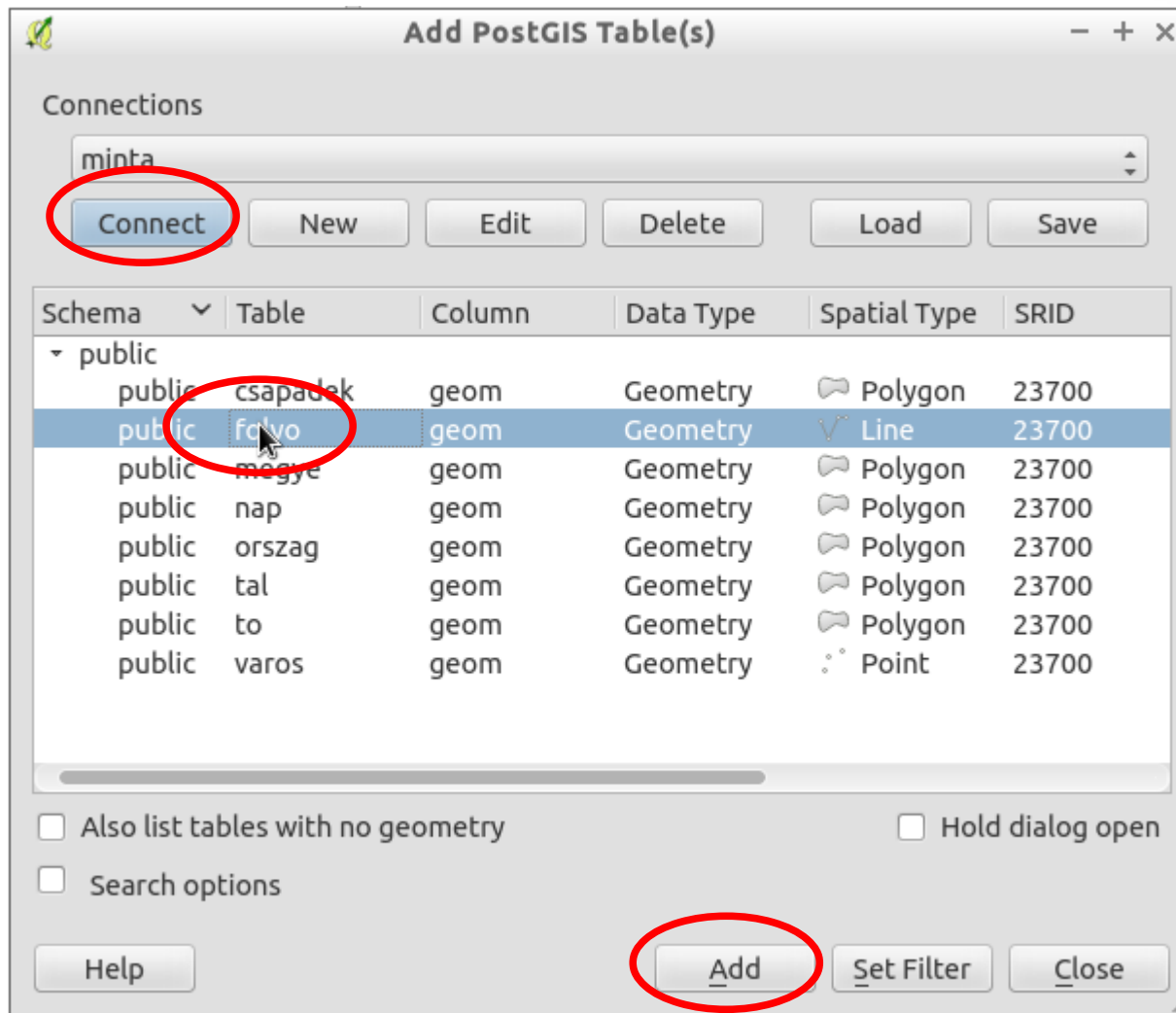
Talajok és napsütéses órák metszete

```
SELECT ROW_NUMBER() OVER () AS gid, tipus, ora, geom  
FROM (SELECT tal.tipus, nap.ora,  
(ST_Dump(ST_Intersection(tal.geom, nap.geom))).geom AS geom  
FROM tal INNER JOIN nap ON  
ST_Intersects(tal.geom, nap.geom)) AS talnap  
WHERE ST_GeometryType(geom) = 'ST_Polygon';
```





PostGIS réteg



Megjelenítés QGIS-ben

