

DEALING WITH DATA

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NYU | STERN

The background features a light gray gradient with faint, concentric circular patterns. In the corners, there are decorative elements resembling circuit board traces or neural network connections, consisting of thin lines and small circles.

CLASS 5: **SQLTESTUDIO ACTIONS**

MARCH 14, 2019

CONTENTS*

1. Creating a database
2. Creating a table
3. Importing data
4. Executing SQL queries

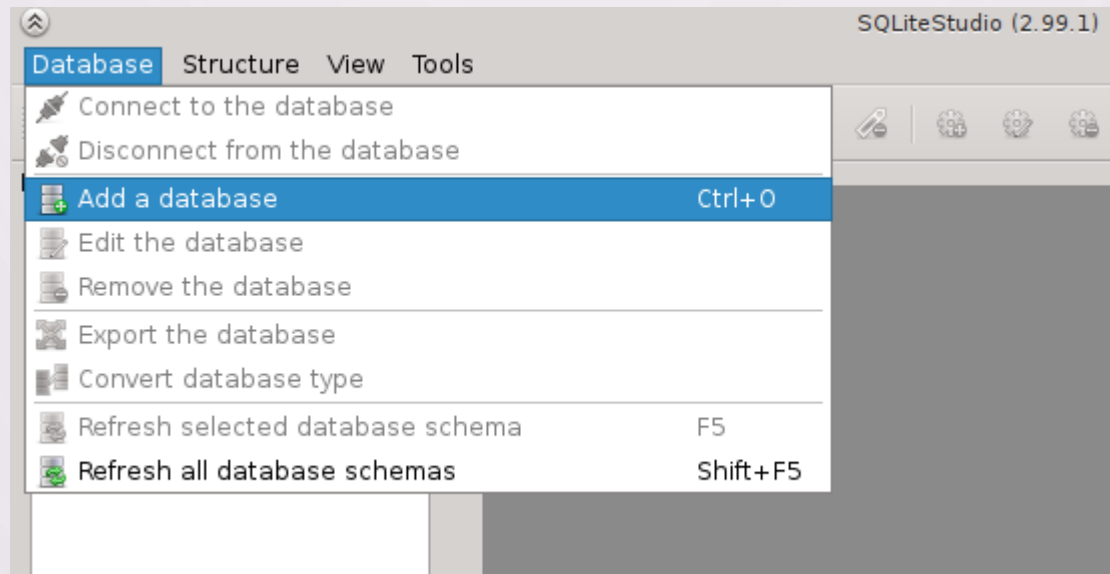
* Adapted from the official SQLiteStudio User Manual at

https://github.com/pawelsalawa/sqlitestudio/wiki/User_Manual

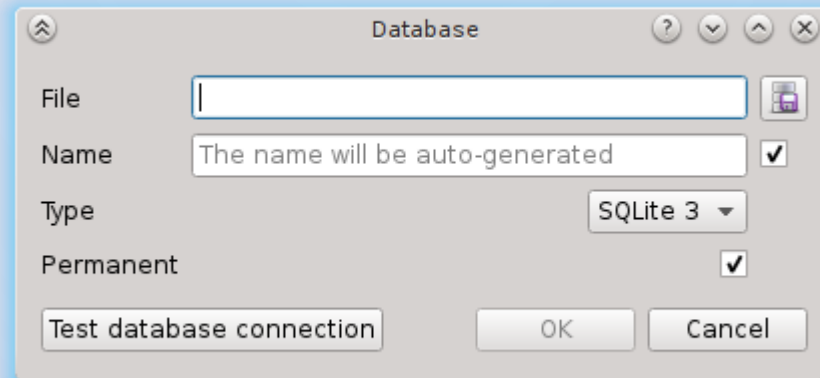
The background features a light purple gradient with faint, concentric circular patterns. In the corners, there are decorative elements resembling circuit board traces or neural network connections, consisting of thin lines and small circles.

CREATING A DATABASE

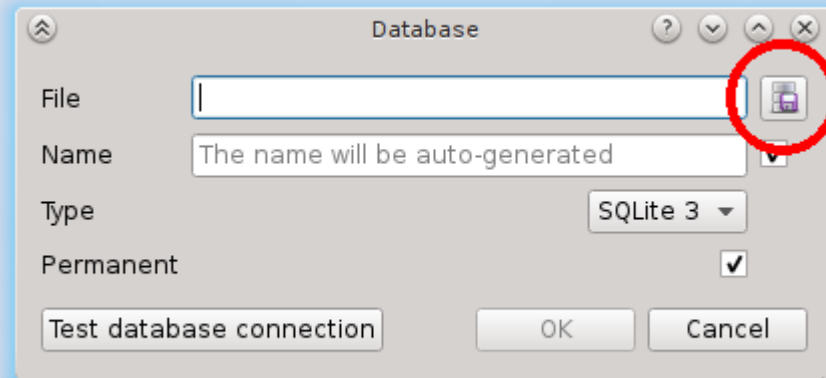
CREATING A DATABASE – STEP 1: INITIATE ACTION



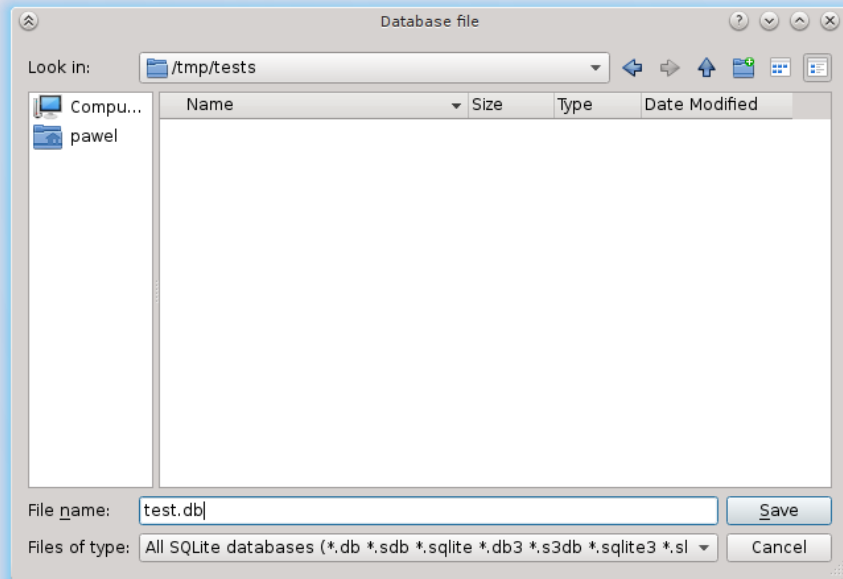
CREATING A DATABASE – STEP 2: DATABASE DIALOG WILL APPEAR



CREATING A DATABASE – STEP 3: CLICK ICON TO BROWSE FILES



CREATING A DATABASE – STEP 4: FILE BROWSE WINDOW APPEARS

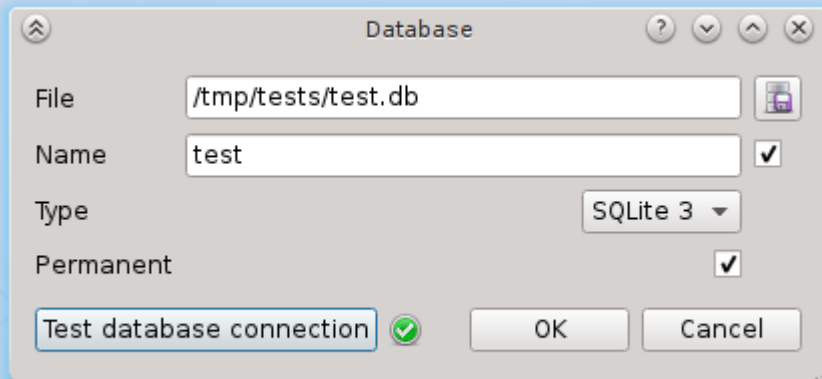


NOTE: the dialog will look different depending on your laptop operating system

1. In this dialog go to directory where you want to create your database and type in the file name for your database (on the image above it's "test.db").
2. Click "Save".
3. Now the database dialog has file name and database name filled in. (You can change the name to whatever you want (in which case you have to disable the checkbox on the right hand side), or just leave it as it is.)

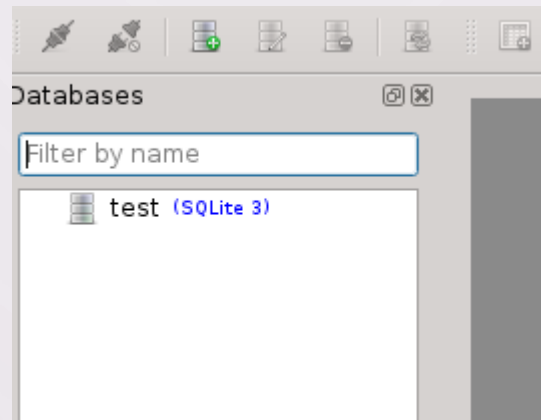
The database name is just symbolic name, an alias used by SQLiteStudio to present database in the list. You can pick any name you want, it just has to be unique in context of databases already added to SQLiteStudio.

CREATING A DATABASE – STEP 5: DATABASE DIALOG RE-APPEARS

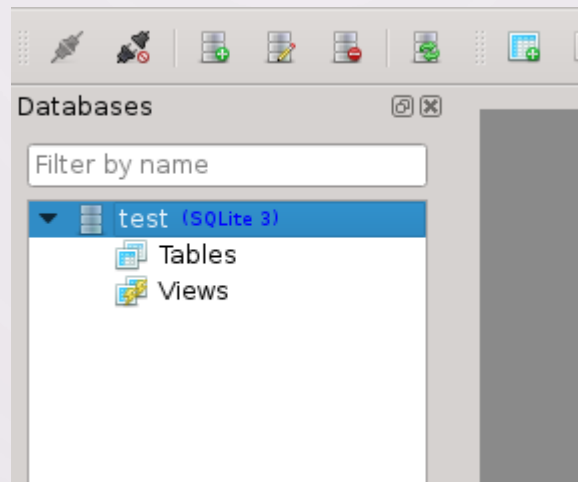


1. You can press "Test connection" to make sure that your database file can be created in specified localization (in regards of directory permissions, free space, etc).
 1. If everything is okay, than you will see green icon next to it
 2. If there was any problem, the red icon will appear.
2. You can now press "Ok" to create the database

CREATING A DATABASE – STEP 6: NEW DATABASE APPEARS IN MAIN VIEW'S LEFT NAVIGATION WINDOW



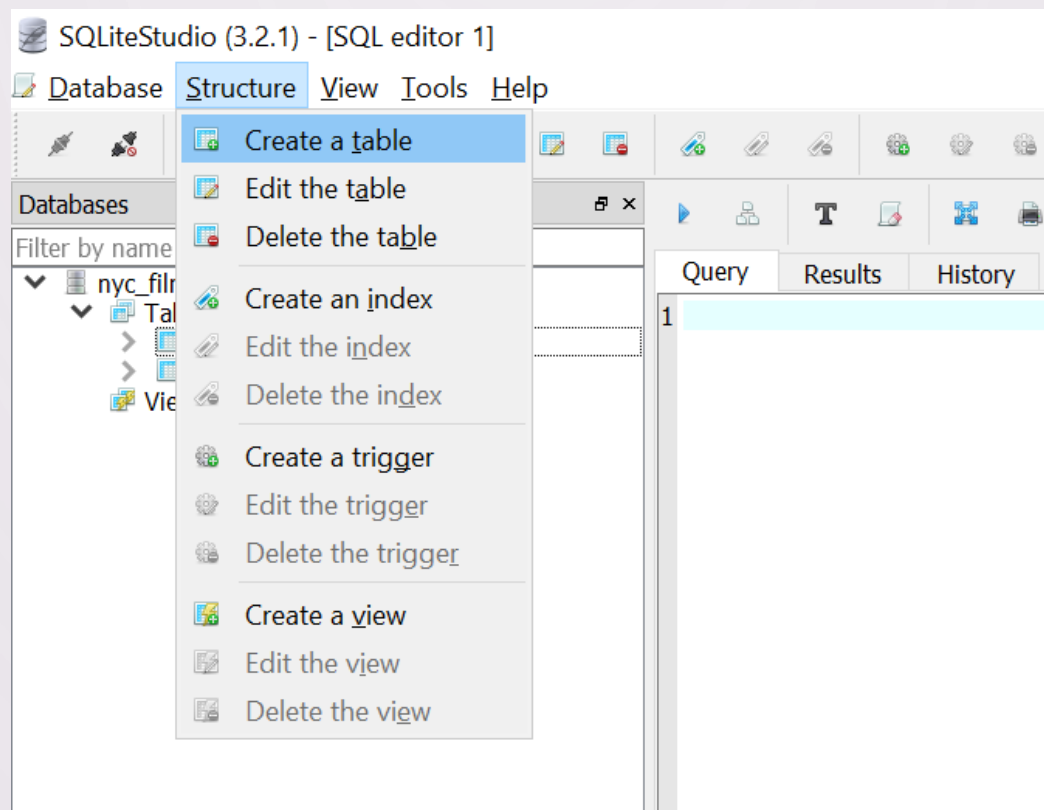
CREATING A DATABASE – STEP 7: DOUBLE CLICK NEW DATABASE IN LEFT NAV TO VIEW DETAILS (TABLES, VIEWS)



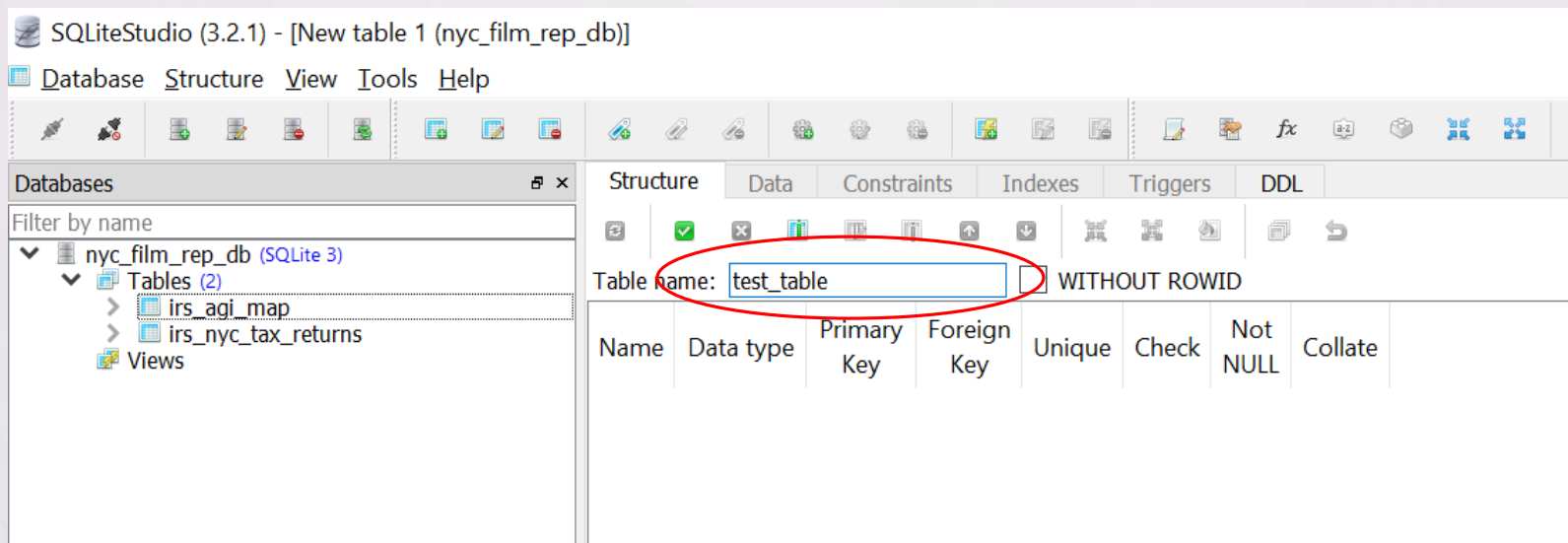
The background features a light purple gradient with faint, concentric circular patterns. In the corners, there are decorative circuit-like lines in a darker purple color, consisting of straight lines and small circles, resembling a stylized electronic board.

CREATING A TABLE

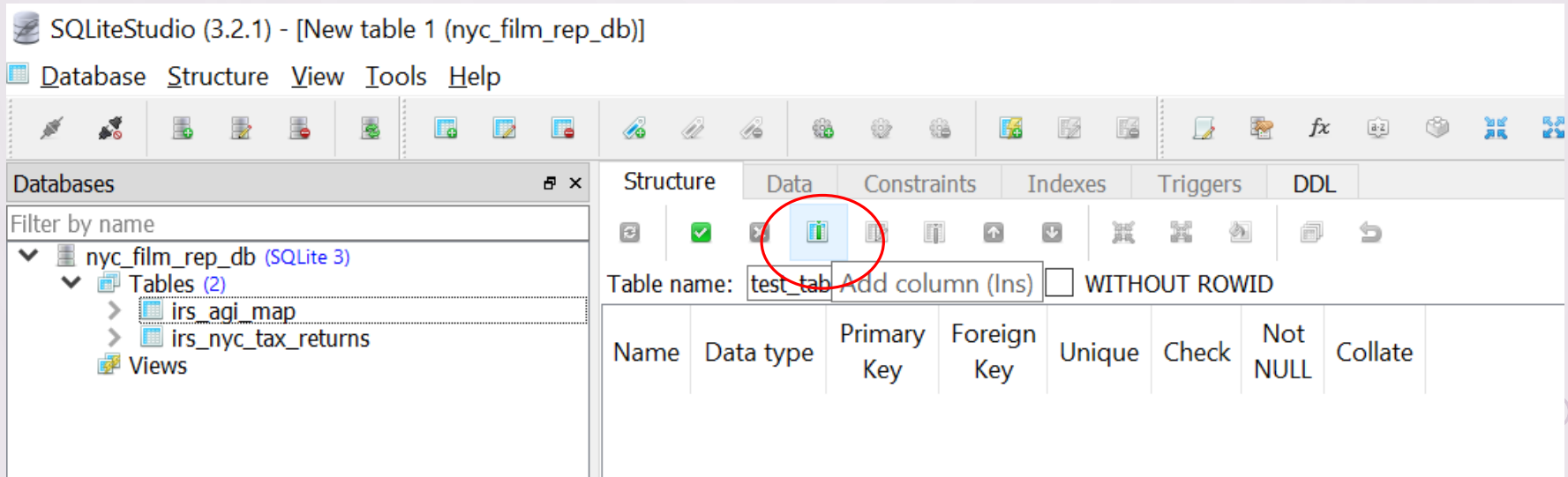
CREATING A TABLE – STEP 1: SELECT DATABASE AND INITIATE ACTION



CREATING A TABLE – STEP 2: NAME TABLE



CREATING A TABLE – STEP 3: HIT ADD COLUMN ICON

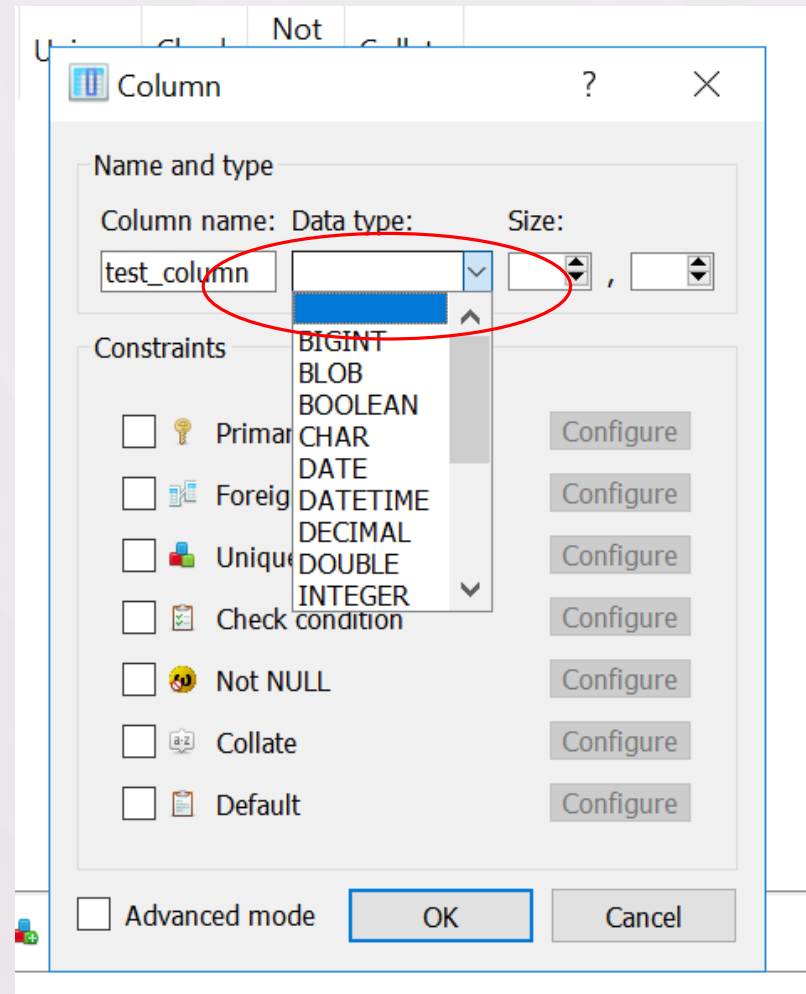


CREATING A TABLE – STEP 4: CREATE COLUMN NAME

The screenshot shows a 'Column' dialog box with the following sections:

- Name and type**
 - Column name: [Text field]
 - Data type: [Dropdown menu]
 - Size: [Spinners]
- Constraints**
 - ☐ Primary Key [Configure]
 - ☐ Foreign Key [Configure]
 - ☐ Unique [Configure]
 - ☐ Check condition [Configure]
 - ☐ Not NULL [Configure]
 - ☐ Collate [Configure]
 - ☐ Default [Configure]
- ☐ Advanced mode
- OK** **Cancel**

CREATING A TABLE – STEP 5: CHOOSE COLUMN DATA TYPE



CREATING A TABLE – STEP 5: OPTIONAL STEP #1: MAKE COLUMN PRIMARY KEY

Column

Name and type

Column name: Data type: Size:

test_column VARCHAR ,

Constraints

- ☒ Primary Key [Configure](#)
- ☐ Foreign Key [Configure](#)
- ☐ Unique [Configure](#)
- ☐ Check condition [Configure](#)
- ☐ Not NULL [Configure](#)
- ☐ Collate [Configure](#)
- ☐ Default [Configure](#)

☐ Advanced mode [OK](#) [Cancel](#)

CREATING A TABLE – STEP 5: OPTIONAL STEP #2-1: MAKE COLUMN FOREIGN KEY AND CLICK “CONFIGURE”

Column

Name and type

Column name: Data type: Size:

test_column VARCHAR ,

Constraints

- ☐ Primary Key [Configure](#)
- ☒ Foreign Key [Configure](#)
- ☐ Unique [Configure](#)
- ☐ Check condition [Configure](#)
- ☐ Not NULL [Configure](#)
- ☐ Collate [Configure](#)
- ☐ Default [Configure](#)

☐ Advanced mode [OK](#) [Cancel](#)

CREATING A TABLE – STEP 5: OPTIONAL STEP #2-2: CONFIGURE FOREIGN TABLE AND COLUMN, CLICK “APPLY”

Edit constraint

Foreign key

Foreign table:

Foreign column:

Reactions

☐ ON UPDATE

☐ ON DELETE

☐ MATCH

Deferred foreign key

☐ Named constraint

Apply **Cancel**

CREATING A TABLE – STEP 6: CLICK OK TO CREATE COLUMN

Column

Name and type

Column name: Data type: Size:

test_column VARCHAR ,

Constraints

- ☒ Primary Key [Configure](#)
- ☐ Foreign Key [Configure](#)
- ☐ Unique [Configure](#)
- ☐ Check condition [Configure](#)
- ☐ Not NULL [Configure](#)
- ☐ Collate [Configure](#)
- ☐ Default [Configure](#)

☐ Advanced mode [OK](#) [Cancel](#)

CREATING A TABLE – STEP 7: COLUMN APPEARS IN TABLE SETUP

SQLiteStudio (3.2.1) - [New table 1 (nyc_film_rep_db)]

Database Structure View Tools Help

Databases

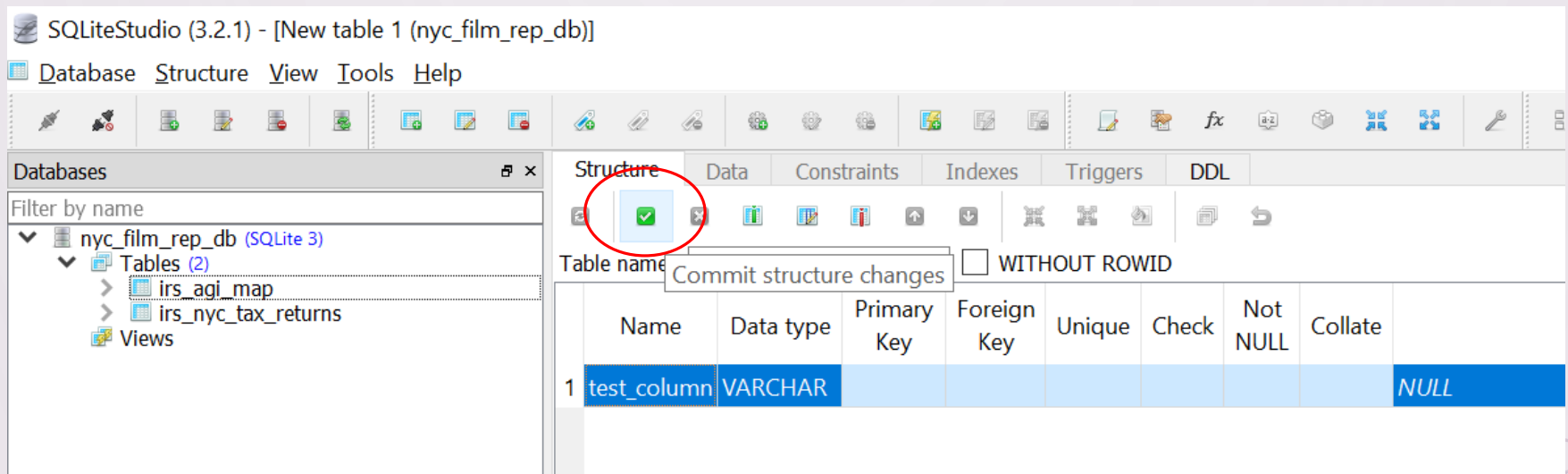
- nyc_film_rep_db (SQLite 3)
 - Tables (2)
 - irs_agi_map
 - irs_nyc_tax_returns
 - Views

Structure Data Constraints Indexes Triggers DDL

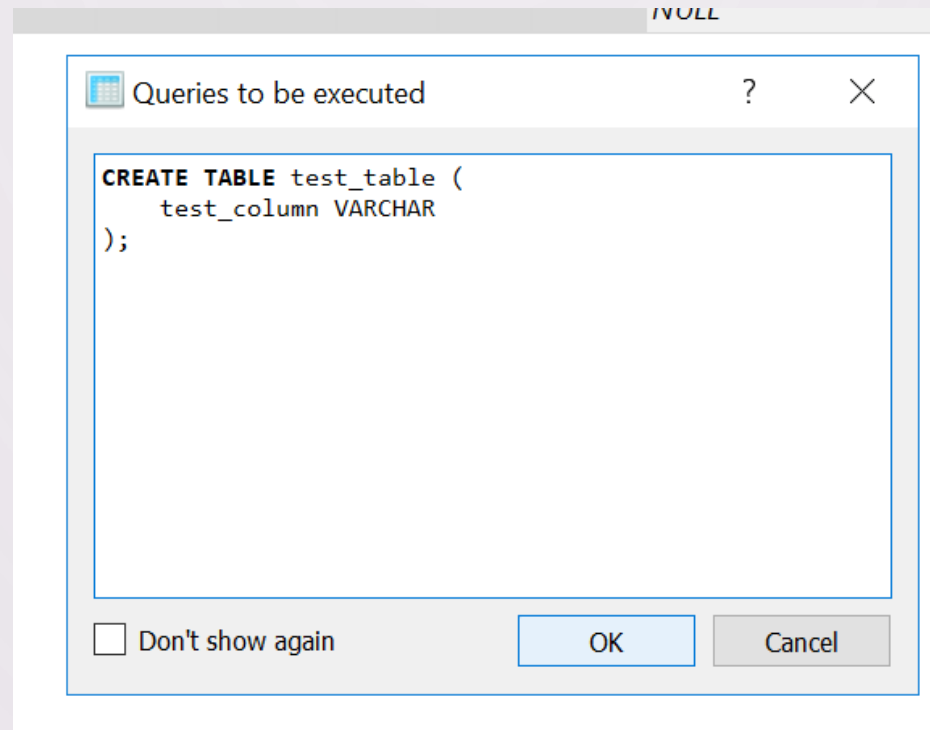
Table name: test_table ☐ WITHOUT ROWID

	Name	Data type	Primary Key	Foreign Key	Unique	Check	Not NULL	Collate	
1	test_column	VARCHAR							NULL

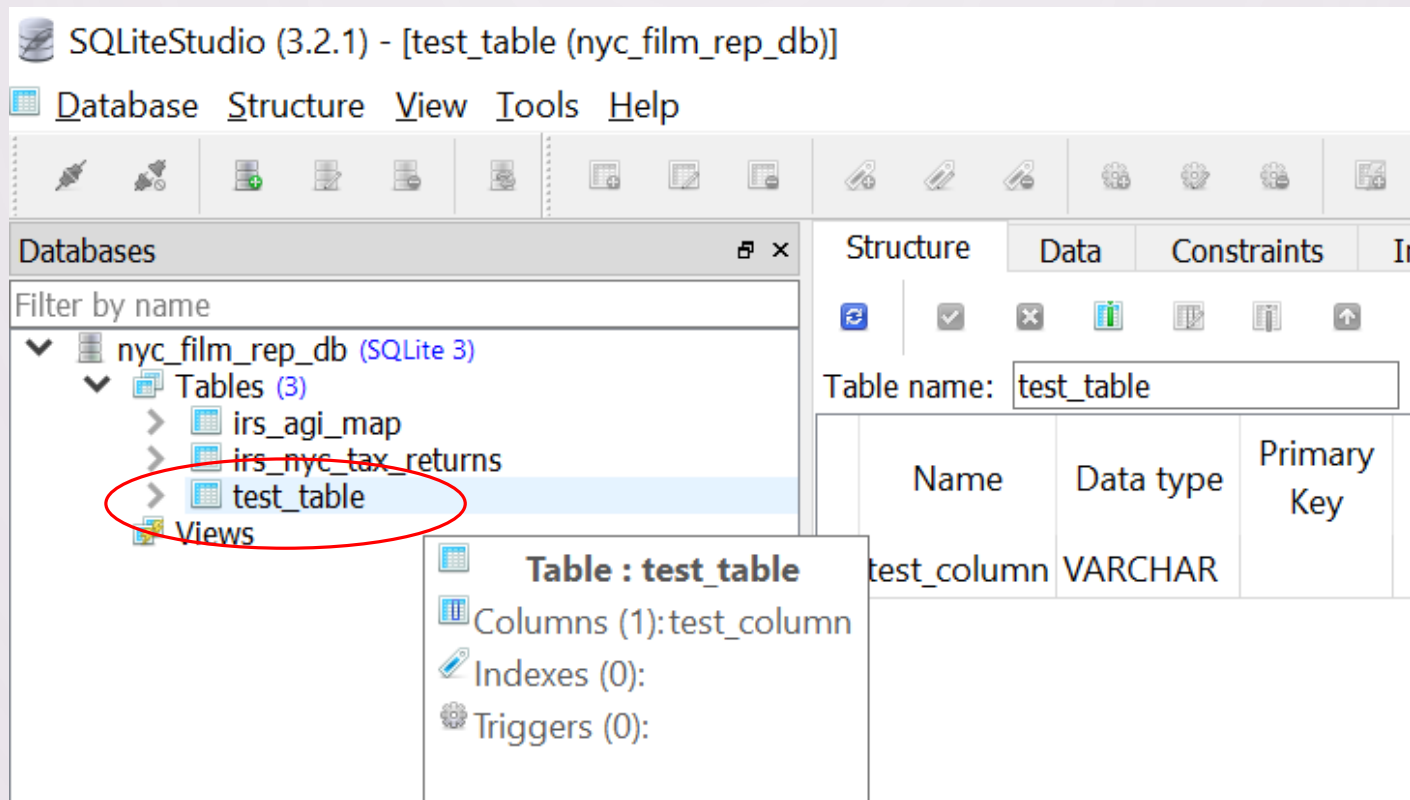
CREATING A TABLE – STEP 8: EXECUTE TABLE CREATION USING ICON



CREATING A TABLE – STEP 9: EXECUTE TABLE BY CLICKING OK



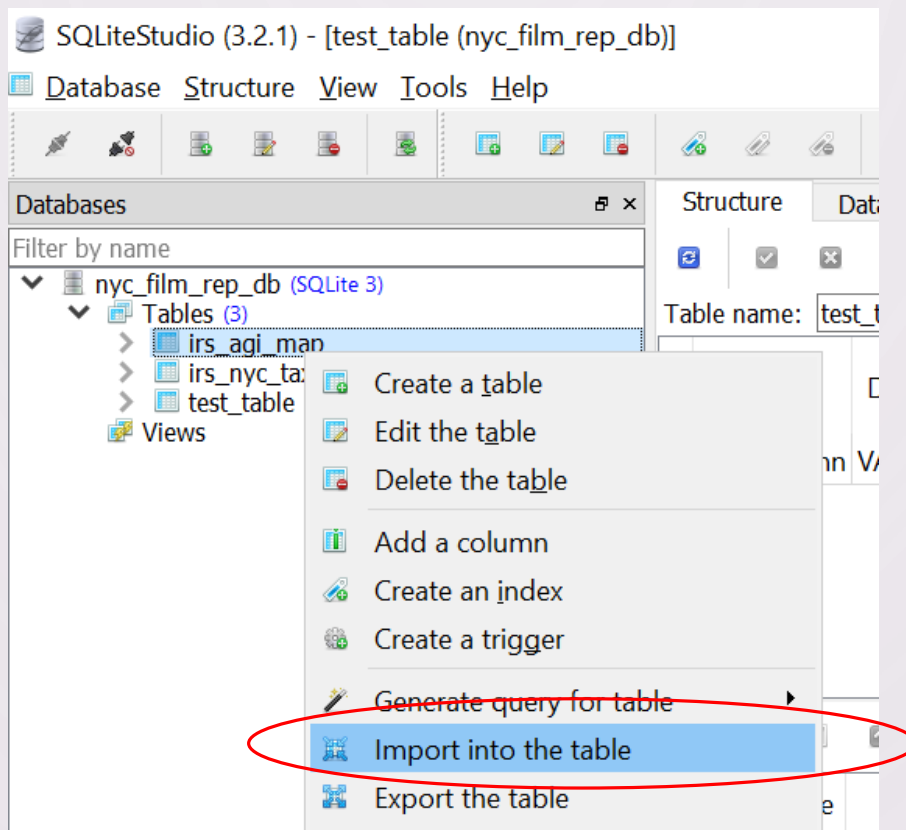
CREATING A TABLE – STEP 9: NEW TABLE APPEARS UNDER DATABASE IN LEFT NAV



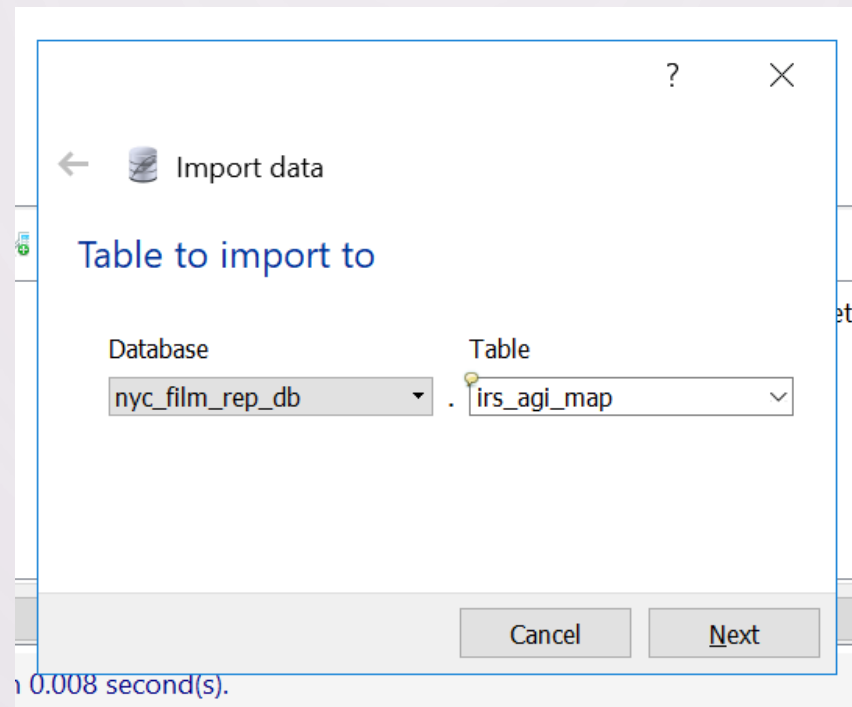
The background features a light purple gradient with faint, concentric circular patterns. In the corners, there are decorative elements resembling circuit board traces or data lines, with some lines ending in small circles.

IMPORTING DATA

IMPORTING DATA – STEP 1: RIGHT CLICK ON DESTINATION TABLE AND INITIATE ACTION



IMPORTING DATA – STEP 2: CONFIRM DESTINATION DATABASE AND TABLE, AND CLICK “NEXT”



IMPORTING DATA – STEP 3: LOCATE SOURCE CSV* FILE BY CLICKING FOLDER ICON


Import data

Data source to import from

Data source type

CSV

Options

Input file: 

Text encoding:

☐ Ignore errors

Data source options

☒ First line represents CSV column names

Field separator:

☒ NULL values:

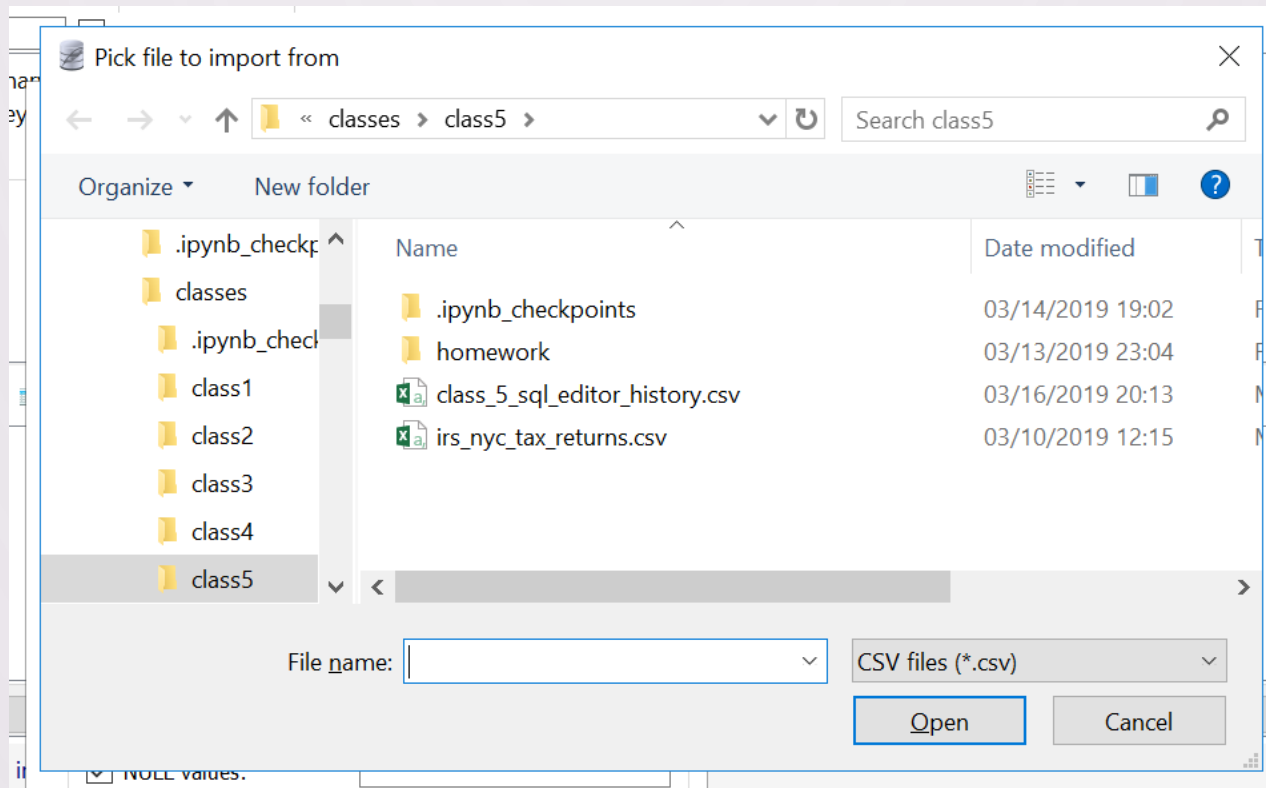
Cancel Finish

***Data Source Type = CSV**

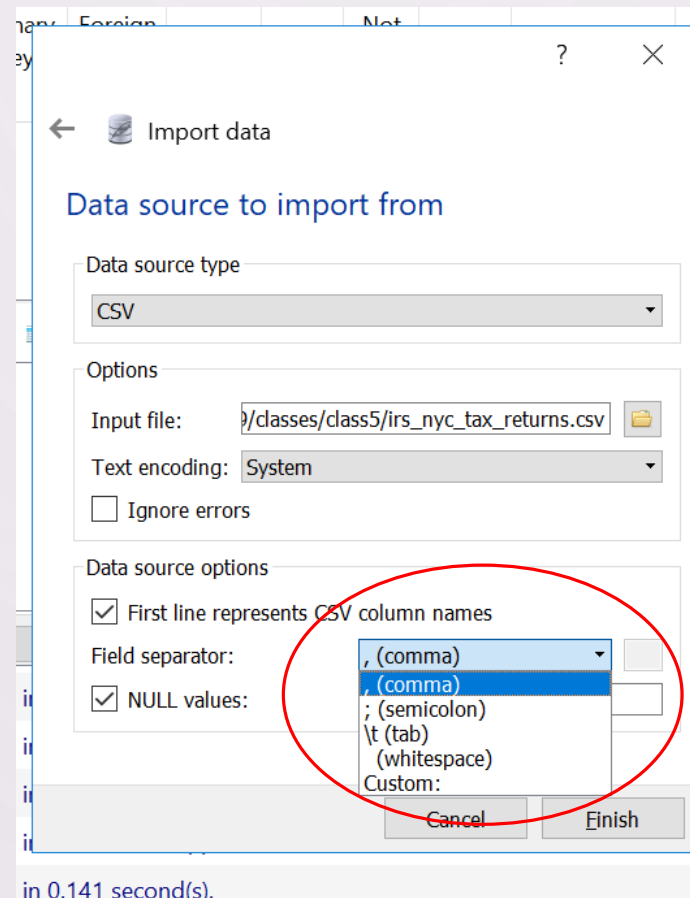
indicates the source file has some type of separator between data fields. It should be used for ALL files that use a comma, tab, or other delimiter

IMPORTING DATA – STEP 4: SELECT SOURCE CSV FILE

(VIEW MAY DIFFER DEPENDING ON OPERATING SYSTEM)



IMPORTING DATA – STEP 5: CONFIRM DATA FIELD SEPARATOR USED IN SOURCE FILE




Import data

Data source to import from

Data source type: CSV

Options

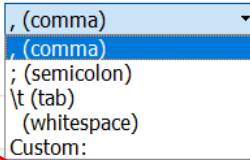
Input file: 

Text encoding: System

☐ Ignore errors

Data source options

☒ First line represents CSV column names

Field separator: 

☒ NULL values:

Cancel Finish

in 0.141 second(s).

IMPORTING DATA – STEP 6: WHEN SOURCE FILE HAS COLUMN HEADERS IN FIRST LINE, CHECK APPROPRIATE BOX

Import data

Data source to import from

Data source type

CSV

Options

Input file: D:/classes/class5/irs_nyc_tax_returns.csv

Text encoding: System

☐ Ignore errors

Data source options

☒ First line represents CSV column names

Field separator: , (comma)

☒ NULL values:

Cancel Finish

IMPORTING DATA – STEP 7: MAKE SURE NULL VALUES BOX IS CHECKED AND CLICK FINISH TO IMPORT

Import data

Data source to import from

Data source type

CSV

Options

Input file: /classes/class5/irs_nyc_tax_returns.csv

Text encoding: System

☐ Ignore errors

Data source options

☒ First line represents CSV column names

Field separator: , (comma)

☒ NULL values:

Cancel Finish

IMPORTING DATA – STEP 8: SELECT “DATA” TAB FOR YOUR DESTINATION TABLE TO SEE NEWLY IMPORTED DATA

SQLiteStudio (3.2.1) - [irs_agi_map (nyc_film_rep_db)]

Database Structure View Tools Help

Databases

Filter by name

- nyc_film_rep_db (SQLite 3)
 - Tables (3)
 - irs_agi_map
 - Columns (2)
 - Indexes
 - Triggers
 - irs_nyc_tax_returns
 - test_table
 - Views

Structure Data Constraints Indexes Triggers DDL

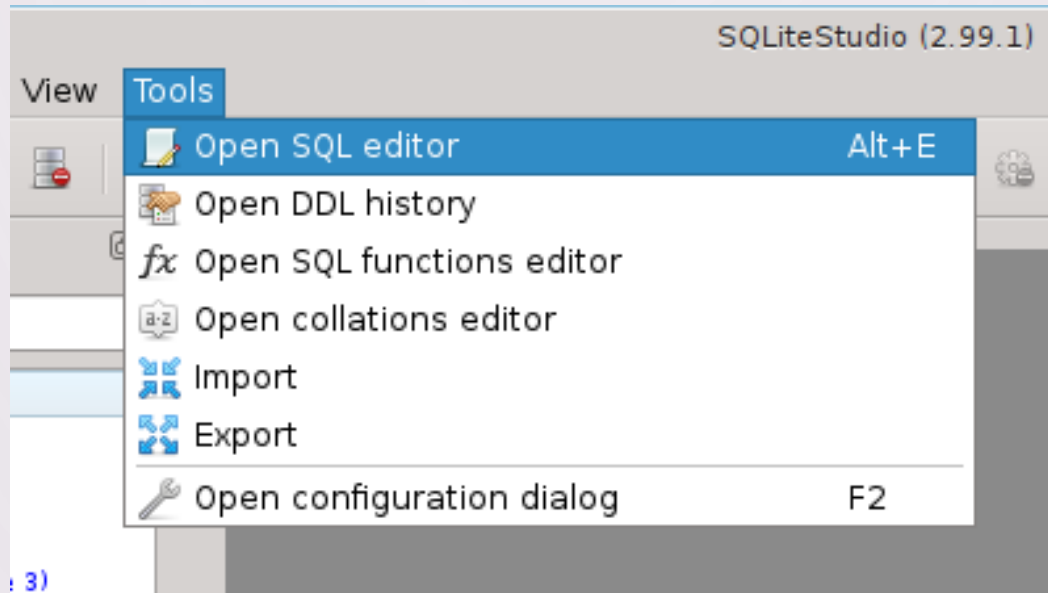
Grid view Form view

	agi_map_id	agi_descrip
1	1	\$1 under \$25,000
2	2	\$25,000 under \$50,000
3	3	\$50,000 under \$75,000
4	4	\$75,000 under \$100,000
5	5	\$100,000 under \$200,000
6	6	\$200,000 or more

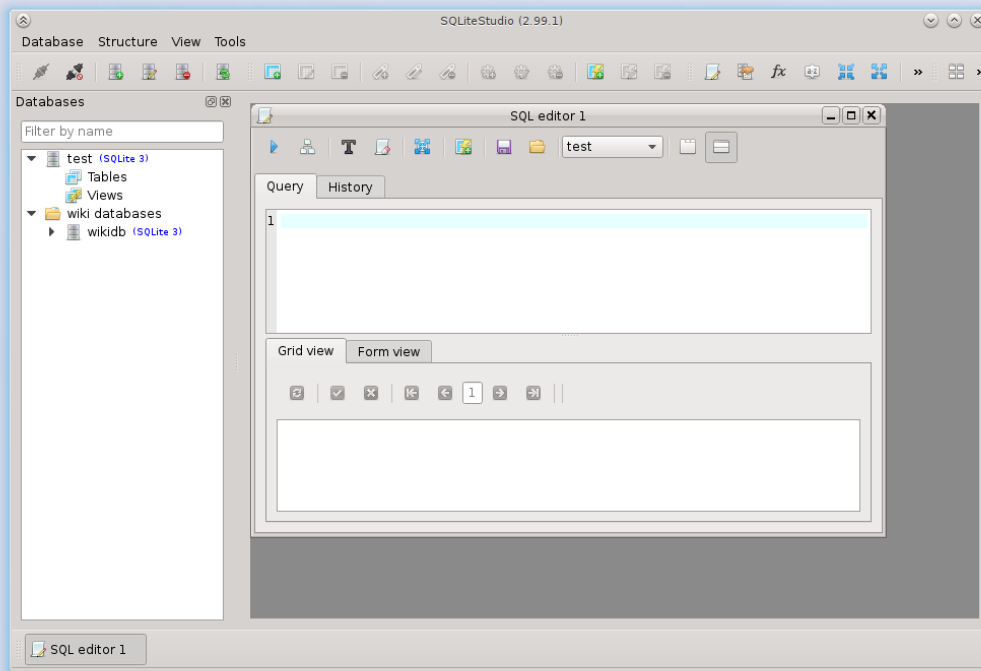
The background features a light purple gradient with faint, concentric circular patterns. In the corners, there are decorative line art elements resembling circuit boards or neural networks, with lines and small circles connecting in various directions.

EXECUTING SQL QUERIES

SQL QUERIES – STEP 1: OPEN SQL EDITOR WINDOW



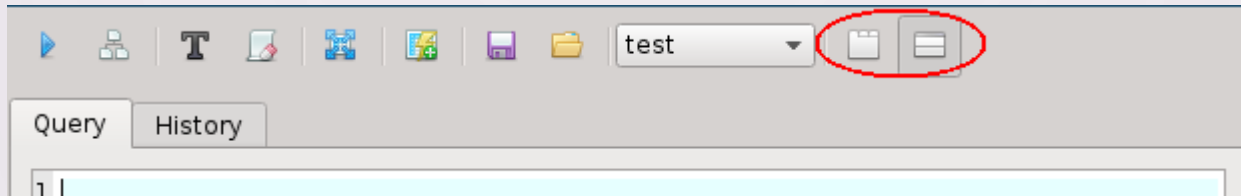
SQL QUERIES – STEP 2: OPEN SQL EDITOR WINDOW



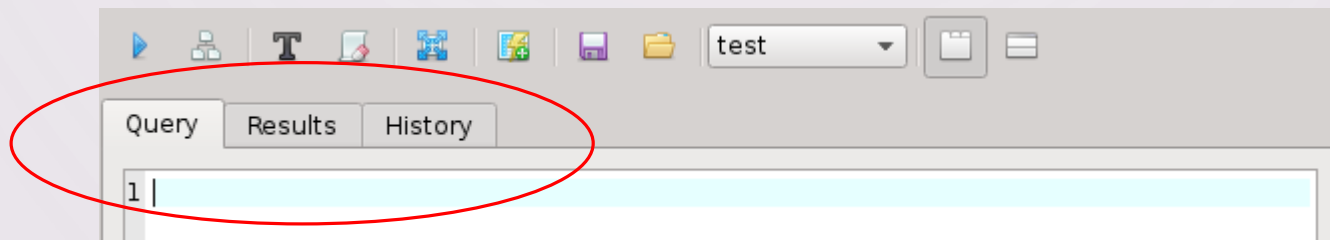
The SQL editor has a upper text edit for entering SQL queries and lower view for displaying results of the query:

SQL QUERIES – STEP 3: CUSTOMIZE RESULTS VIEW

If you prefer to have query edit field on one page and results on another page, you can switch it very quickly from toolbar:












And in the result you get 3 tabs in the editor,
instead of 2:



SQL QUERIES – STEP 4: KNOW YOUR TOOLBAR BUTTONS

Buttons on toolbar

- 1st button () executes query the you typed in the query text field below.
- 2nd button () executes `EXPLAIN` statement for the query below.
- 3rd button () uses currently configured [SqlFormatterPlugin](#) to format queries typed below.
- 4th button () clears query execution history (available in the last tab of the SQL Editor window).
- 5th button () opens [Export_dialog](#) for exporting results from query typed below.
- 6th button () creates view from the `SELECT` query typed below.
- 7th button () saves contents of the query text field below into the file.
- 8th button () loads contents of selected file into the query edit field below.
- 9th position is a combo box, where you can pick current working database for the SQL Editor window. All queries are executed on database selected in this combobox.
- 10th and 11th buttons () are a shortcut to configure SQL Editor results presentation mode - in separate tab, or below the query field.

SQL QUERIES – STEP 5: CREATE QUERY AND HIT “PLAY” BUTTON TO EXECUTE

