Cliente de base de datos

ESAT INNOVATION SCHOOL | ESCUELA SUPERIOR DE ARTE Y TECNOLOGÍA

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Curso 2022/2023

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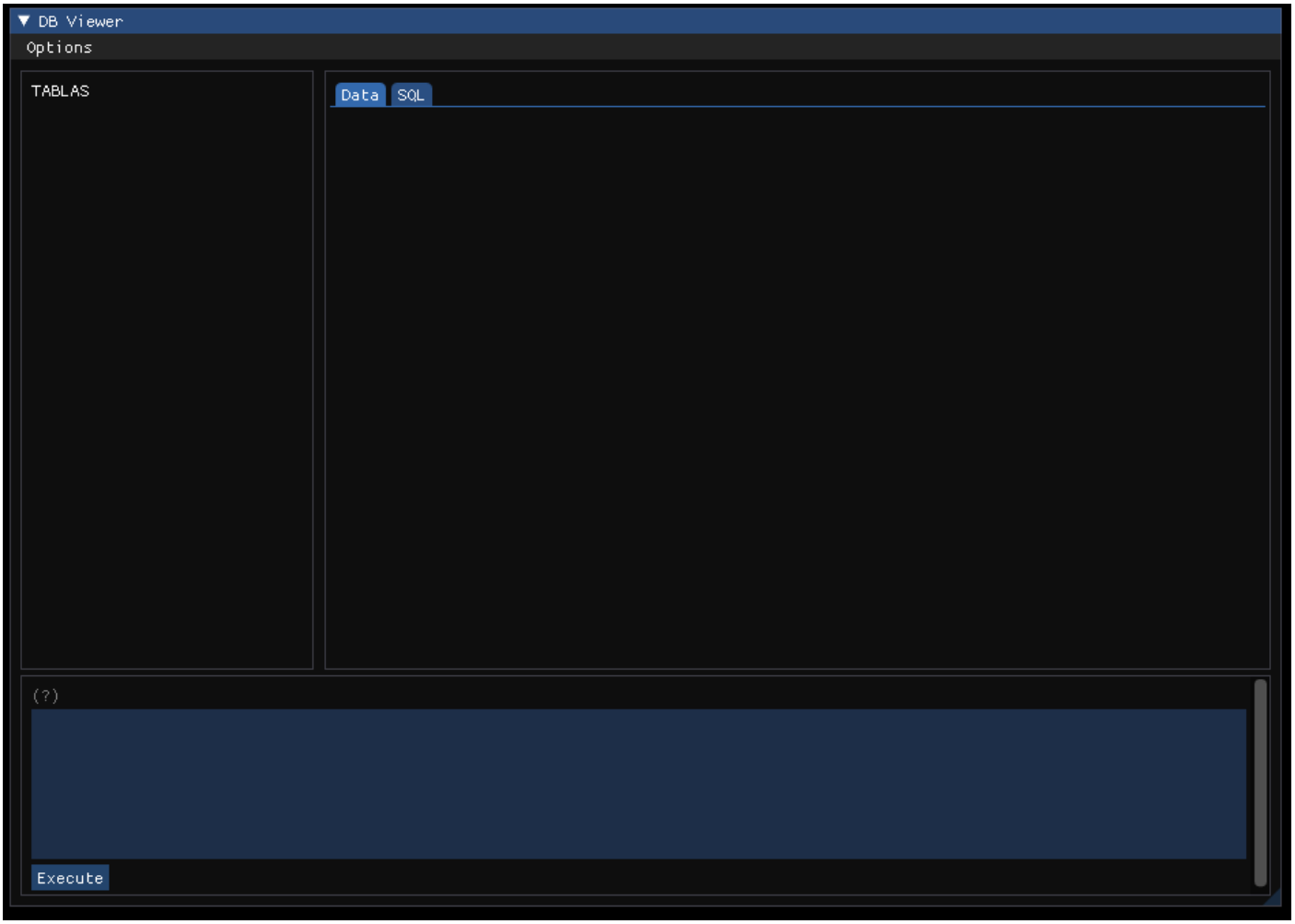
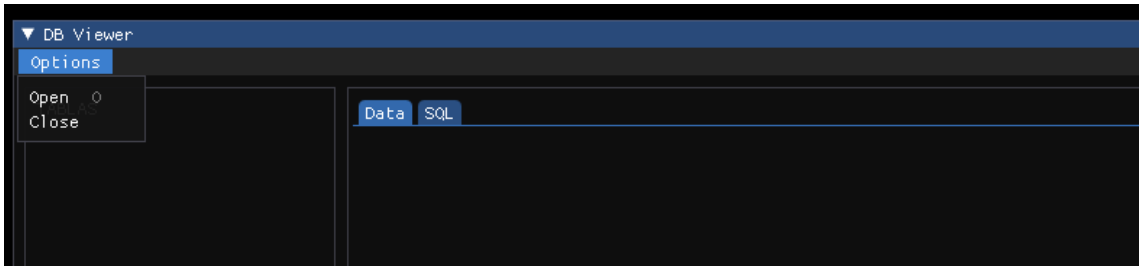
1.- User Guide

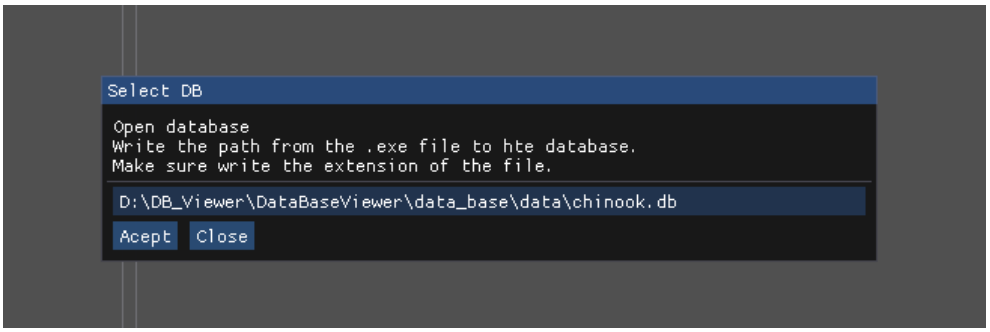
When you execute the application you can see a blue window with different options



You can open a database using the click on the top left button “Options” and select “Open” to open a database.

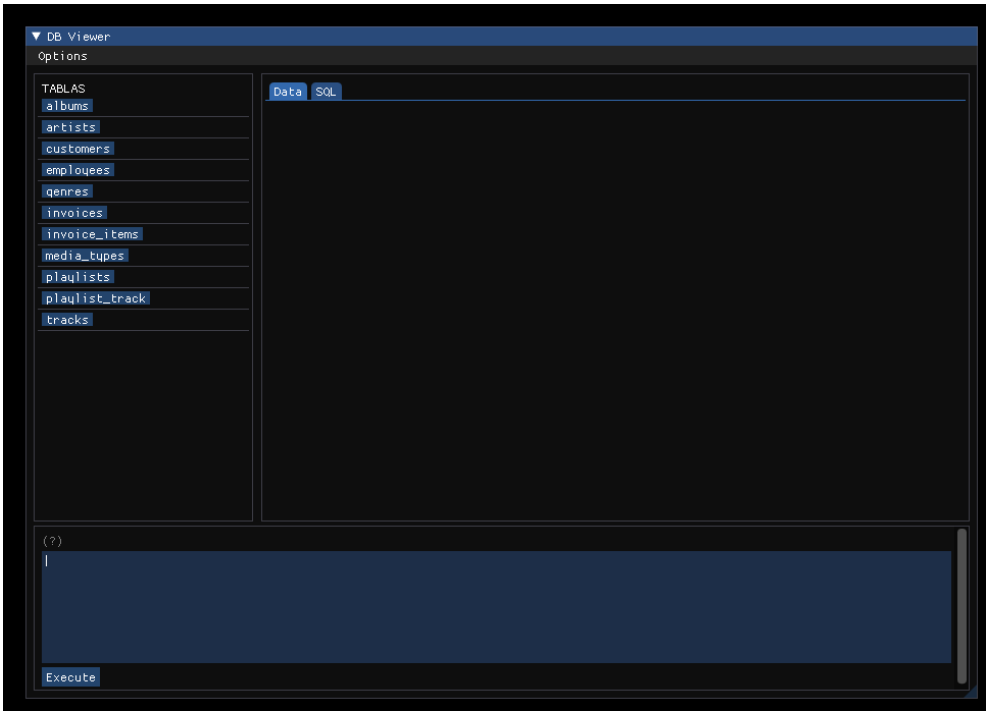


After, select the file “.db” in the file explorer and then click on accept



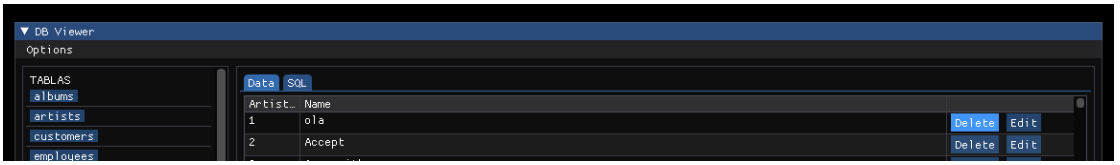
You can make sure that the path to the file is correct.

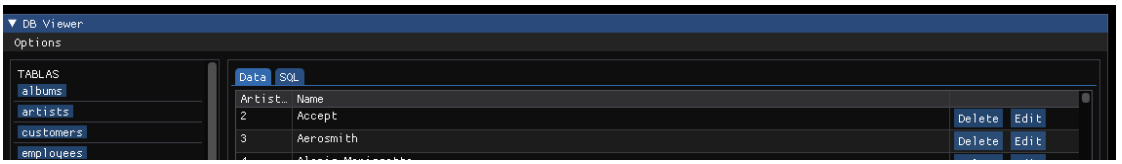
Now you can see a list of all tables on database and click on them to see their content.



When you see the content of table, you can edit or delete the rows clicking on the buttons “Delete” or “Edit”

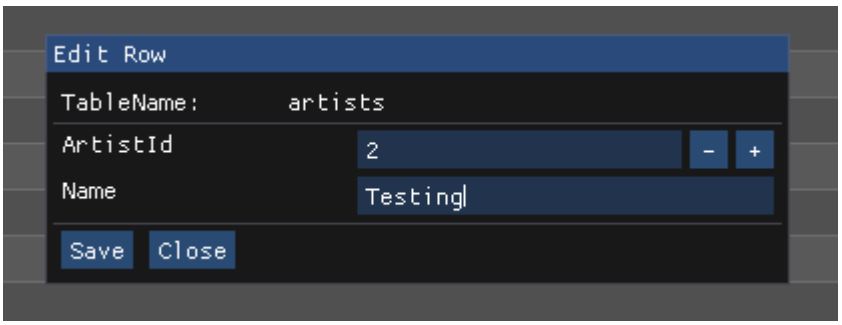
If you click “Delete” the row will be delete and updated on the table.





If you click on edit, a popup will appear to edit the data

We have a data validation of the columns. You only can set numeric values on a numeric column, text on a text column, etc.

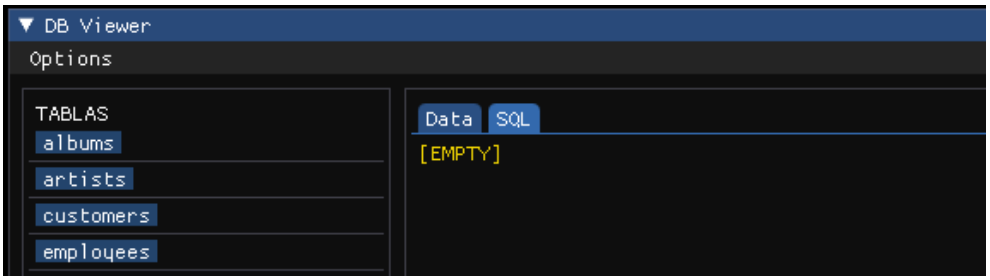


After editing, you can click on “Save” to save the current row or click on “Close” to close the pop up.

You have 2 different views, one for viewing the content of tables (Data), and other for the result of your own query (SQL).

Clicking on different buttons you can change the view.

Clicking on SQL you will see the result of query, if you don’t have executed a query yet, you will see a warning message.

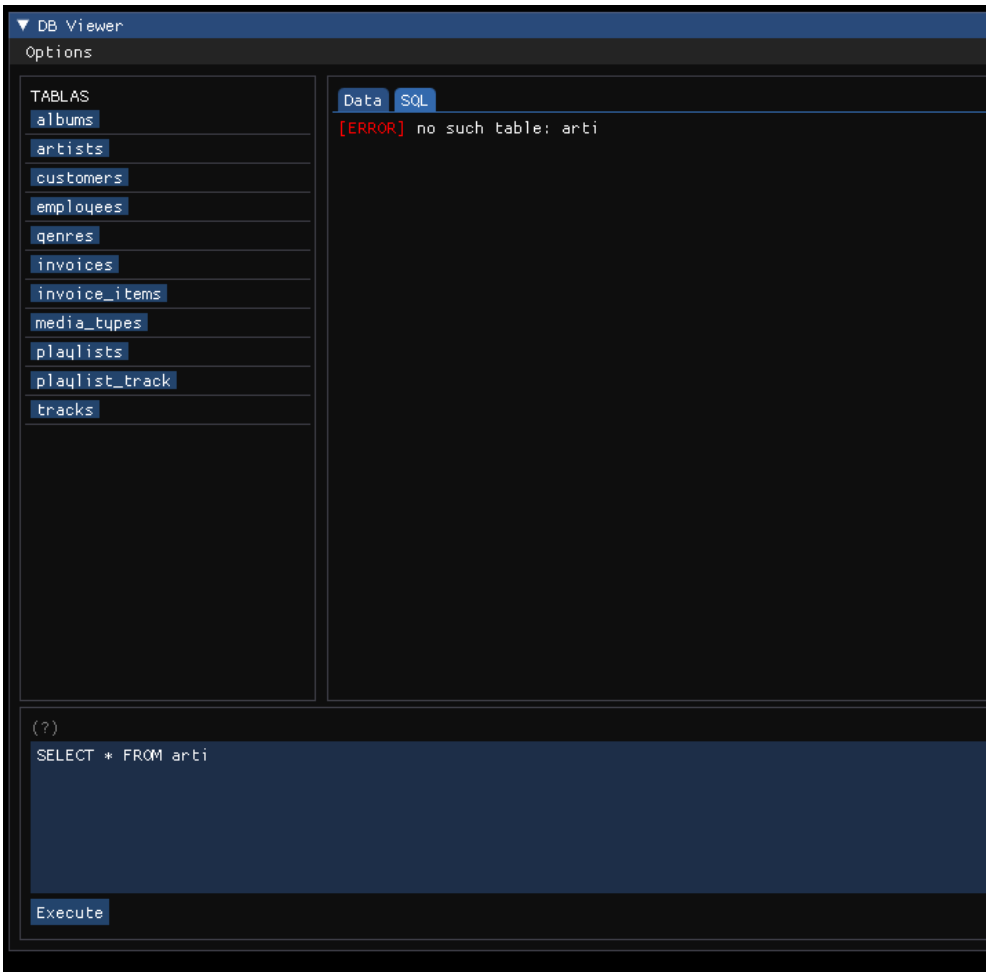


At the bottom of the window, you have a input text to write your query

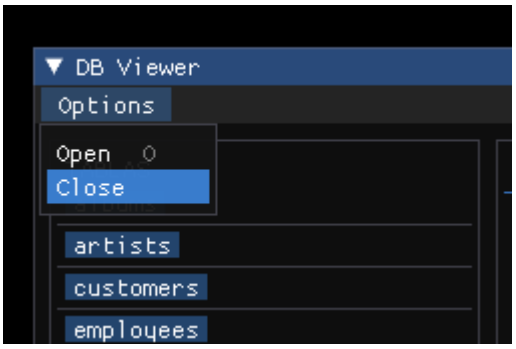
When your query is ready, press “Execute” button to execute your query.

When you execute a query you can see if the query is correctly executed or if an error has occurred. In case the query is correct and is a “SELECT” or “PRAGMA” query, the result is shown.

In case the query is not correct, you will see the message error returned by SQL.



You can close the database when you want clicking click on “Close” in “Options” menu at top left



2.- Data Base

This database is an example extracted from Sqlite Tutorial.

We have decided to use this database because it is correctly normalized, it has the number of tables that we need, not less and nothing more, and it is correctly related in terms of foreign keys.

2.1- Relationships

The relationships on this database are the following:

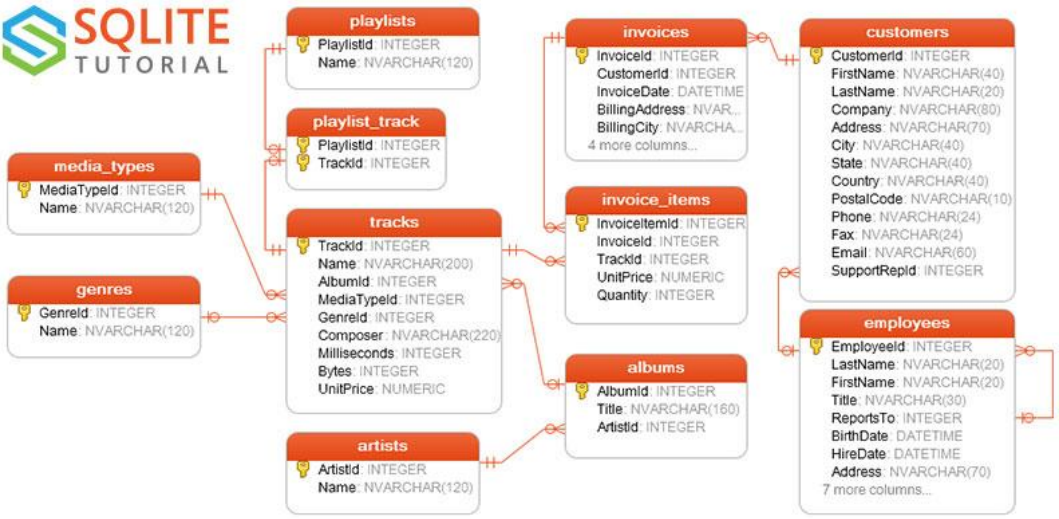


Fig. 1

2.2- Tables

- **Employees** table stores employees data such as employee id, last name, first name, etc. It also has a field named ReportsTo to specify who reports to whom.
- **Customers** table stores customers data.
- **invoices** & **invoice_items** tables: these two tables store invoice data. The invoices table stores invoice header data and the invoice_items table stores the invoice line items data.
- **Artists** table stores artists data. It is a simple table that contains only the artist id and name.
- **Albums** table stores data about a list of tracks. Each album belongs to one artist. However, one artist may have multiple albums.
- **Media_types** table stores media types such as MPEG audio and AAC audio files.
- **Genres** table stores music types such as rock, jazz, metal, etc.
- **Tracks** table stores the data of songs. Each track belongs to one album.
- **Playlists & playlist_track tables**: playlists table store data about playlists. Each playlist contains a list of tracks. Each track may belong to multiple playlists. The relationship between the playlists table and tracks table is many-to-many. The playlist_track table is used to reflect this relationship.

Fig 2

4.- Post-Morten

It has been an interesting practice, especially to familiarize ourself with the use of ImGui. We would have liked to add more features to the user interface but we were a little short on time.

Those features are, for example, adding a new table using the user interface, adding new columns to a table and inserting a new row to a table.

We had problems when it came to generalizing the database, and we managed to use a structure that we called "Table" in which we added the name of the table, its columns and its rows, making it general for any table.

We consider this way of extracting the data from the tables is appropriate, since we treat everything as if it were text, and when editing a row we take into account its data type in the database so that both match.

It has been interesting but it has not been especially funny and we have lacked that extra motivation to innovate and continue adding features.

I think if we have thought about what we need to do and how to do it, we could make better code.

5.- Bibliografía

Fig. 1: Relationships [digital image] sqlitetutorial.net [consulted 14/11/2022]. Available on: https://www.sqlitetutorial.net/wp-content/uploads/2015/11/sqlite-sample-database-color.jpg

Fig. 2: 2022. SQLite tutorials. En: *SQLite tutorial* [en línea]. Disponible en: https://www.sqlitetutorial.net/sqlite-sample-database/ [consulta: 14 Noviembre2022].