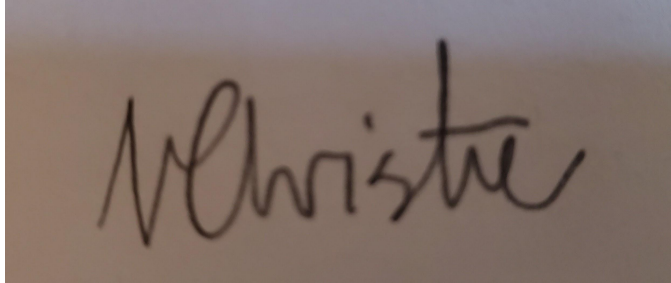


COMP 3380 Winter 2023 Project

Part 2: Implementing an Interface

Group 16

A handwritten signature in dark ink on a light-colored background. The signature is cursive and reads "Nikolaas Christie".

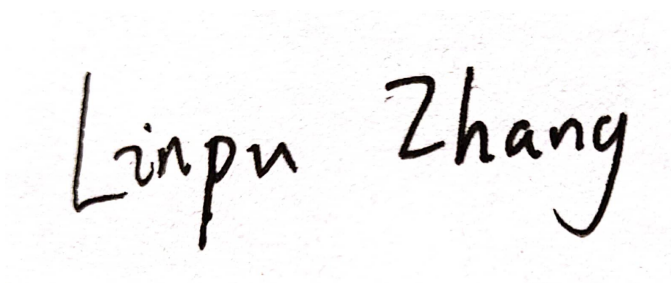
Christie, Nikolaas (33%)

christ37@myumanitoba.ca

A handwritten signature in black ink on a white background. The signature is cursive and reads "Edwin Duong".

Duong, Edwin (33%)

duonge1@myumanitoba.ca

A handwritten signature in black ink on a white background. The signature is cursive and reads "Linpu Zhang".

Zhang, Linpu (33%)

zhangl53@myumanitoba.ca

Setup

Follow the steps below to create and populate the database. Note that it is important to change the “server” line within *tables.py* and *insert.py* before running.

1. First create an empty database with the name, “chinook” in Microsoft SQL Server.
2. Next, create tables and relationships by running *tables.py*. The dataset is stored in the filepath “./csv”.
3. Then populate the tables by running *insert.py*.

Interface

The interface is implemented by Python with PySimpleGUI. To run the interface, first install the regular PySimpleGUI port:

```
$ python -m pip install pysimplegui
```

Then run *interface.py*. Note that if the application fails to connect to the database, the window will freeze for several seconds before an error window pops up. Please wait a few seconds before retrying.

Once the connection succeeds, the application will then render the main window.

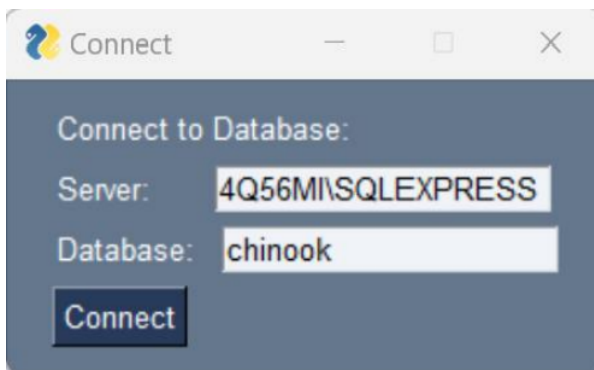


Fig 1. Connecting to the interface.

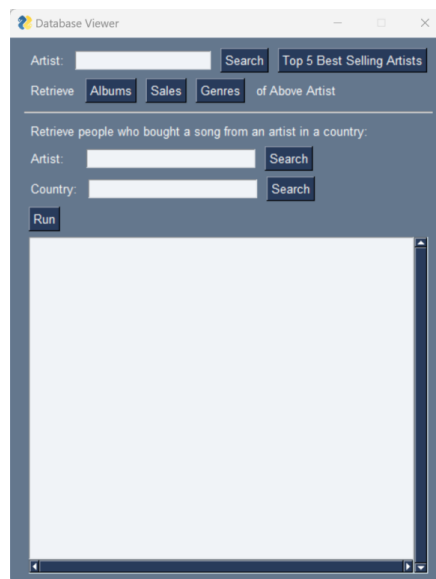


Fig 2. Main Interface Window

Queries

Show All

Leaving the Artist field blank and clicking on the Search button will produce the complete list of artists. The same can be done with the Country field and Search button.

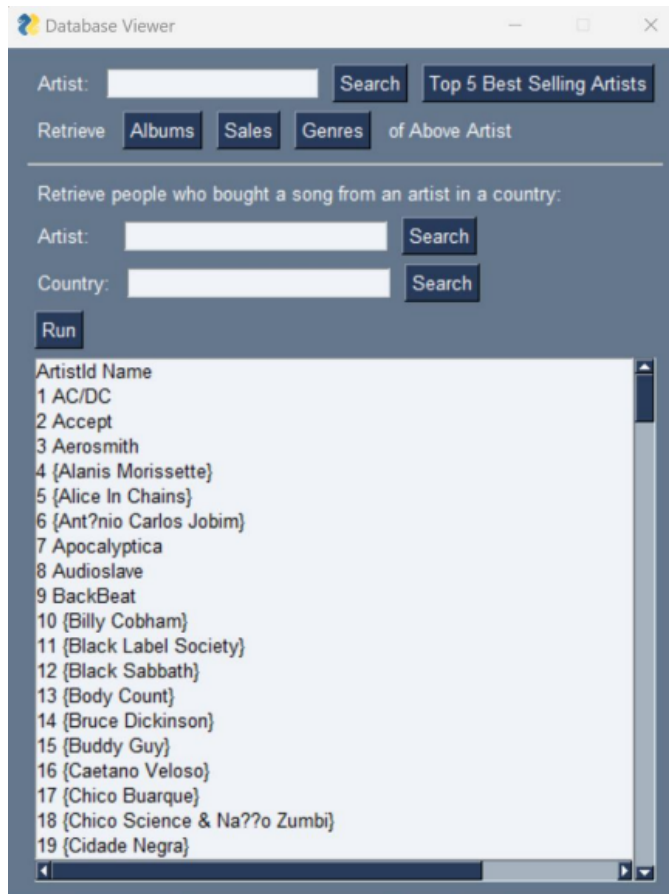


Fig 3. Show All

Top 5 Artists

Selecting the Top 5 Best Selling Artists button will produce a list of the top 5 artists ranked by album or song sales.

The screenshot shows a window titled "Database Viewer". At the top, there is a search bar labeled "Artist:" with a "Search" button and a button labeled "Top 5 Best Selling Artists". Below this, there are tabs for "Retrieve", "Albums", "Sales", and "Genres", with "Sales" currently selected. The text "of Above Artist" is visible. A section titled "Retrieve people who bought a song from an artist in a country:" contains two search fields: "Artist:" and "Country:", each with a "Search" button. A "Run" button is located below these fields. The main display area shows a list of artists with their IDs, names, and sales figures:

ArtistId	Name	Sales
90	{Iron Maiden}	140
150	U2	107
50	Metallica	91
22	{Led Zeppelin}	87
113	{Os Paralamas Do Sucesso}	45

Fig 4. Top 5 Best Selling Artists

Search by Artist Name

Entering characters into the Artist field and selecting the Search button will display all artists whose names begin with those characters.

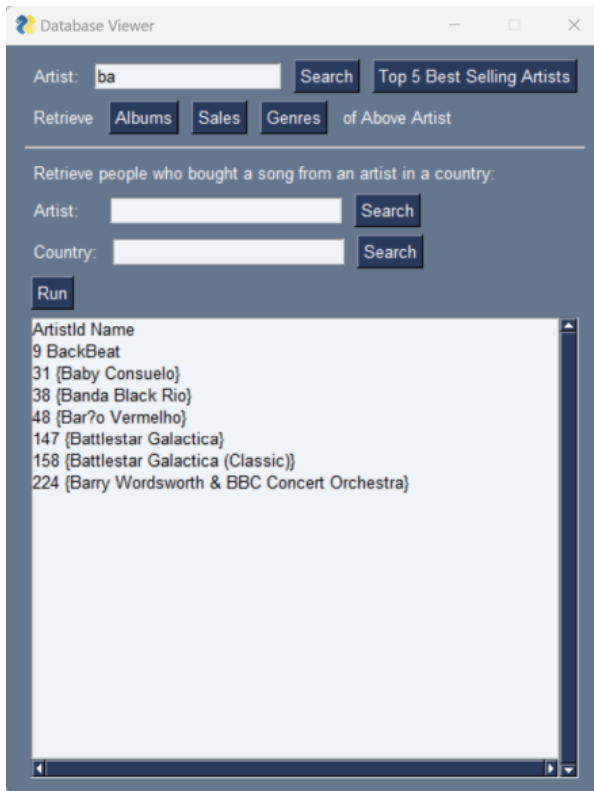


Fig 5. Searching by artist name.




Fig 6. Filling the search bar with the artist's full name.

Selecting a row in the textbox containing the output will fill the search bar with the full name of the artist. This also works for querying by country.

Albums, Number of Tracks, Genres

By selecting either Albums, Sales, or Genres, you will retrieve the albums, number sales, or the list of genres of the artist in the search box.



The screenshot shows a web application titled "Database Viewer". It features a search interface with the following elements:

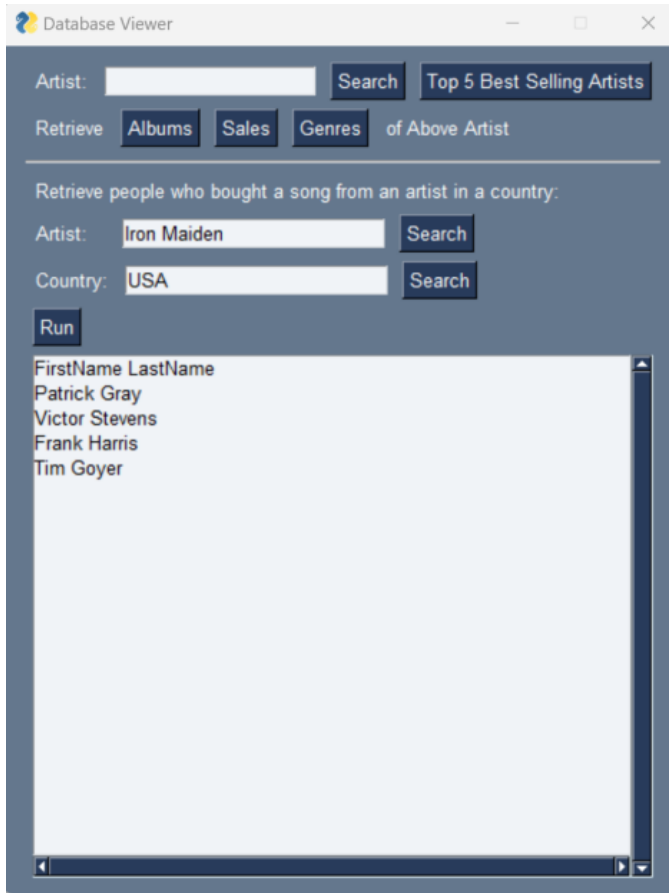
- An "Artist:" input field containing "Battlestar Galactica" and a "Search" button.
- A "Top 5 Best Selling Artists" button.
- A "Retrieve" section with three buttons: "Albums" (selected), "Sales", and "Genres", followed by the text "of Above Artist".
- A section titled "Retrieve people who bought a song from an artist in a country:" with "Artist:" and "Country:" input fields, each with a "Search" button.
- A "Run" button.
- A results table with the following data:

ArtistId	Name	AlbumId	Title
147	{Battlestar Galactica}	226	{Battlestar Galactica: The Story So Far}
147	{Battlestar Galactica}	227	{Battlestar Galactica, Season 3}

Fig 7. Selecting an artist's albums.

Names of Customers

In the bottom two lines of the interface, you can retrieve the names of customers who have bought at least one song or album from an artist, country pair as input. For example, searching for customers who have bought an Iron Maiden song album in the USA.



The screenshot shows a 'Database Viewer' window with a search interface. At the top, there is a search bar for 'Artist' with a 'Search' button and a 'Top 5 Best Selling Artists' button. Below this, there are tabs for 'Retrieve' with options 'Albums', 'Sales', and 'Genres', followed by 'of Above Artist'. A section titled 'Retrieve people who bought a song from an artist in a country:' contains two input fields: 'Artist' with the value 'Iron Maiden' and 'Country' with the value 'USA', each with a 'Search' button. A 'Run' button is located below these fields. The results are displayed in a text area with a scrollbar, showing a list of customer names under the headers 'FirstName' and 'LastName'.

FirstName	LastName
Patrick	Gray
Victor	Stevens
Frank	Harris
Tim	Goyer

Fig 8. Names of Iron Maiden customers in the USA.