Module 4 Project

Introduction

It's time to practice and solidify the skills you learned in this module.

> **Warning: Independent work**
>
> This is an individual assignment. Please do not collaborate with your peers or share your work until the project is reviewed as a class.

Setup

1. Click here to download the code files you need to for this project.
2. Navigate to the files on the command line.

Part 1: SQL Skills

In this project we will be practicing inserting and querying data using SQL. We'll make use of a handy online tool provided by Devmountain that will allow us to write SQL in your browser.

Click here to begin

On the left are the Tables with their fields, the right is where we will be writing our queries, and the bottom is where we will see our results.

Any new tables or records that we add into the database will be removed after you refresh the page.

Directions

IMPORTANT

As you write and run the following SQL queries in the database, also add them to the file called ***sql-skills.sql***.

Artist Table

1. Add 3 new artists to the artist table using ***INSERT***. (It's already created.)
2. Select 5 artists in alphabetical order.

Employee Table

1. List all employee first and last names only that live in Calgary.
2. Find everyone that reports to Nancy Edwards (Use the ReportsTo column). You will need to query the employee table to find the Id for Nancy Edwards
3. Count how many people live in Lethbridge.

Invoice Table

1. Count how many orders were made from the USA.
2. Find the largest order total amount.
3. Find the smallest order total amount.
4. Find all orders bigger than $5.
5. Count how many orders were smaller than $5.
6. Get the total sum of the orders.

JOIN Queries (Various tables)

1. Get all invoices where the unit_price on the invoice_line is greater than $0.99.
2. Get the invoice_date, customer first_name and last_name, and total from all invoices.
3. Get the customer first_name and last_name and the support rep's first_name and last_name from all customers. Note that support reps are on the employee table.
4. Get the album title and the artist name from all albums.

Make sure to add and commit your SQL file to the respository for this assessment on Github.

Part 2: Data Manipulation with Python

Included in the materials for this project is a file called ***process.py*** and a file called ***um-server-01.txt***. The ***process.py*** file is a file that opens and combs through the data that you see in ***um-server-01.txt***.

Directions

- Read over the code in ***process.py*** file and **add comments** explaining what you think each line is doing. Recall that in Python, you can specify a comment using an octothorpe (`#`).
- Change the script to display sales info for Monday instead of Tuesday.

Once you have made your comments and edits to the script, run it to make sure it works. Then, make sure to add and commit your changes using Git.

Part 3: Data Modeling

Imagine you are opening a pet adoption agency where you will rescue and care for animals and try to find them owners who are a good match for them.

Design a database with at least 4 tables for your pet adoption agency. Include any relationships between tables where you feel they are needed.

For example, you'll need an animals table. Perhaps you have an animal species table as well. The relationship between animal species and animals is one-to-many. For every one species in the species table, you could, at most, have many animals of that species in the animals table.

Submit a diagram of your database for this project.

> **Note: Drawing Tools**
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> You can use ***https://draw.io*** or ***http://drawings.google.com/*** to create your diagram. Make sure you specify your relationships between tables in your diagram. When you're finished with your drawing, either take a screenshot or download a PDF of you diagram, add it to this repository, and push it to Github.

Extra Credit

SQL

Artist Table

1. Select 10 artists in reverse alphabetical order.
2. Select all artists that start with the word 'Black'.
3. Select all artists that contain the word 'Black'.

Employee Table

1. Find the birthdate for the youngest employee.
2. Find the birthdate for the oldest employee.

Invoice Table

1. Count how many orders were in CA, TX, or AZ (use IN).
2. Get the average total of the orders.

More Join Queries

1. Get all playlist_track track_ids where the playlist name is Music.
2. Get all track names for playlist_id 5.
3. Get all track names and the playlist name that they're on (2 joins).
4. Get all track names and album titles that are the genre Alternative & Punk (2 joins).

Data with Python

In ***process.py***, write another function that prints out all the melon orders that delivered over 10 melons.