Project 2: Database Boogaloo

Submission Due: December 9 by 11:59PM

Project Description:

For this project, you will be designing and implementation a text user interface (TUI) in Python to allow a user to interact with your database from Project 1 in a controlled manner. The user should be able to insert data to, delete data from, and query information about your specific dataset. You should be thoughtful about what type of information users might want to engage with when designing your queries.

Program Requirements

- Your program should have a menu that allows the user to choose which operation they would like to perform
- Your program should provide the following functionality:
    - One option to insert data that interacts with at least one table
        - This transaction should require at least three steps, one to prompt the user for information that would like to add, one to make sure the data is not already present, and one to actually insert the data
    - One option to delete data that interacts with at least one table
        - This transaction should require at least three steps, one to prompt the user for information that would like to remove, one to make sure the data is present, and one to actually delete the data
    - One option to output data that interacts with at least one table
        - This transaction should require at least two steps, one to prompt the user for information that would like to see, i.e. specific records from the tables, not just all of the records, and the query to select the data
    - One option to insert data that interacts with at least two tables
        - This transaction should require at least three steps, one to prompt the user for information that would like to add, at least one to make sure the data is not already present and at least one to actually insert the data (2+ checks and 1+ inserts OR 1+ checks and 2+ inserts)
    - One option to delete data that interacts with at least two tables
        - This transaction should require at least three steps, one to prompt the user for information that would like to remove, at least one to make sure the data is not already present and at least one to actually delete the data (2+ checks and 1+ delete OR 1+ checks and 2+ deletes)
    - One option to output data that interacts with at least two tables
        - This transaction should require at least two steps, one to prompt the user for information that would like to see, i.e. specific records from the tables, not just all of the records, and the query to select the data

        - You should use some sort of join here
        - The data output should use different tables than the 1 table data output option
    - One option to output data that interacts with three or more tables
        - This transaction should require at least two steps, one to prompt the user for information that would like to see, i.e. specific records from the tables, not just all of the records, and the query to select the data
        - You should use some sort of joins here
    - One option should be to exit the program
- Information regarding data entry and removal, and the success or failure of the entry or removal, should be provided in an easy to read and understand format to the user
- When data is output from the table, it should be presented in an easy to read and understand format to the user, i.e. make sure each piece of data is labeled correctly
- All options should be individual function calls
- Include a main function that controls the flow of operations in your program
- No globally scoped variables are allowed
- Your program should be well documented in terms of comments. For example, good comments in general consist of a header (with your name, date, and brief description), comments for major variables, comments for each function, and commented blocks of code.

Submission

- Your program will also be graded based upon your program style. This means that you should use comments (as directed), meaningful variable names, and a consistent indentation style
- You will submit all of the following files to Canvas by the due date and time
    - All of the .py files needed to execute your program
    - A dump of your database containing only the provided data. This will need to be a self-contained .sql file and should include create schema. You can use the MySQL Workbench Data Export tool for this
- Projects are meant to be individual coding assignments, so no collaboration is allowed. This includes downloading code off of the internet. Any discovered instances of this will be considered cheating and appropriate actions will the taken according to the course syllabus
- Be sure that you have tested the version of the program you wish to submit to make sure it works correctly. You will not be allowed to resubmit work after the deadline that does not have a third-party timestamp such as Dropbox or an email. Timestamps generated by your operating system will not be acceptable.

Bonus

For 10 bonus points, you should create a GUI in, Python, for your program. It should provide all of the same menu options as the TUI version of your program. All interactions must be performed and all output must be shown via the GUI.

For 3 bonus points, add an option to add data that interacts with three or more tables that requires a transaction with 4 or more steps (see the previous insert transactions as a model).

For 3 bonus points, add an option to remove data that interacts with three or more tables that requires a transaction with 4 or more steps (see the previous delete transactions as a model).