Exercise 1.6: Connecting to Databases in Python

Reflection Questions :

- *What are databases and what are the advantages of using them?*

  - **A:** Databases are organized collections of data. They are valuable in many ways beyond the benefits of storing data locally, such as: keeping data in a standardized format, making them accessible by any number of apps and users beyond just the app that the data was initially compiled for, and can be secured with passwords as well as holding the system by which an app is secured with passwords (or equivalents).

- *List 3 data types that can be used in MySQL and describe them briefly:*

Data type	Definition
INT	Integers: Whole numbers without fractional components. Ideal for storing numerical data that doesn't require decimal precision, such as counts, identifiers, or quantities.
FLOAT	Floating-point: Decimal numbers that supply floating-point precision. Ideal for storing precise numerical data such as measurements and temperature.
DATETIME	Date-Time: Stores date and time values in the format = ' YYYY-MM-DD HH:MM:SS '. Ideal for storing timestamps, countdowns, or displays of date and/or time.

- *In what situations would SQLite be a better choice than MySQL?*

  - **A:** In cases where a very simple database is needed, such as storing a list of names or addresses, SQLite can be sufficient, and allow the user to avoid the

tedium of setting up an entire database engine. A database ".db" file, that is able to be interacted with from python, is generated.

- *Think back to what you learned in the Immersion course. What do you think about the differences between JavaScript and Python as programming languages?*

  - **A:** It is very difficult for me to compare the two, due to the distinctly different productions that were built with each in this course. My experience, with each so far, extends only as far this course has carried me. That being said: I can imagine that there are many similar/identical things that could be built with either. From what I have experienced, Python seems to be easier for basic automation of tasks that would otherwise take a lot of human time and effort to execute. A Python app could be quickly built to carry out a task that saves enormous amounts of time, as well as organization that avoids human error. With JavaScript, it would seem the startup and development of an app will typically be a much larger project, and would worth the extra skill, knowledge, and time needed when something more elaborate is desired. To be more specific, JavaScript builds complex apps with beautiful UI's and nearly-endless customization to the UX, whereas Python is ultra simplified in UX, and focuses on a specific task.

- *Now that you're nearly at the end of Achievement 1, consider what you know about Python so far. What would you say are the limitations of Python as a programming language?*

  - **A:** Based on what I know so far: Python lacks the dynamic UI capabilities that are, now, commonplace for maximizing usability for users of any level of skill or knowledge. I expect that I am ill-equipped to make this kind of analysis with my current comprehension level. From what I've used Python for, so far, the layering connectivity between pages and functions throughout the code doesn't seem to be used at the same level of complexity that JavaScript allows. Again, I expect I am naive in this statement, as I know python to be capable of elaborate processes. I am, however, still expecting that it is less capable of delivering a product that has optimal usability for people of all skills and expertise.