

### **1. What are databases and what are the advantages of using them?**

Databases are organized collections of data. When used in conjunction with a Python script, databases provide long-term storage for data generated by the script (as opposed to the data being lost when the script terminates). The data saved in a database is generally laid out in a way that provides efficient methods for accessing and editing the data in the future, plus the data being entered can be validated to ensure correct data types are contained where expected.

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

1. VARCHAR(n) - stores text, up to a number (n) of characters. The maximum is 255 characters.
2. INT - used for storing whole number values, either positive or negative
3. FLOAT - stores numbers with decimals

### **3. In what situations would SQLite be a better choice than MySQL?**

SQLite would be a better choice for a smaller app, designed for a single dedicated user. This is because of 1) the size limitations on the .db files that the data is stored in using SQLite, and 2) the fact that only one user can make changes to the database at a time.

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

Based on what I have learned so far, Python is somewhat easier to learn and simpler than JavaScript (though this might just be that I am more experienced with more advanced JavaScript functionality). Python's syntax is also simpler than JavaScript (fewer layered brackets of various type, no use of semi-colons to end statements, etc.).

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

Python is slower than some other languages, due to the fact that it is an interpreted language, rather than a compiled language. Additionally, as Python is dynamically typed (as opposed to statically typed), there may be some type errors that are only uncovered when the program is run, rather than in the development process.