**What are library modules? Provide an example of how might you use a module as a programmer?**

A library module is a file that contains functions and variables that can be used by a program when imported. As a programmer, if I were making multiple programs for a business and found myself using the same functions in multiple programs, I could create a library module with those functions to import into my programs instead of re-writing the code every time.

**What is List Comprehension? How might this functionality be useful for programmers?**

List comprehension is the process of taking a list, running each item in that list through a function, and creating a new list with the results. It could be used-for example-to sort the list items in various ways, perform calculations on the items, or a custom function (such as taking a list of FICO scores and returning a list of interest rates for each score).

**List and describe the four criteria that should be met when using top-down design. What are some of the benefits of using this model?**

The four criteria that should be met when using top-down design:

1. The design should be readable with small function size. This will allow someone who didn’t work on the code to scroll through, read the comments and descriptive names, and see exactly what it is that each function is doing.
2. Tasks proceed from general to specific. Tasks at the top are made to control the flow of the program, while tasks at the bottom are where actual calculations and functions are executed.
3. Subtasks should be single-minded. Each task, to assist in readability and aid in debugging, should only perform one well-defined job.
4. Subtasks should be independent of each other, and any relationships should be specified. This will help to avoid miscalculations, and functions affecting data in other functions when not intentional.

Using these four criteria enhances programming productivity and results in code that is easy to read and maintain, as well as code that avoids errors.