Practice Questions for Day:4

Advanced Python

List of Programs

41. Create a class Counter with a class variable count to track the number of instances created. Implement the __init__ method to increment this counter. Add a method to return a new Counter object initialized to the current count value.

42. Define a class Sentence with an instance variable text. Overload the + operator using __add__ to concatenate two Sentence objects. Create a method that returns a new Sentence object as a result of the concatenation.

43. Develop a program that defines a global variable count and a function increment that has a local variable count. Show how to use and differentiate between the global and local count variables.

44. Define a class `ComplexNumber` with instance variables `real` and `imaginary`. Create a function `add_complex_numbers` that takes two `ComplexNumber` objects as arguments and returns a new `ComplexNumber` object representing their sum.

45. Define a class Distance to represent distances in kilometers and meters. Implement the init method to initialize the object with distances in kilometers (km) and meters (m). Create a method add_distances to add two Distance objects and return a new Distance object representing their sum in kilometers and meters.