ADVANCE ASSIGNMENT -3

1. What is the concept of an abstract superclass?

Ans1- An abstract superclass, in object-oriented programming, is a class that is designed to be a blueprint for other classes but is not intended to be instantiated directly. It defines a set of common attributes and methods that should be shared by its subclasses. Subclasses must implement these methods, providing their own specific implementations.

2. What happens when a class statement's top level contains a basic assignment statement?

Ans2- When a class statement's top level contains a basic assignment statement, it defines a class-level attribute that is shared among all instances of the class. This attribute is the same for all instances and can be accessed and modified using the class name or instances of the class.

3. Why does a class need to manually call a superclass's \_\_init\_\_ method?

Ans3- A class needs to manually call a superclass's \_\_init\_\_ method when it wants to initialize the attributes and behavior inherited from the superclass. If the subclass has its own \_\_init\_\_ method and doesn't call the superclass's \_\_init\_\_, the superclass's initialization won't occur, potentially leading to incomplete or incorrect initialization of the subclass. Calling the superclass's \_\_init\_\_ method ensures proper initialization of both the subclass and superclass attributes and behaviors.

4. How can you augment, instead of completely replacing, an inherited method?

Ans4- You can augment an inherited method by calling the superclass's method using super() and then adding your own code before or after the call. This allows you to extend or modify the behavior of the inherited method while still utilizing the functionality from the superclass.

5. How is the local scope of a class different from that of a function?

Ans5- the key difference is that the local scope of a class includes class-level attributes and methods accessible via self, while the local scope of a function is confined to the function's block, and its variables are not accessible from outside that function.