

1. What is the concept of an abstract superclass?

Ans: An abstract superclass is a class that calls a method, but does not inherit or define it—it expects the method to be filled in by a subclass. This is often used as a way to generalize classes when behaviour cannot be predicted until a more specific subclass is coded. OOP frameworks also use this as a way to dispatch to client-defined, customizable operations.

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

Ans: When a simple assignment statement ($X = Y$) appears at the top level of a class statement, it attaches a data attribute to the class (Class.X). Like all class attributes, this will be shared by all instances; data attributes are not callable method functions, though

3. Why does a class need to manually call a superclass's `__init__` method?

Ans: A class must manually call the `__init__` method in a superclass if it defines an `__init__` constructor of its own and still wants the superclass's construction code to run. Python itself automatically runs just one constructor—the lowest one in the tree. Superclass constructors are usually called through the class name, passing in the self instance manually: `Superclass.__init__(self, ...)`.

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

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

Ans: A class is a local scope and has access to enclosing local scopes, but it does not serve as an enclosing local scope to further nested code. Like modules, the class local scope morphs into an attribute namespace after the

class statement is run.