

What is the difference between a class and an object?

A Class can be considered what is the recipe for an object, while an object is the result of using the “class recipe”. Its starting parameters are predefined and static when initially made but can be altered once the recipe is done.

Analogy: to use the cake recipe (Class) one can make one or more cakes (object(s))

What is Inheritance and what is the correct syntax for it?

Inheritance is a way to create subclasses of a greater more general class. These subclasses will have all of the abilities of the general class but can add its own more specialised abilities into the mix

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What is the difference between a has-a and an is-a relationship?

The difference between them is that “has-a” relationships references things it owns and can interact with. “is-a” relationships references what it was made from and what it can do. Meaning “is-a” relationships is all about inheritance, and “has-a” references composition

What is encapsulation? How is encapsulation handled in Python?

Encapsulation is the act of cordoning off interaction with the method/class into very controlled or hidden ways of interacting with it. Python handles encapsulation by using underscores to make attributes private and therefore indicate that it should not be accessed directly. One can also do double underscores to make the attribute hidden by Python scrambling the attribute name

What is polymorphism?

Polymorphism is the act of making common methods accessible by abstracting the input. This can be achieved by taking in several inputs into a method so that it can be used by a wide range of classes. The attributes or actions are not set in stone.