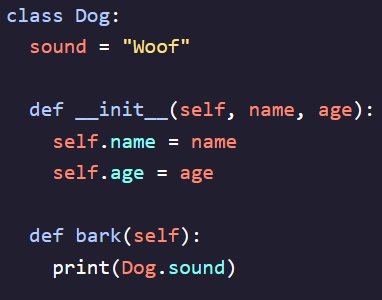
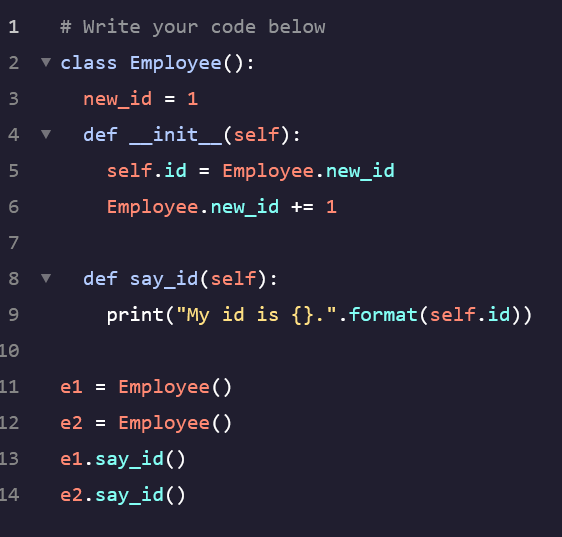
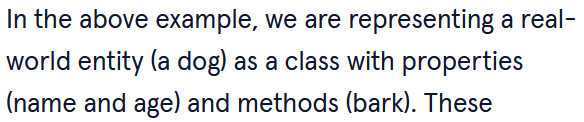
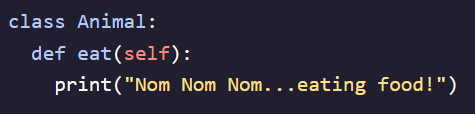
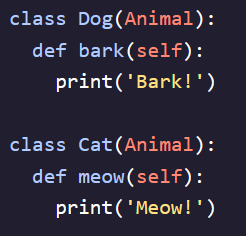
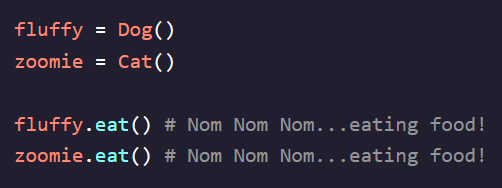
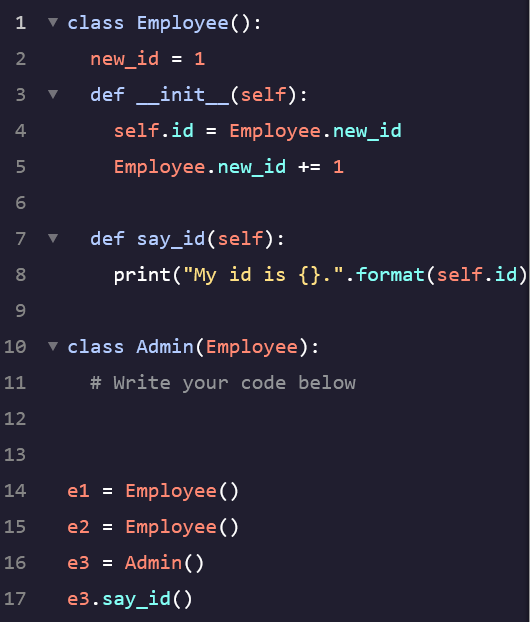
**Programming Paradigm** - a way to classify different programming languages and the unique features that they offered  
- Code may fall into multiple paradigm categories as modern languages offer more than one specific paradigm we can program in   
- In *OOP* there must be the ability to create programs based around classes and objects  
   


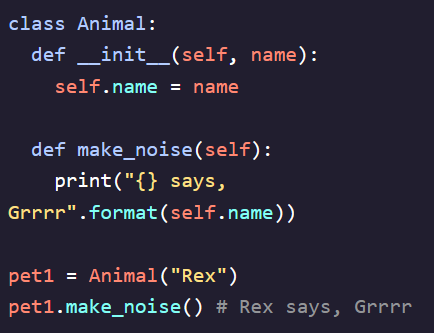
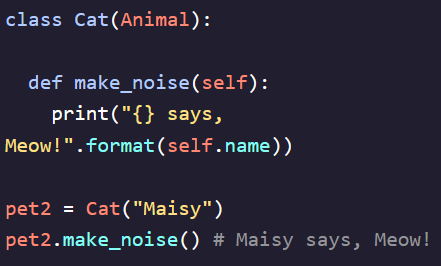


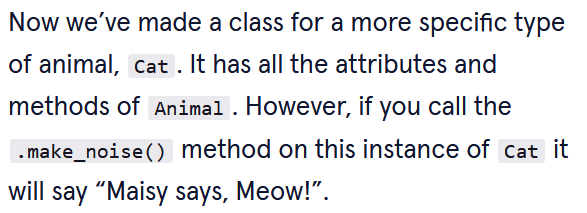
**OOP Pillar: Inheritance:**

- Can create a global class that contains methods that other classes can call and use in their own code  
- This allows us to cut down on code reuse and prevent writing the same code into each method  
    


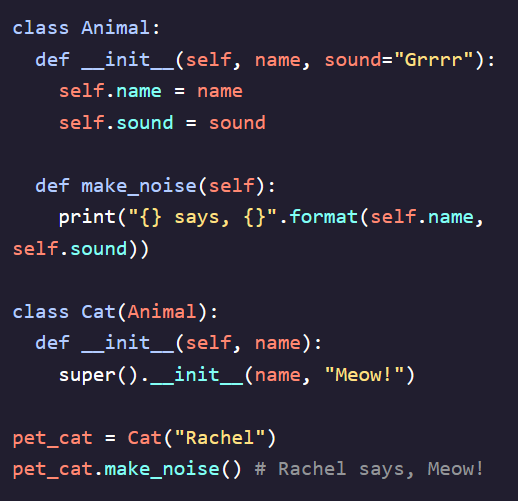


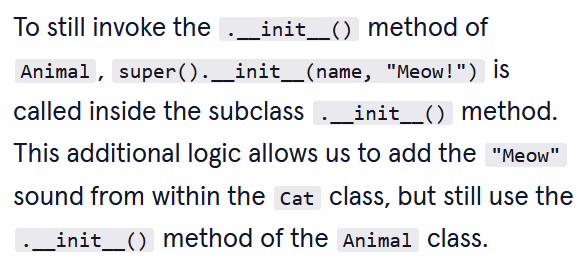
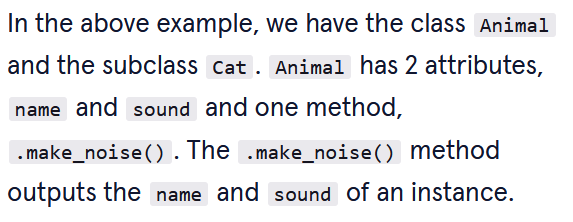
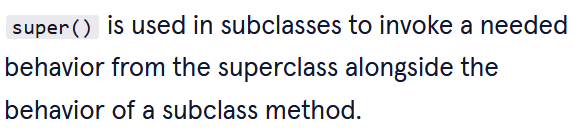
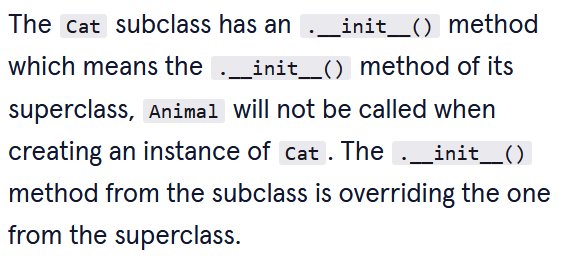
**Overriding Methods:**

- Useful when we want to override the behavior of a child class from a parent class  
- An overriding method in a subclass is one that has the same definition as the parent class but contains different behavior  
 

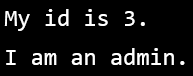


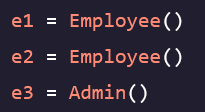
**super():**

- When overriding methods we sometimes want to still access the behavior of the parent method  
- *super()* gives us a *proxy object* that we can use to invoke the method of an objects parent class (aka superclass)  


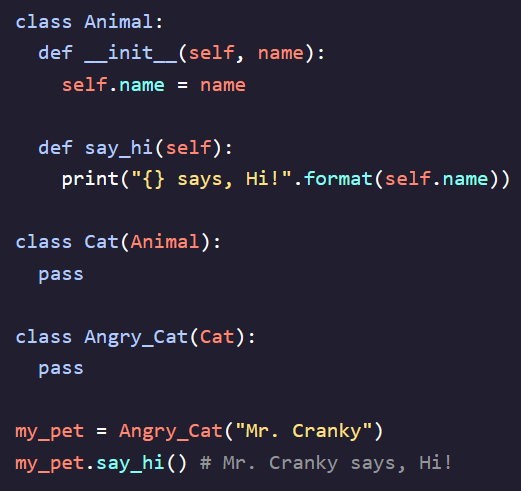
  


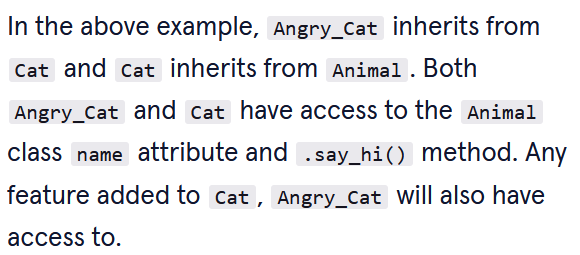


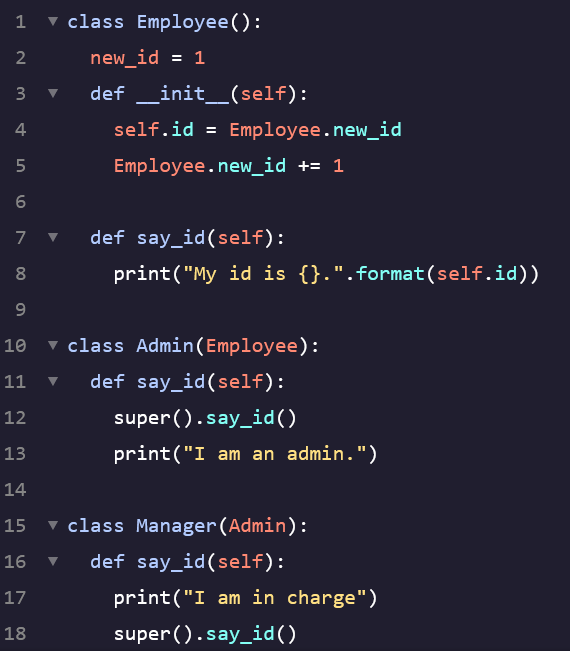
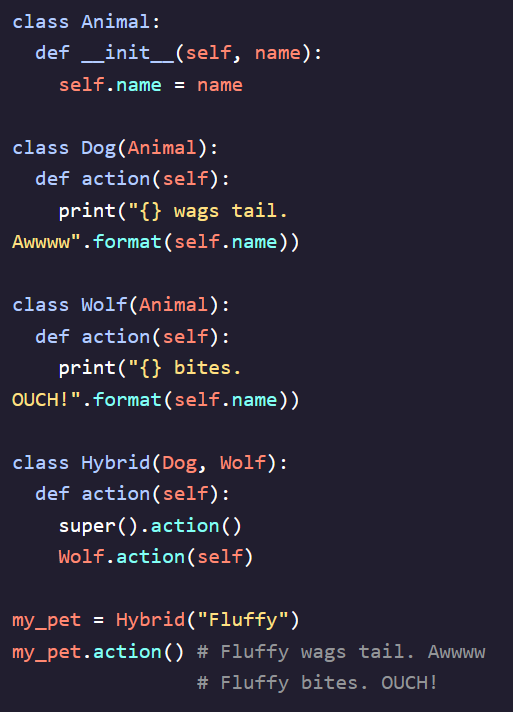


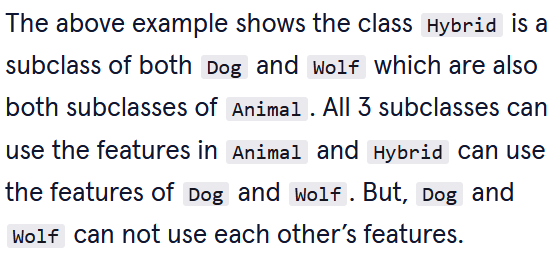


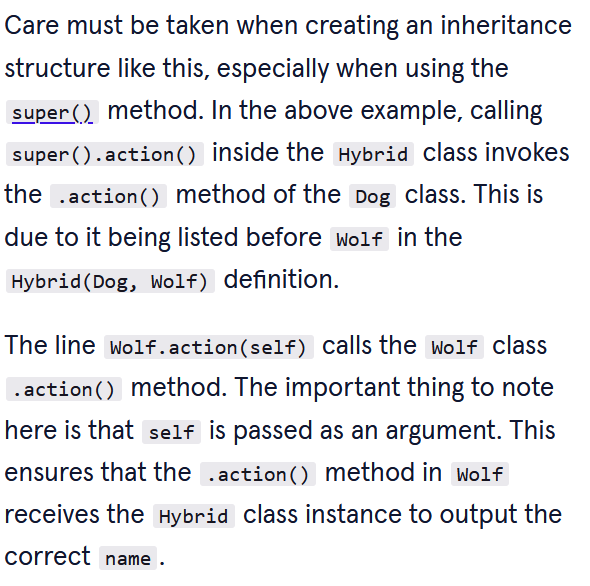
**Multiple Inheritance:**

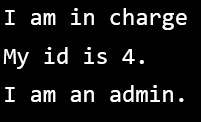
- This is a feature in Python where a subclass inherits from more than one superclass (superclass 🡪 super-superclass 🡪 etc)  


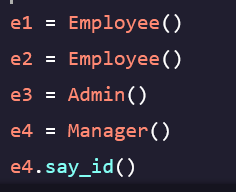


  
  
- Another form of inheritance involves a subclass that inherits directly from two classes and can use the attributes and methods of both  




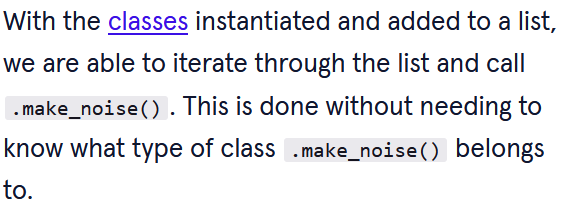


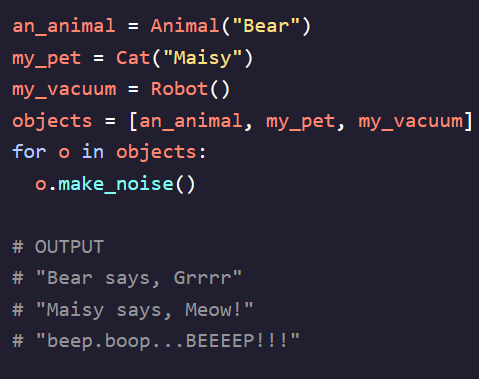


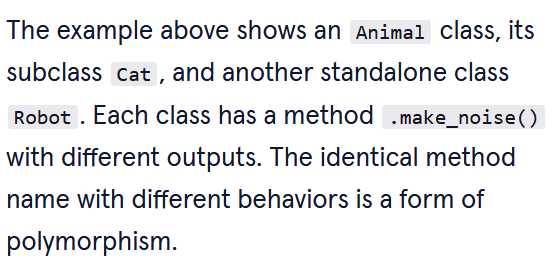


**OOP Pillar: Polymorphism:**

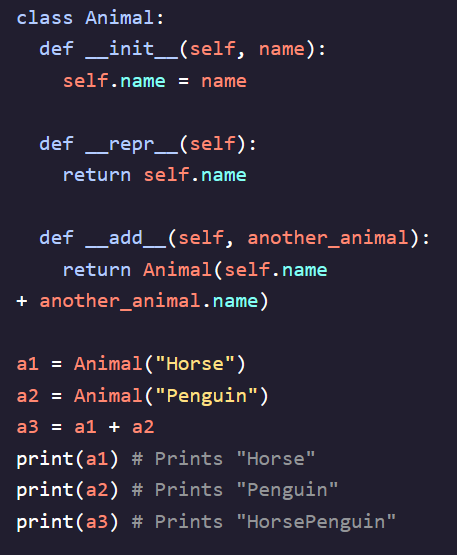
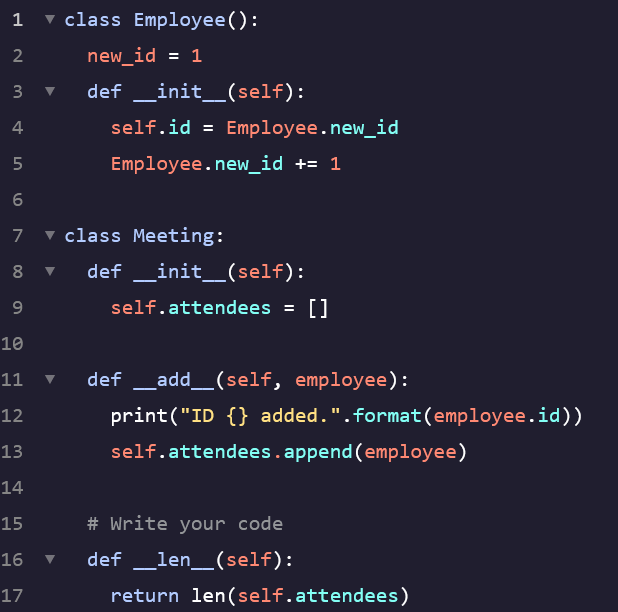
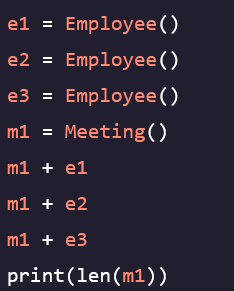
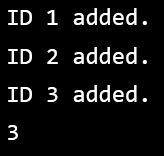
- The ability to apply an identical operation onto different types of objects  
- Useful when an object type may not be known at program runtime  

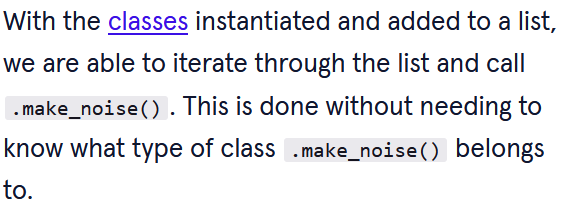
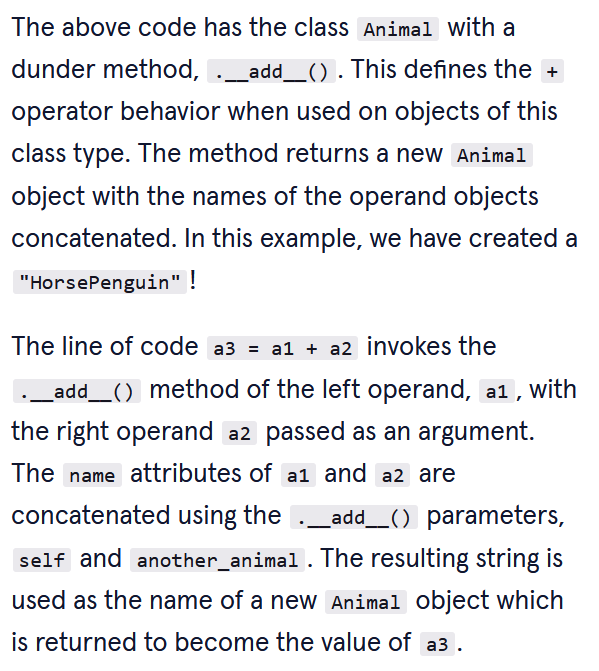







**Operation Overloading:**

- Performed by defining a classes ***dunder methods*** – stands for double under, use a special syntax to perform class-specific operations in Python  
  
  



**OOP Pillar: Abstraction:**

- zz