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Research Week 05

1. What are the four pillars of Object-Oriented Programming? Explain each pillar.
   a. Inheritance – allows one class to take from another class, the class inherits the properties and behaviors from the second class.
   b. Encapsulation – it hides the variables in one class from another class, only enabling the access to the variables through methods of their current class.
      i. You must declare the variables as private
      ii. You must provide public getter and setter methods to modify and view the variables.
   c. Polymorphism – the ability of an object to take on many forms.
   d. Abstraction – the process of hiding the implementation details from the user.
      i. Contains the abstract keyword
      ii. May or may not contain abstract methods
      iii. If the class has one abstract method, it must be declared as abstract
      iv. If it is declared abstract it cannot be instantiated
      v. To use it, it must be inherited from another class.
2. What is the relationship between a Class and an Object?
   a. A class is a template or a place for defining objects. A class defines object properties.
   b. An object is the variables and methods that are contained within a class.

https://education.launchcode.org/skills-back-end-java/java4python/classes-and-objects-inheritance/?utm_term=&utm_campaign=&utm_source=adwords&utm_medium=ppc&hsa_acc=4368208516&hsa_cam=17572421468&hsa_grp=135984040497&hsa_ad=605748003306&hsa_src=g&hsa_tgt=dsa-19959388920&hsa_kw=&hsa_mt=&hsa_net=adwords&hsa_ver=3

https://www.tutorialspoint.com/java/java_encapsulation.htm

https://www.ncl.ucar.edu/Document/HLUs/User_Guide/classes/classoview.shtml#:~:text=A%20class%20is%20a%20template%20for%20objects.,%22instance%22%20of%20a%20class.