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Week 5 Research Assignment
Prompts

1. What are the four pillars of Object-Oriented Programming? Explain each pillar.

The four pillars of OOP are abstraction, encapsulation, inheritance and polymorphism. Abstraction is essentially creating a function or object to use in multiple places throughout your code that doesn't require you to create a new code block again and again to accomplish something similar. Instead, you can abstract away, or hide away, the execution details of your code. Encapsulation is used to hide the details of an object, using closures or classes. This allows for code to keep data secure, but it also helps when reusing code because it keeps objects self-contained so changes made to one object won't affect the others. Inheritance allows an object to acquire the properties and methods of another object, as often times we need our code to do the same thing in multiple places with only one small part needing to be changed. The inheritance chains we create within our code will inherit details from the parent chain but will also be able to do different things, which is our fourth and final OOP pillar: polymorphism. Polymorphism refers to the shared behaviors that have been created with inheritance chains as well as the ability to implement stand alone behaviors, or "the condition of occurring in several different forms".

"The Four Pillars of Object-Oriented Programming". Kealan Parr.
https://www.freecodecamp.org/news/four-pillars-of-object-oriented-programming/
Accessed 7/11/2023.

2. What is the relationship between a Class and an Object?

Class is the template or description of what an object will be. Our class is like a blueprint, we use it to store fields, constructors and methods that will create our objects. Objects are instances of the defined class. The class is created first and once, and contains no values. Multiple objects (as many as required) are created from the class, and each of the objects have their own values associated with them while having similar properties (held in the class).

"Difference Between Object and Class".
https://www.geeksforgeeks.org/difference-between-class-and-object/
Accessed 7/11/2023