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1. Explain the four pillars of OOP

The four pillars of OOP (object oriented programming) are encapsulation, abstraction, inheritance and polymorphism. When utilized together, these pillars can essentially provide a strong foundation for creating dynamic programs in javascript.

Encapsulation is taking data and behavior that is related, organizing it into a unit of code called a class. Doing this keeps the data hidden and accessed only though special means. Encapsulation helps keep that specific date from being corrupted on accident, as it is protected within the class.

Inheritance is a process by which information is passed from one thing to another. In Javascript, inheritance is how a new class can draw its data a behavior from an existing class. Inheritance is helpful in coding as it allows the ruse of code that already exists and prevents code repetition.

Abstraction is a crucial pillar of OOP because it basically is used to identify essential aspects of objects. An abstraction provides a framework to build a model or description of complex constructs by isolating the essential components from its non-essential ones therefore making it easier to understand. By presenting a simpler interface, abstraction helps hide the complexity of a given system from the user.

Polymorphism refers to the different forms an object has the ability to take on given the context. This pillar allows object of different classes to be treated as though they were of the same class. Its benefit is that it makes writing code with many different objects easier and more concise.

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

A class is basically a blueprint or a template for creating an object, while an object is an instance of that class with its own set of values for properties and has the ability to invoke methods defined within the class from which it came. A class defines the properties and behaviors that objects of that class with have, but the objects are the specific instances of that class that have their own unique characteristics. An analogy that helps to understand it is that of a resume template. A resume template is like a class because it defines a layout or outline of the resume. When a person fills out their resume based on the template (class) their information becomes as object with its own set of features and characteristics.

Sources:

https://blog.knoldus.com/understanding-the-concept-of-oop-its-four-pillars/

https://www.geeksforgeeks.org/difference-between-class-and-object/