

Prompts

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

The four pillars of Object-Oriented Programming are

- Abstraction
 - Allows us to hide complexity, by selecting data that is relevant to the object. This allows us to apply the same information used to other applications with little or no modification
- Encapsulation
 - This hides a method on how it works. Objects can't access the state directly, instead they can only invoke a list of public functions.
- Inheritance
 - Allows objects to inherit properties from another object. This allows us to reuse fields and methods depending on the type of inheritance. (single, multiple, multi-level, hierarchical)
- Polymorphism
 - Something can take on multiple different forms that can use a class exactly like its parent so there is no mixing of types. It is like a sub-class that keeps its own functions/methods.

What is the relationship between a Class and an Object?

- A class describes the content of objects it belongs to such as variables and defines methods, while an Object is the element of the class and the behavior of their class.