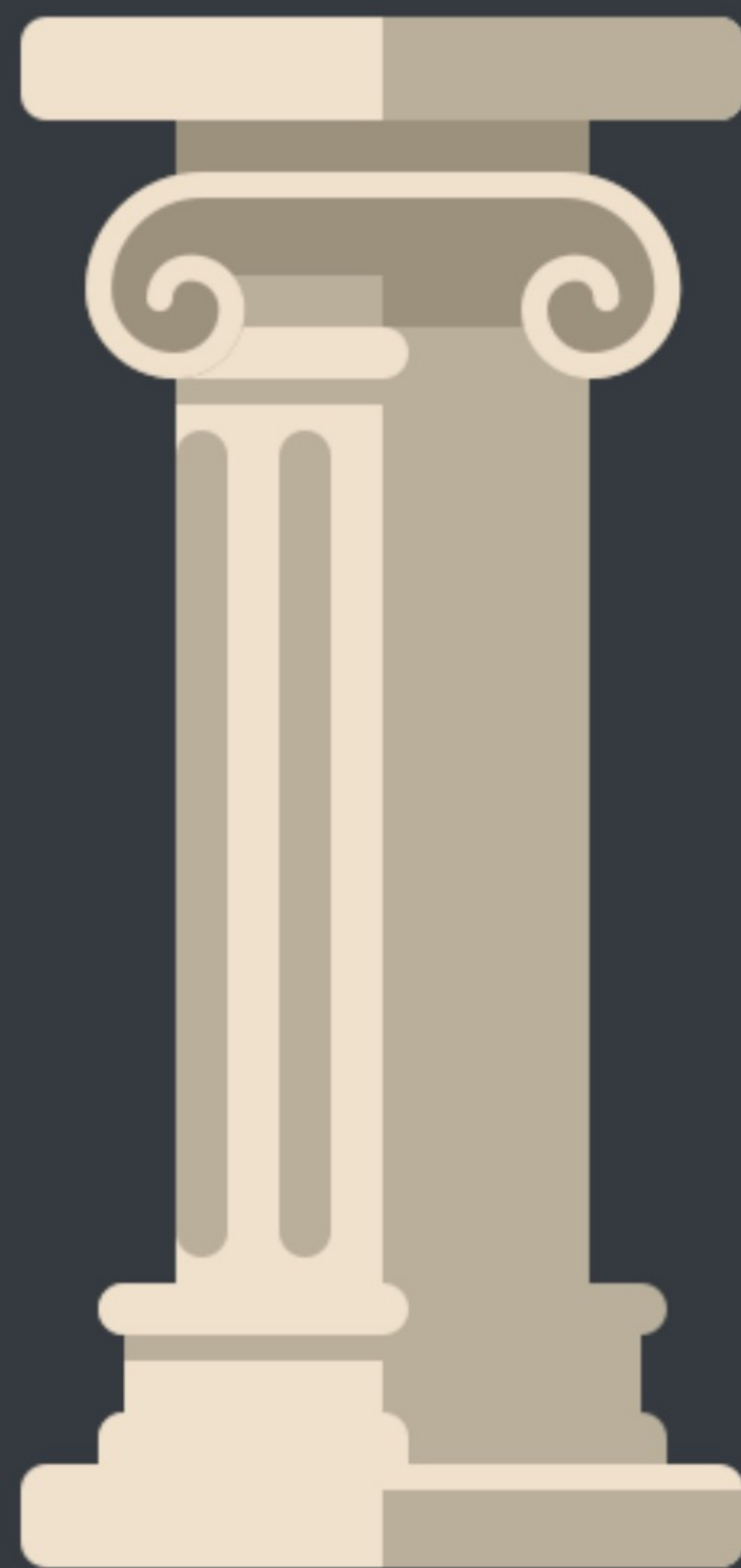


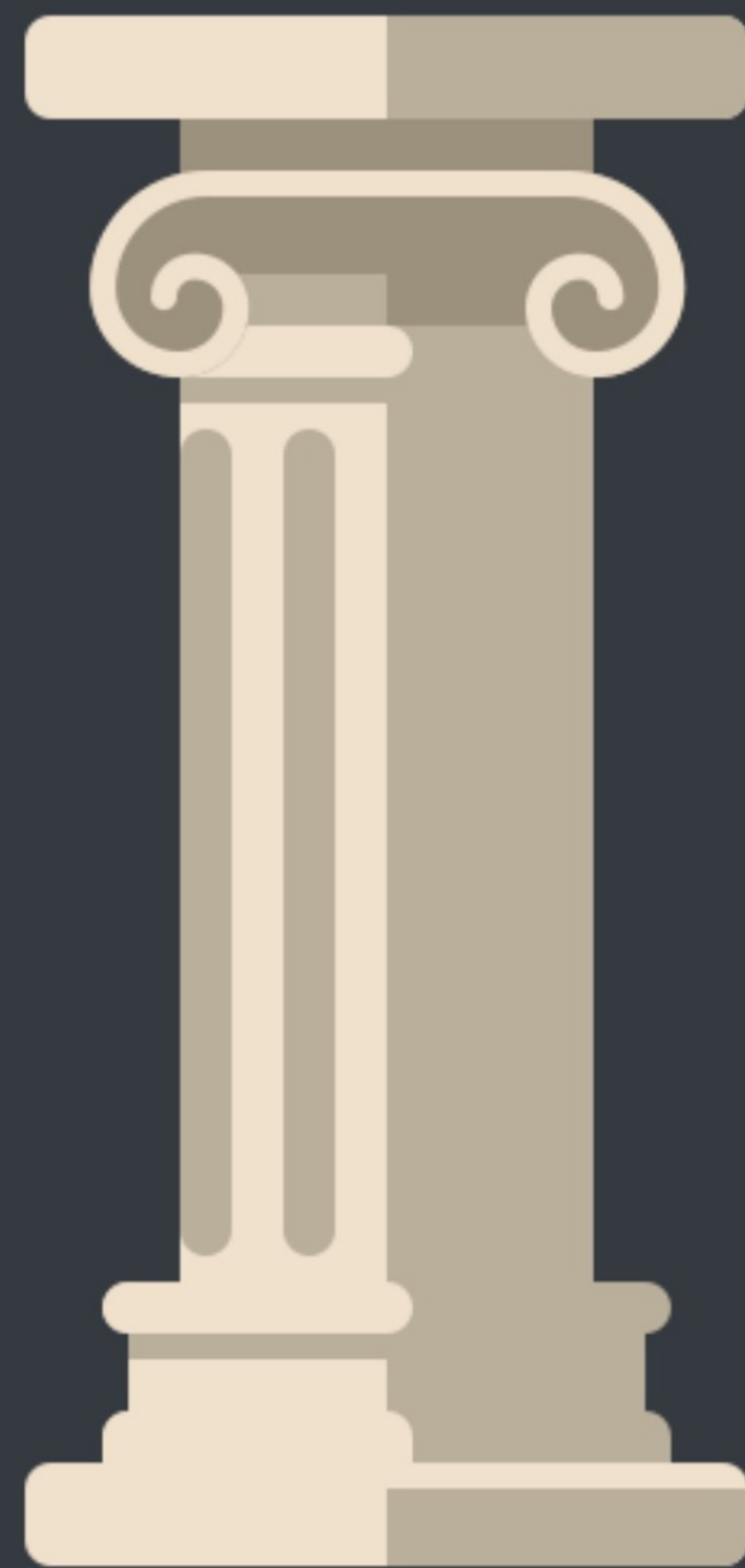
# The 4 Pillars of OOP

*\*Simplified*

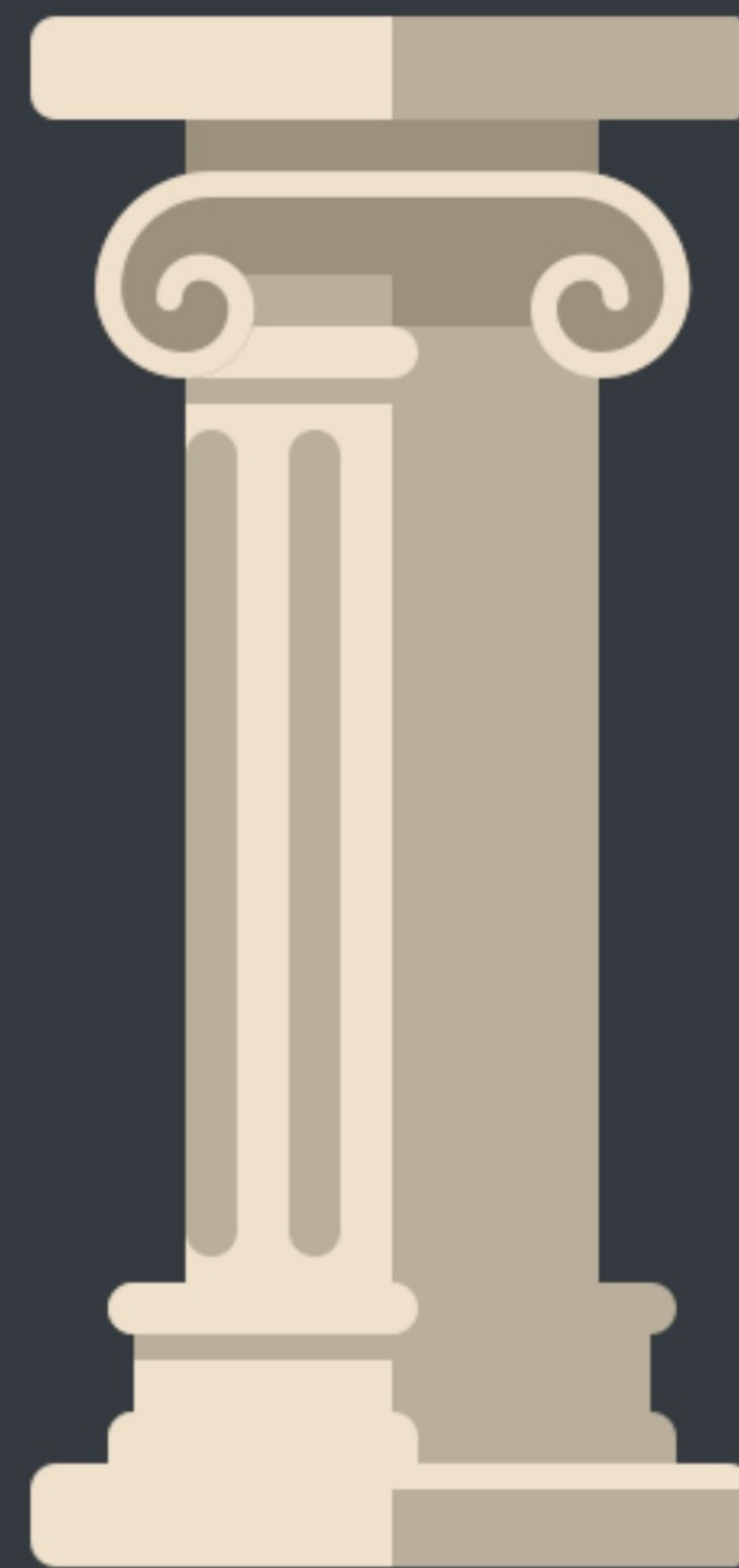
**Inheritance**



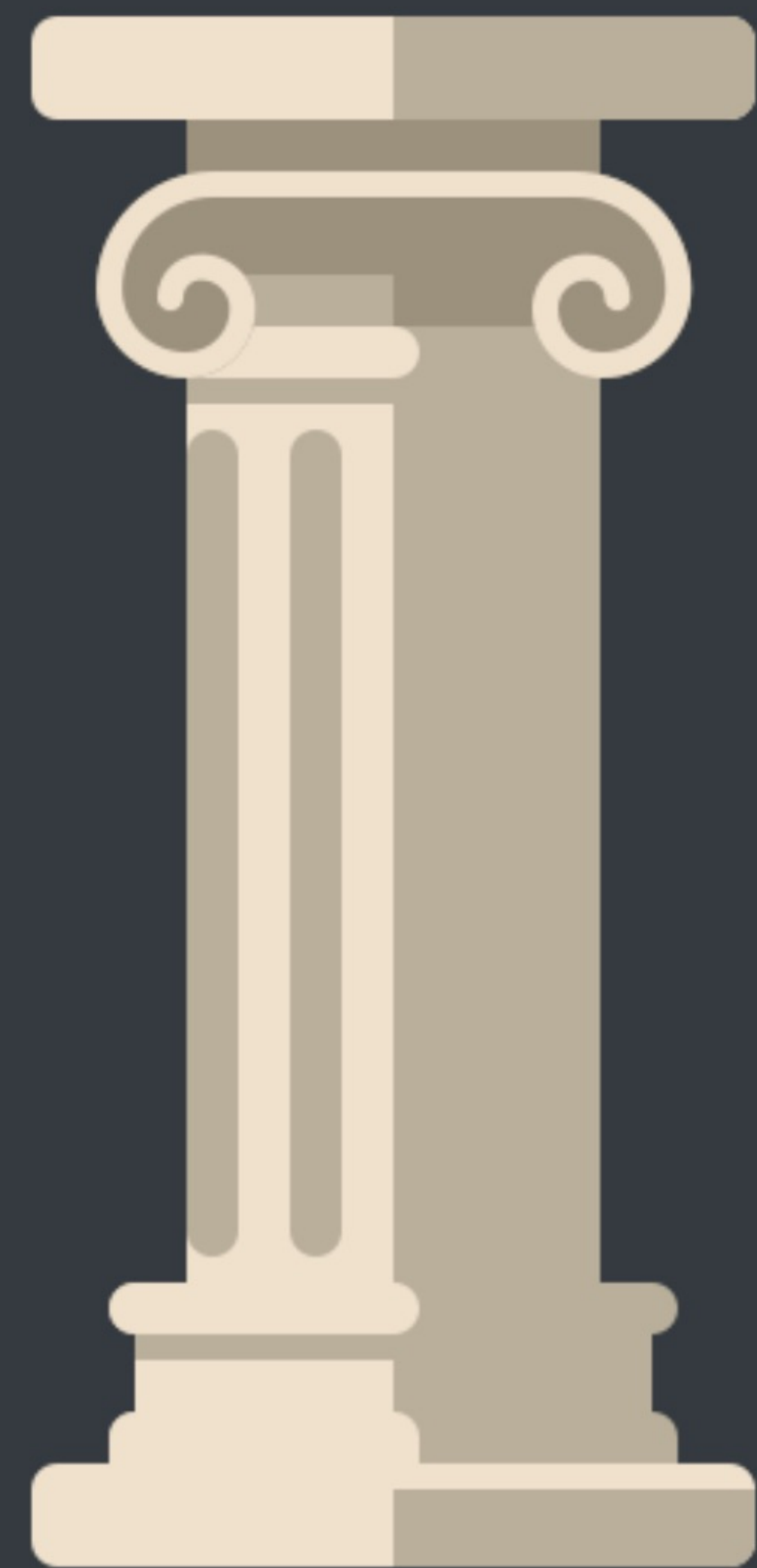
**Abstraction**



**Polymorphism**

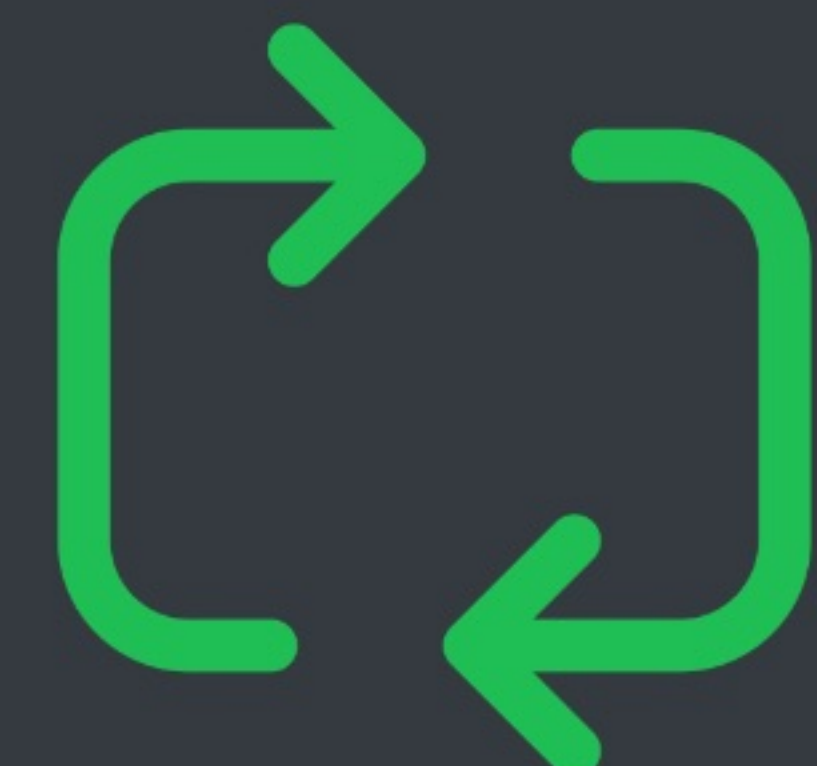


**Encapsulation**



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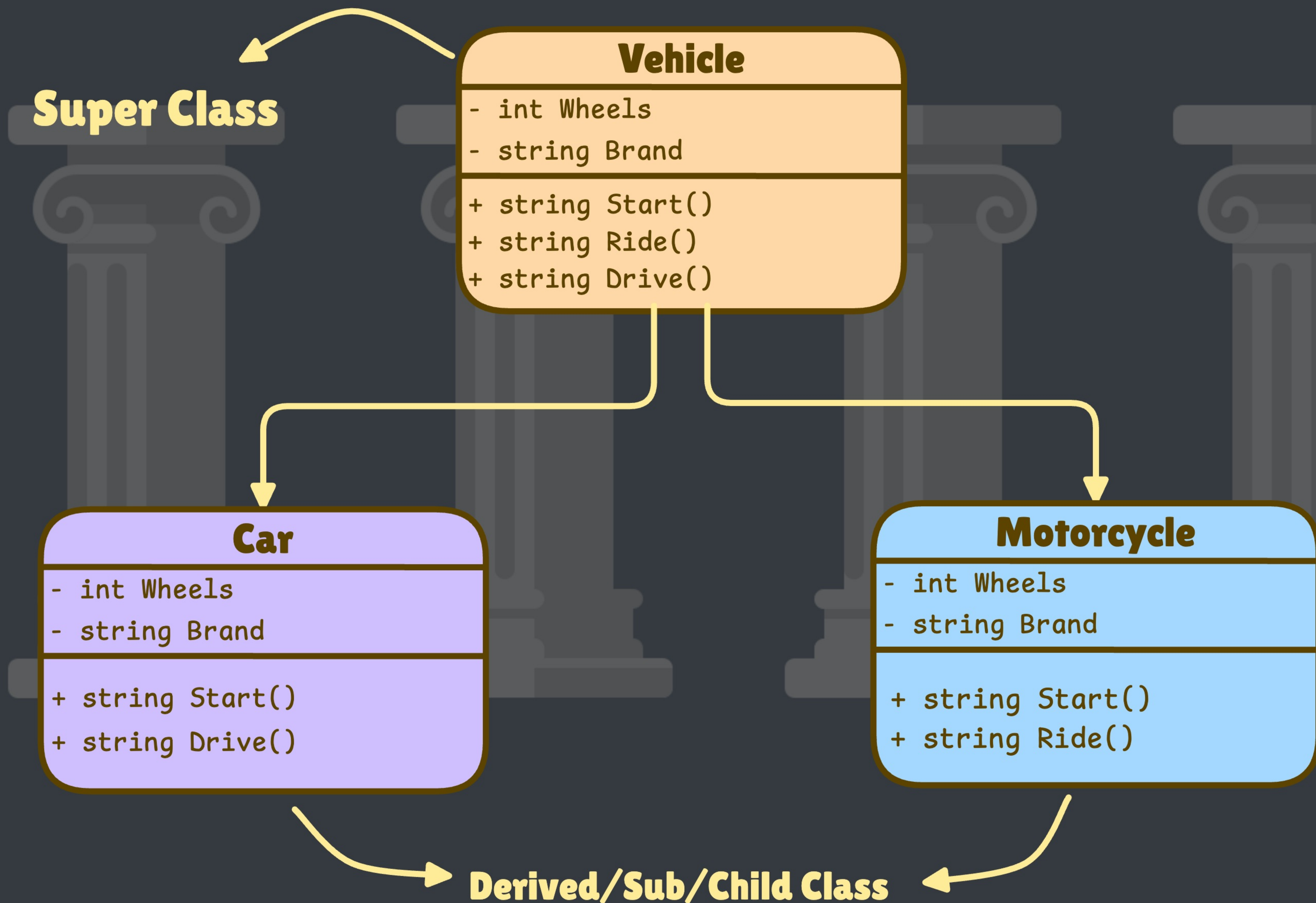
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# Inheritance

**Inheritance refers to the ability of one class (class) to inherit properties and characteristics to another class. This increases code reusability and ensures a traditional relationship between classes.**



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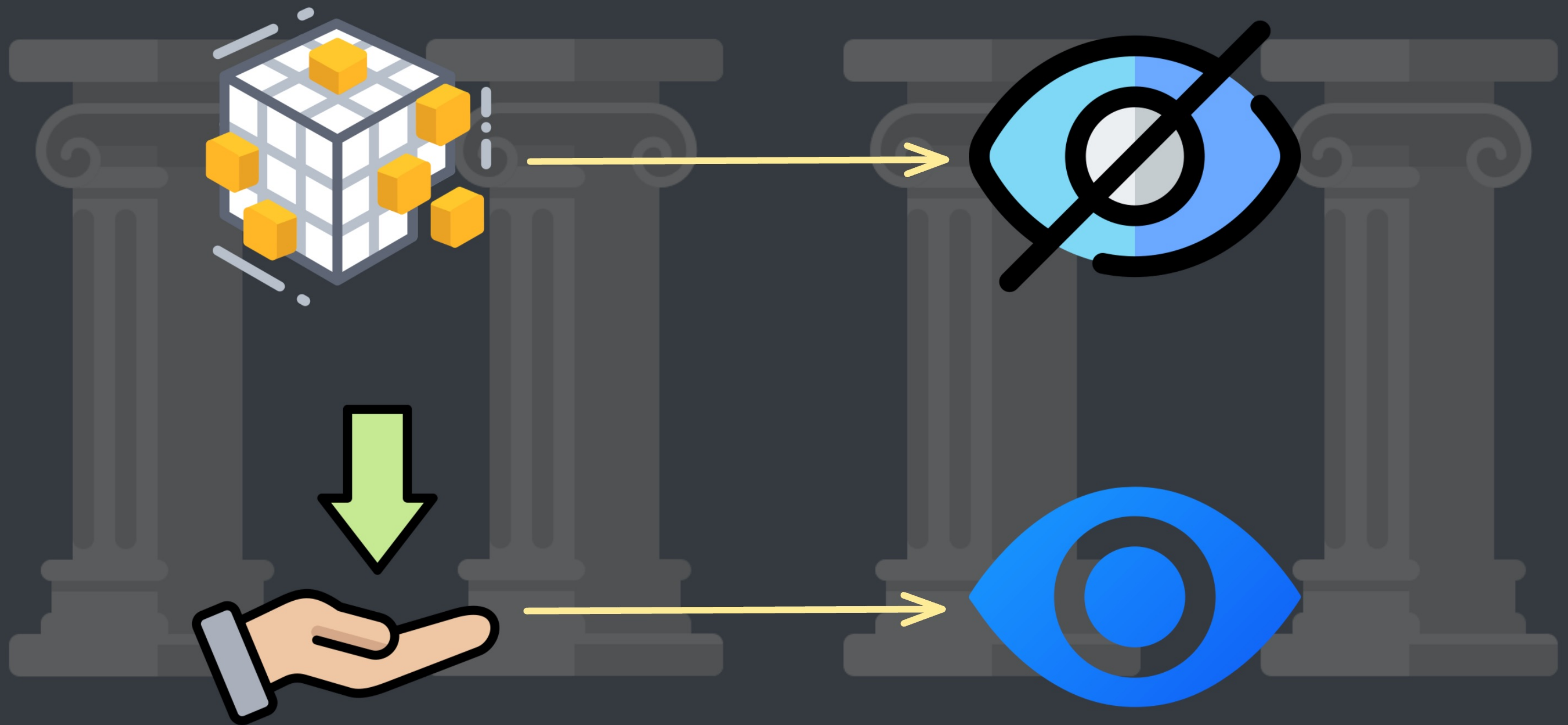
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# Abstraction

**Abstraction aims to reduce complexity by highlighting the essential features of an object or a class, hiding unnecessary details, or neglecting irrelevant aspects.**



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# Encapsulation

**protects the methods, data, and variables of any object from misuse by hiding them from other objects and limiting access to them.**

## **The main advantages of Encapsulation are:**

**Privacy:** Limits access to data and methods within a class, ensuring confidentiality by hiding internal details and protecting against unwanted external interference.

**Modularity:** Changes to the internal details of an object do not affect external code, promoting modularity and easier maintenance.

**Maintainability:** Encapsulation improves code maintainability by ensuring that changes to internal class details only affect methods within the class, not external code.

**Encapsulation:** Combines data and functionality, making the class easier to understand and encapsulated for effective use.



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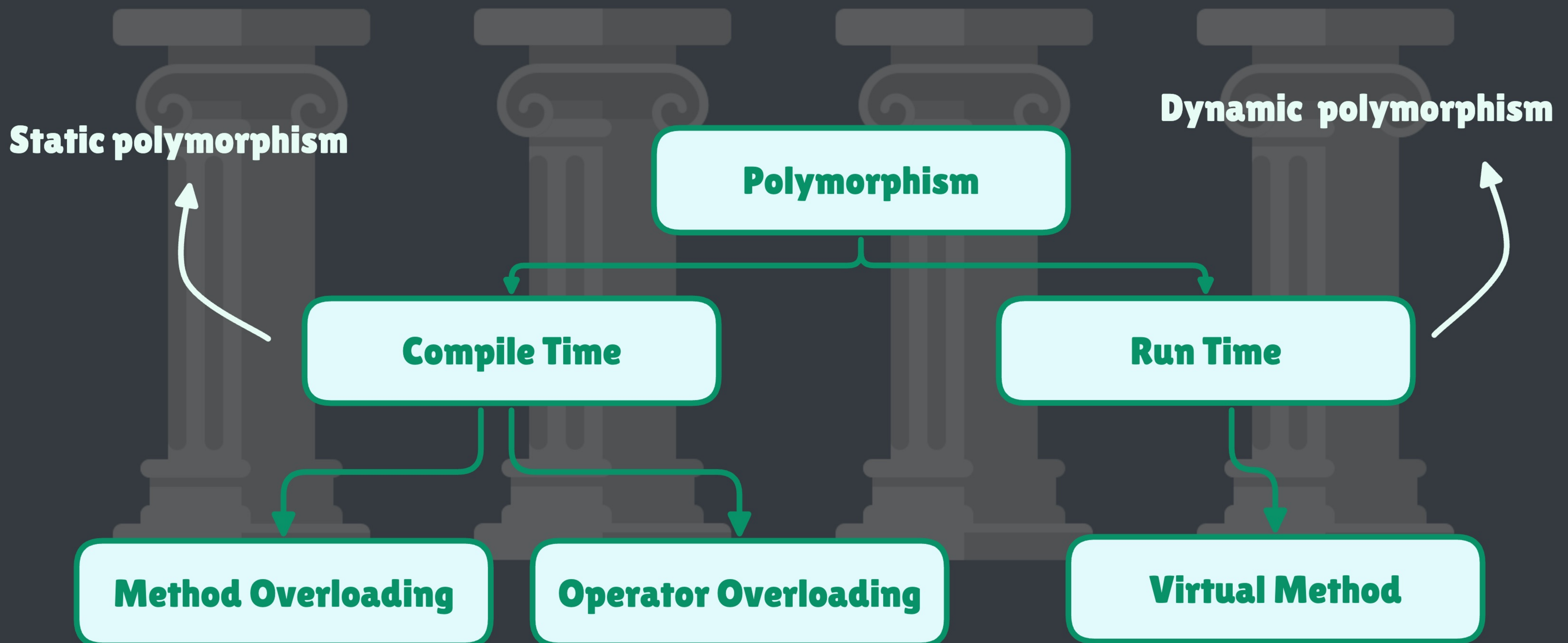
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# Polymorphism

**Polymorphism is the ability of objects to take on different forms, allowing the same method or operation to behave differently based on the object it is acting on.**



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