

Composition

Composition:

Composition is an object-oriented programming concept where one class contains objects of other classes as members. For example:

- The `Car` class **has-a** `Engine`, which is an example of composition.
- The `Car` object uses the `Engine` object to perform its functionality (like starting the car).

Why do we use composition?:

We use composition to achieve reusable code. Composition allows you to create complex objects by combining simpler, smaller objects. It helps in:

- **Reusability:** You can reuse existing classes without modifying them.
- **Flexibility:** You can easily change or replace components of a class without affecting the entire structure.
- **Maintainability:** It's easier to update or extend individual components without breaking the whole system.

How do we use composition in our code?

In our code, we use composition by creating an object of one class inside another class as a field or property. This way, the class that contains the object **has** another class as part of its structure. This allows us to create more complex objects by combining simpler ones,