

Learning Creational Design Patterns



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Design Patterns

Creational Pattern

Provides object
creation
mechanism

Structural Pattern

Explains how to
assemble objects
and classes into
larger, flexible
structures

Behavioral Pattern

Deals with
algorithms and
assignment of
responsibilities
between objects



Design Patterns

Creational Pattern

Provide various object creation mechanisms, which increase flexibility and reuse of existing code



Why Creational Design Pattern?

```
Object $ob1 = new Object();
```



Creational Design Patterns

Factory Method

Abstract Factory

Builder

Prototype

Singleton



Creational Design Patterns

Factory Method

Singleton



Creational Design Patterns

Factory Method

Provides interface for creating objects in superclass, but allows subclass to alter the type of objects that will be created

Singleton



Problem: Quick Scenario

Courier Application

Truck transport



`planCourierDelivery()`
packing
dispatching
delivering



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Problem: Quick Scenario

Courier Application

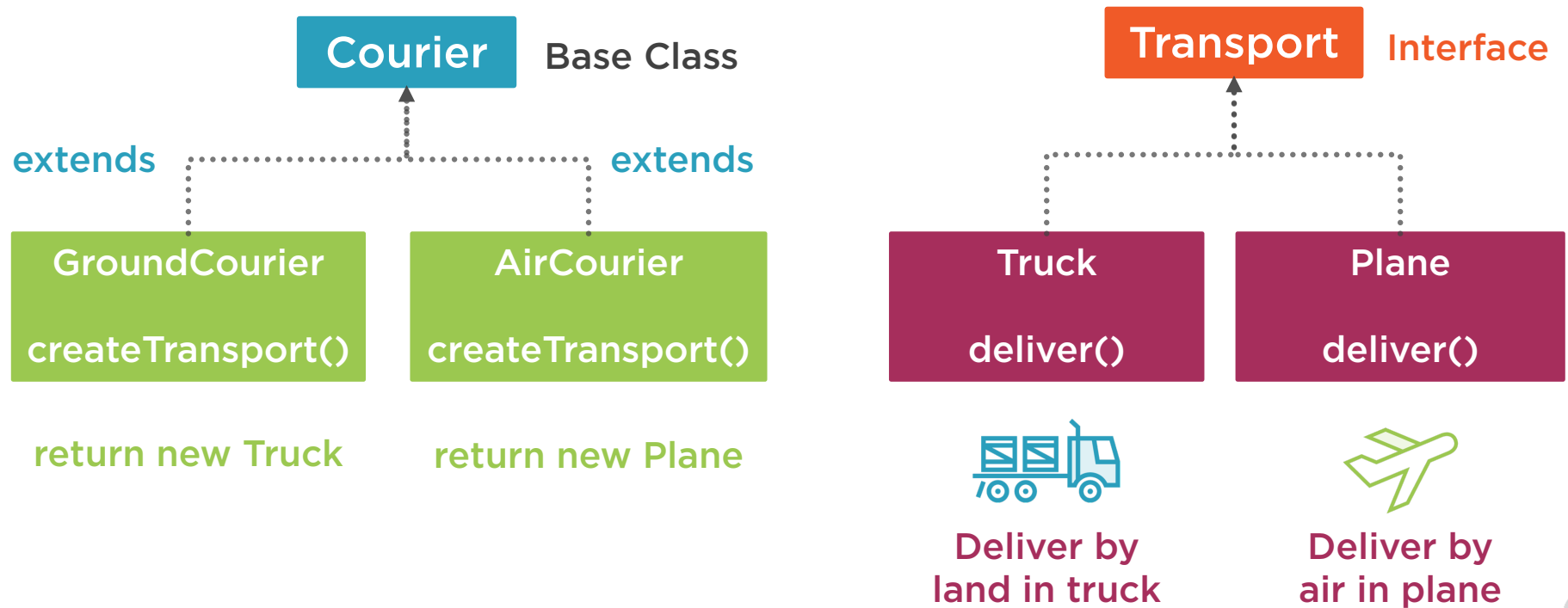
Truck transport



planCourierDelivery()
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Factory Method

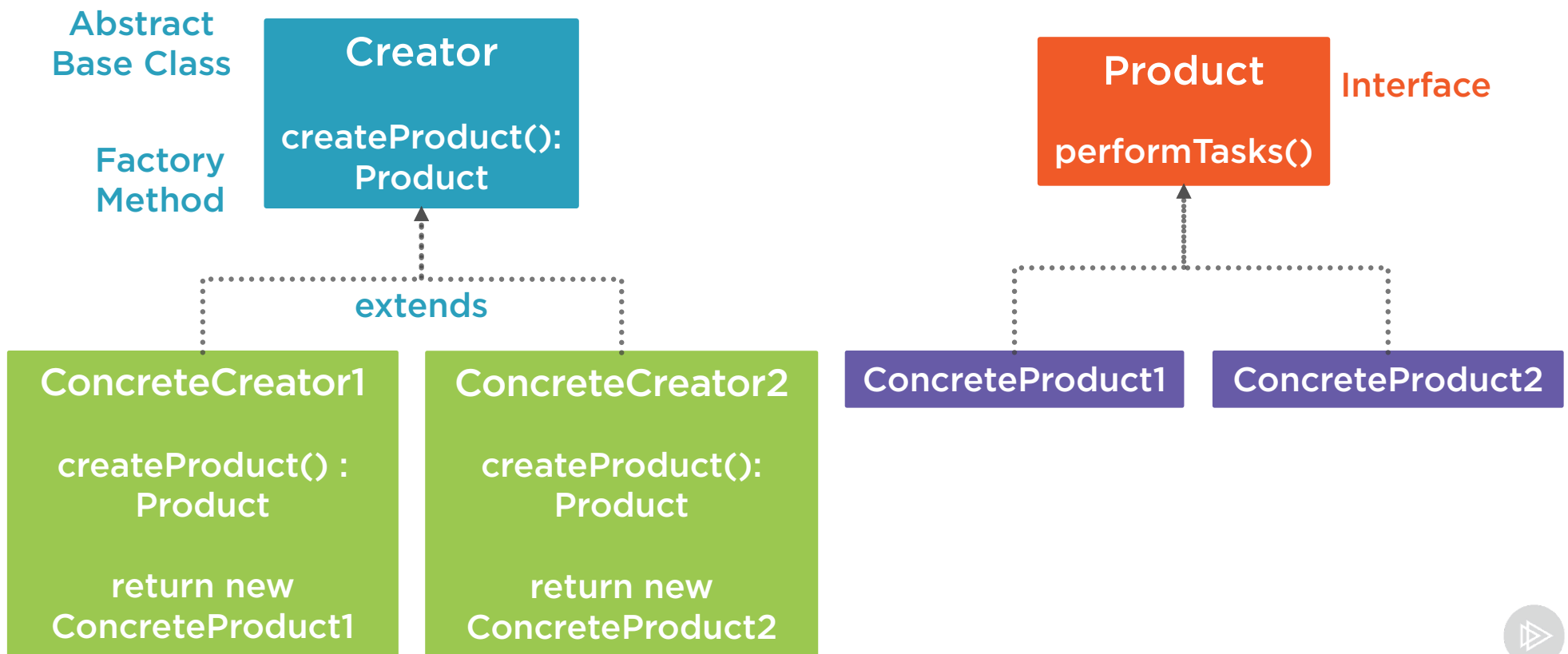


Factory Method

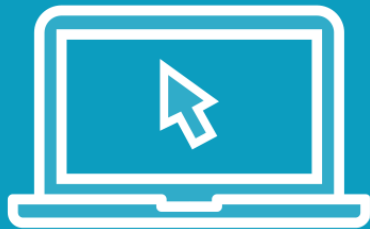
Encapsulate What Varies



Factory Method



Demo



Implementing Factory Method Pattern



Factory Method



Uncertain about the type of objects we might have to create and work on

Separates the object creation code from code which uses the product



Creational Design Patterns

Factory Method

Provides interface for creating objects in superclass, but allows subclass to alter the type of objects that will be created

Singleton



Creational Design Patterns

Factory Method

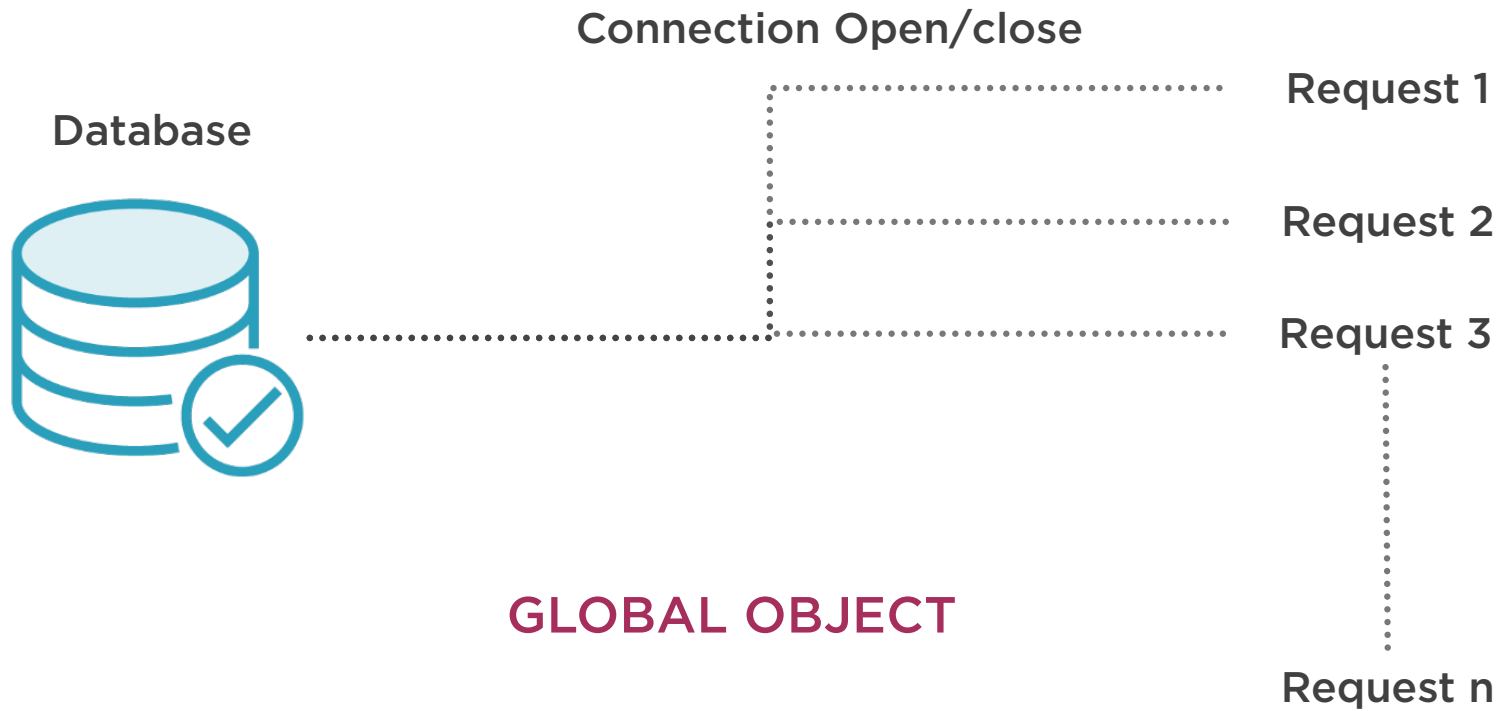
Provides interface for creating objects in superclass, but allows subclass to alter the type of objects that will be created

Singleton

Ensures that a class has only one instance, while providing a global access point to this instance

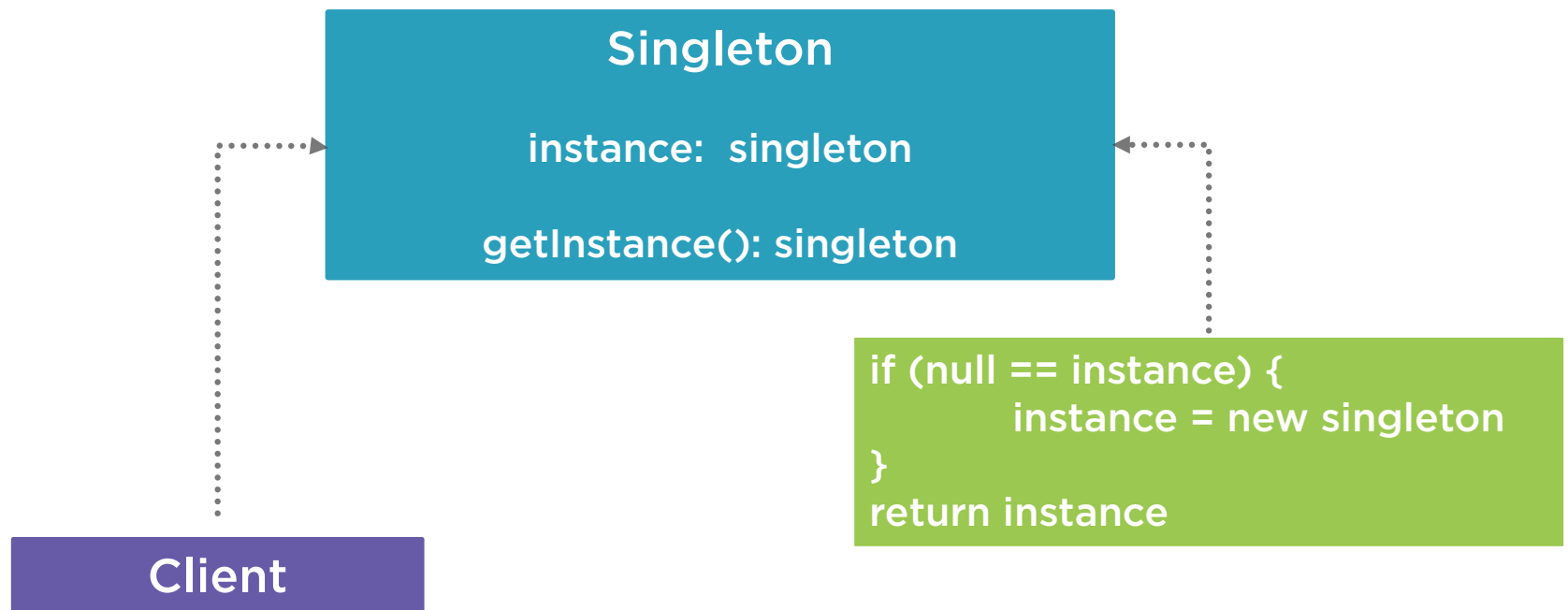


Problem: Quick Scenario





Singleton Pattern



```
private function __construct() {  
    // ...  
}  
  
public static function getInstance() {  
    // ...  
}
```

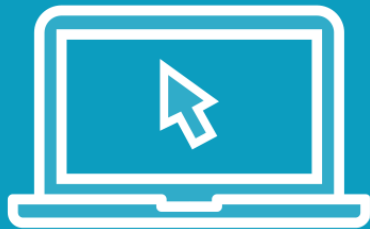
Singleton Pattern

Make default constructor private

Create a static creation method



Demo



Implementing Singleton Pattern



Singleton



Just to have a single instance of the class available to all clients

Testing becomes an issue with this pattern



Summary



Creational pattern provides object creation mechanism

Factory method is used when the types of object to work on is uncertain

Singleton pattern is used when only a single instance of class is required for entire application



Creational Pattern in PHP



Up Next:
Using Structural Design Patterns

