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ITU

```
// force players to be initialized upon first level load
for (i=0; i<MAXPLAYERS; i++)
    players[i].playerstate = PST_REBORN;

usergame = true; // will be set false if a demo
paused = false;
demoPlayback = false;
autoMapSave = false;
viewactive = true;
gameepisode = episode;
gamelevel = map;
gameskill = skill;

viewactive = true;
```

Agenda

IoC Container

Adapter

Factory Method

Singleton

Façade

Chain of Responsibility

Strategy

Bridge

Saved for later:

Command (MVVM)

Observer (MVVM)

Proxy (Web API)

Probably not covered:

Decorator

Visitor

Composite

IoC Container

Tool to facilitate dependency injection.

Using a factory to either manually or automatically create types at runtime.

Various implementations:

- `Microsoft.Extensions.DependencyInjection`
- Ninject
- Unity
- AutoFac
- StructureMap

IoC Container II

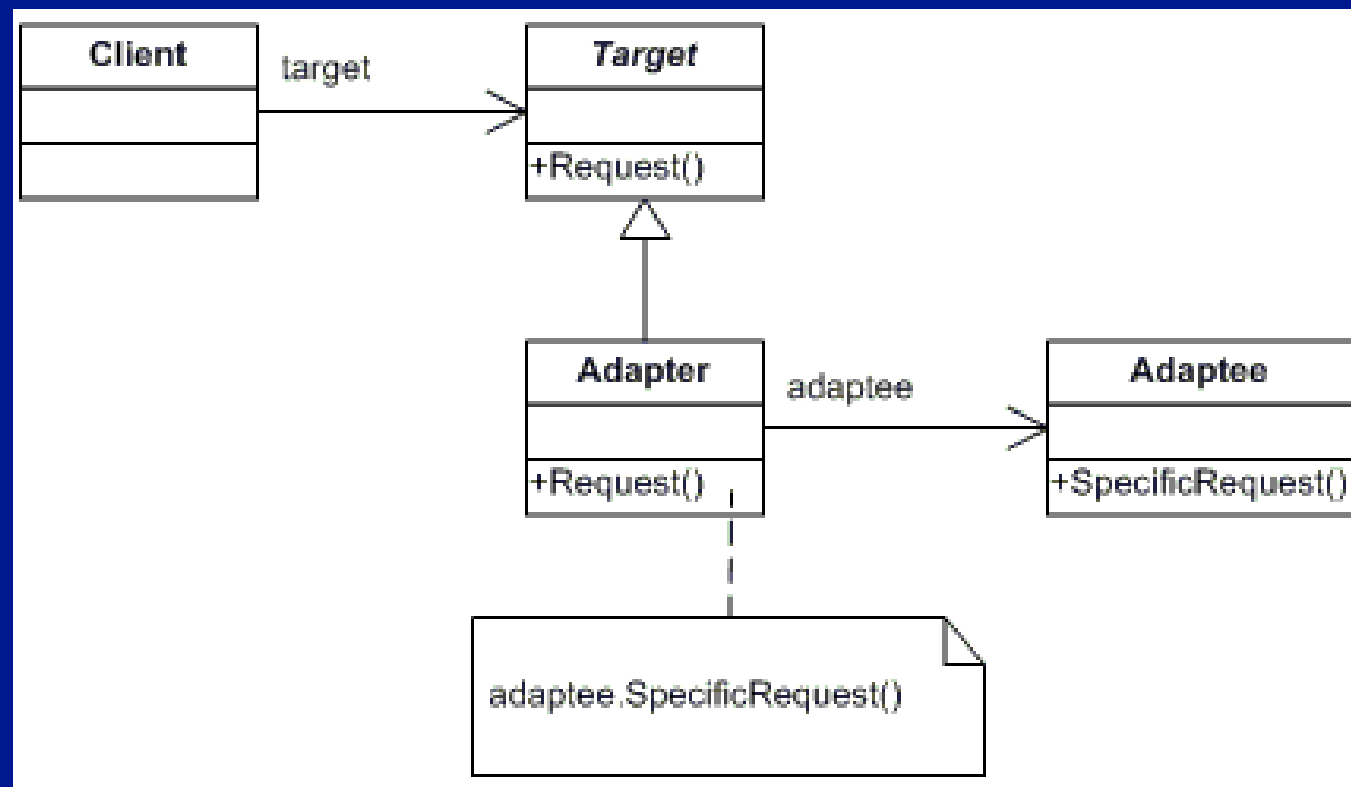
Lifetime:

- Transient (every time)
- Scoped (once per request)
- Singleton (once)

Adapter aka Wrapper

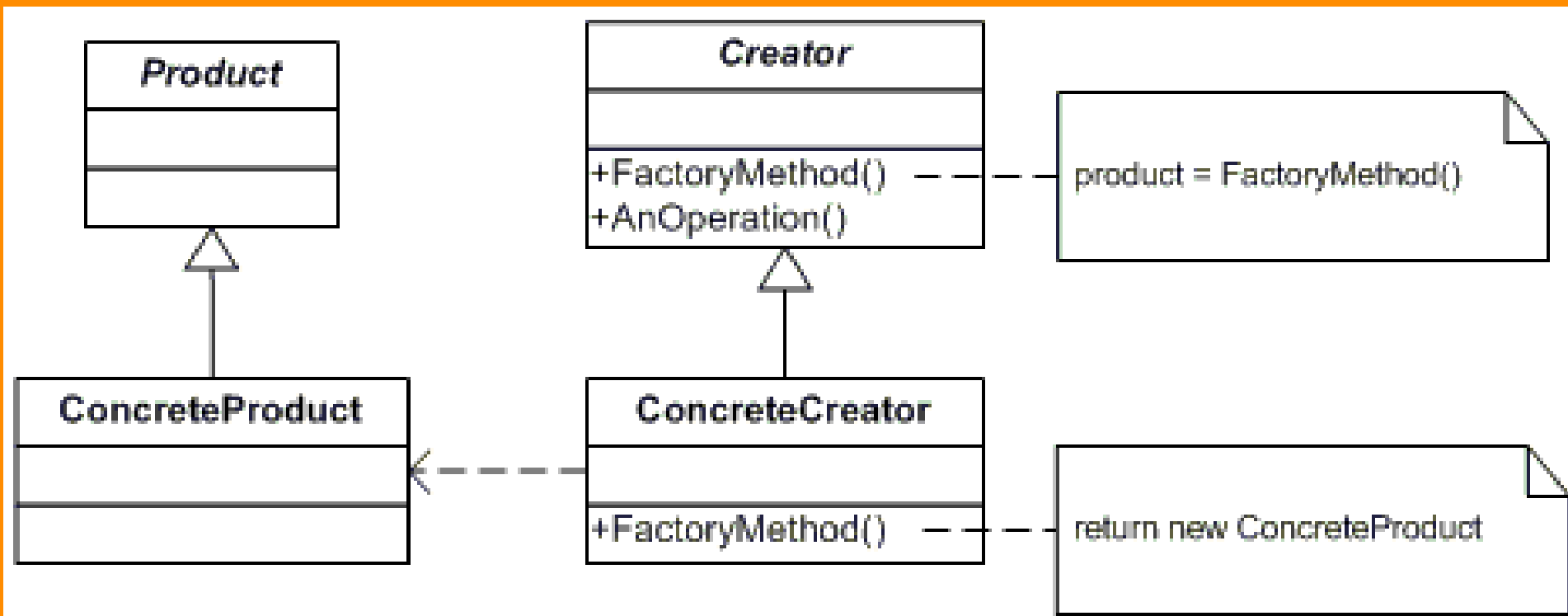
Unmodifiable implementation which does not match the interface you need.

Static or sealed class or class in another assembly.



Factory Method

A method which can creates instances of a given type.



Singleton

Only ever one single instance of a given type.

Considered an anti-pattern by many, it:

- is overused
- introduces unnecessary restrictions in situations where a sole instance of a class is not actually required
- introduces global state into an application

Singleton II

Use carefully

Implement using an interface

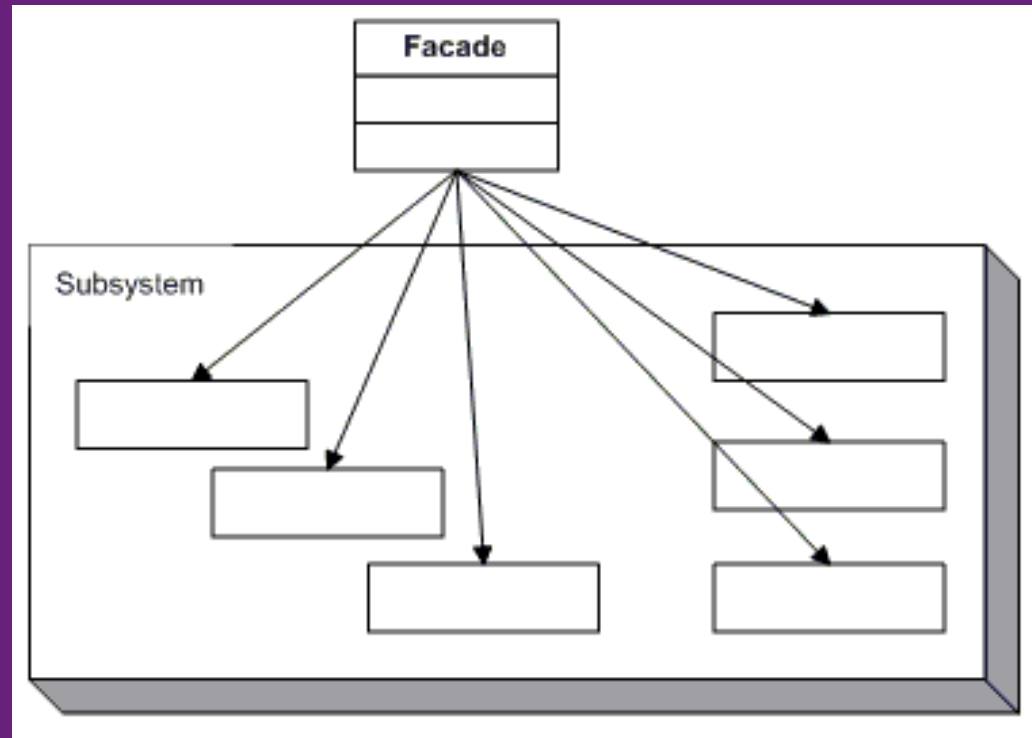
Use an IoC container

Singleton
-instance : Singleton
-Singleton() +Instance() : Singleton

Façade

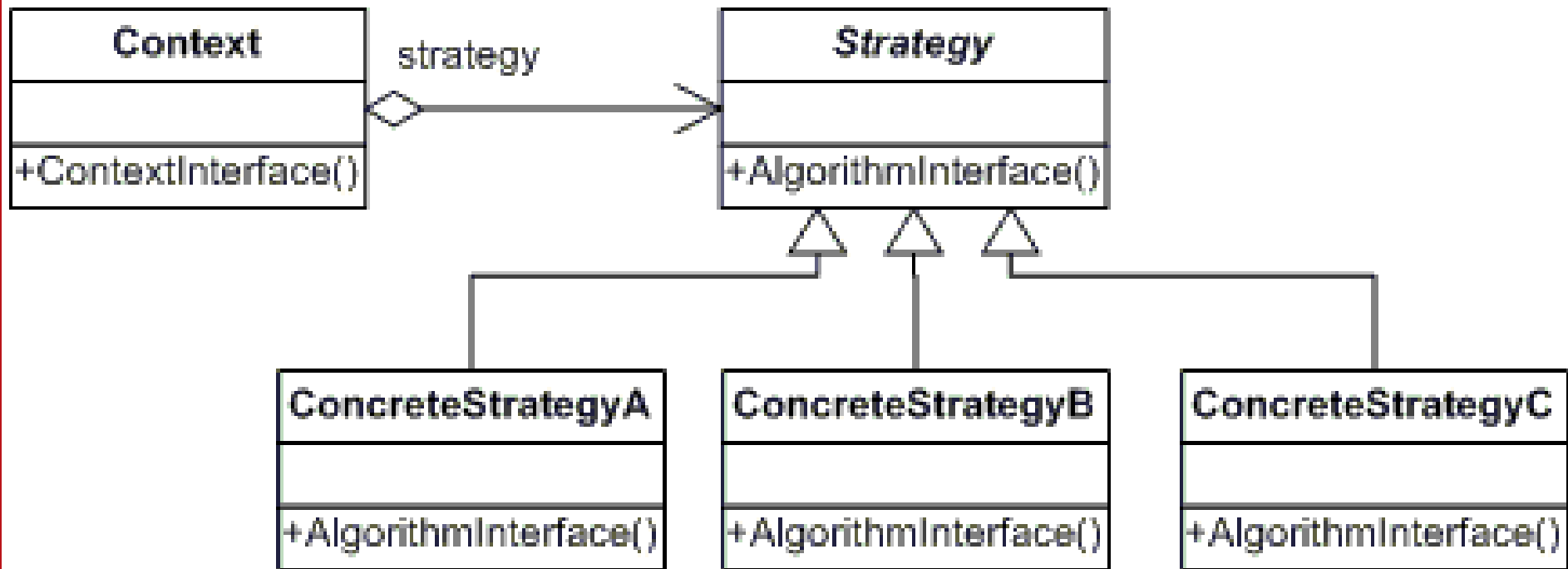
Simplify the use of a system

Provide a unified interfaces for a group of “dispersed” functionalities from a multitude of interfaces/classes



Strategy

Define a family of algorithms, encapsulate each one, and make them interchangeable. Strategy lets the algorithm vary independently from clients that use it.



Bridge

Decouple an abstraction from its implementation so that the two can vary independently.

