Design Defects and Restructuring

LECTURE 09

SAT, OCT 26, 2019

Structural Patterns

Adapter

Bridge

Composite

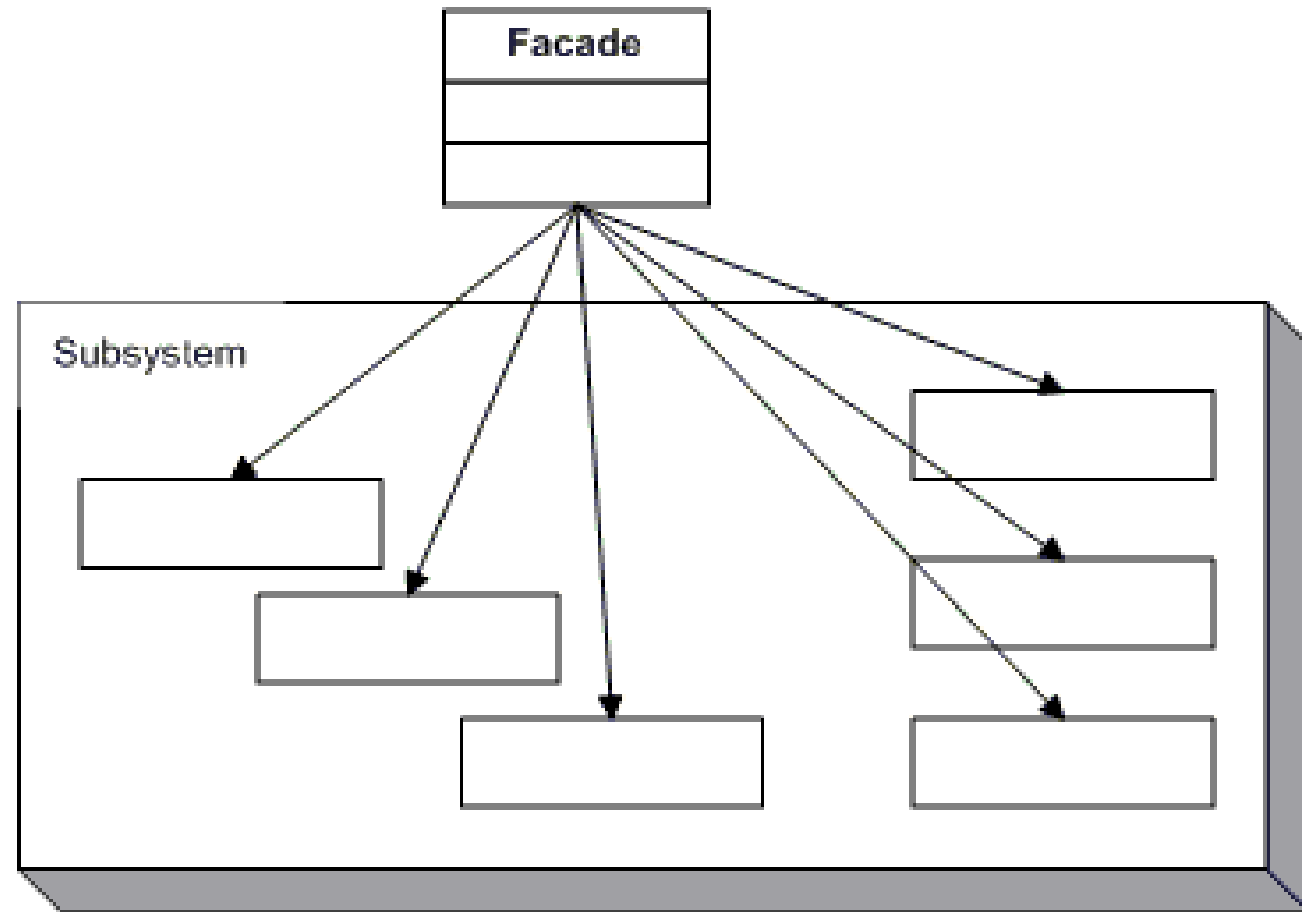Decorator

Façade

Flyweight

Proxy

Façade

Intent
- ◦ Provide a unified interface to a set of interfaces in a subsystem
- ◦ Façade defines a higher-level interface that makes the subsystem easier to use

Applicability
- ◦ You want to provide a simple interface to a complex subsystem
- ◦ There are many dependencies between clients and the implementation classes of an abstraction
  - ◦ Introduce a facade to decouple the subsystem from clients and other subsystems, thereby promoting subsystem independence and portability
- ◦ You want to layer your subsystems

Façade

Flyweight

Intent
- ◦ Use sharing to support large numbers of fine-grained objects efficiently

Applicability
- ◦ An application uses a large number of objects
- ◦ Storage costs are high because of the sheer quantity of objects
- ◦ Most object state can be made extrinsic
- ◦ Many groups of objects may be replaced by relatively few shared objects once extrinsic state is removed
- ◦ The application does not depend on object identity
  - ◦ Since flyweight objects may be shared, identity tests will return true for conceptually distinct objects

Flyweight