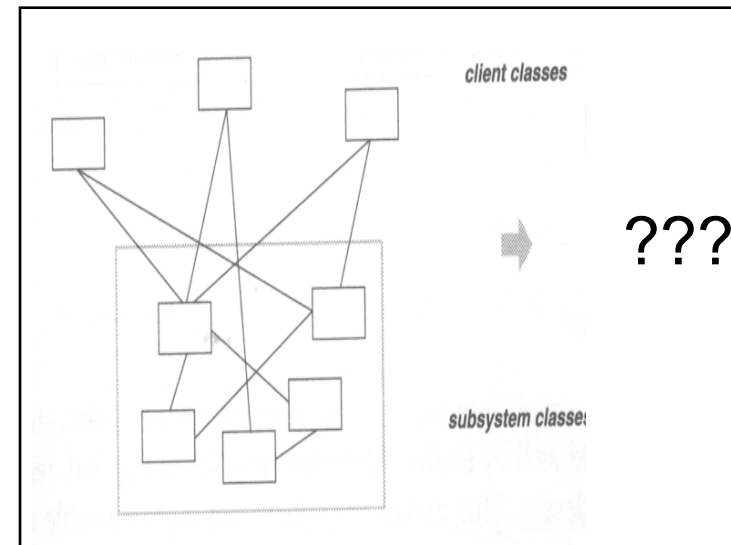


## Façade pattern

1

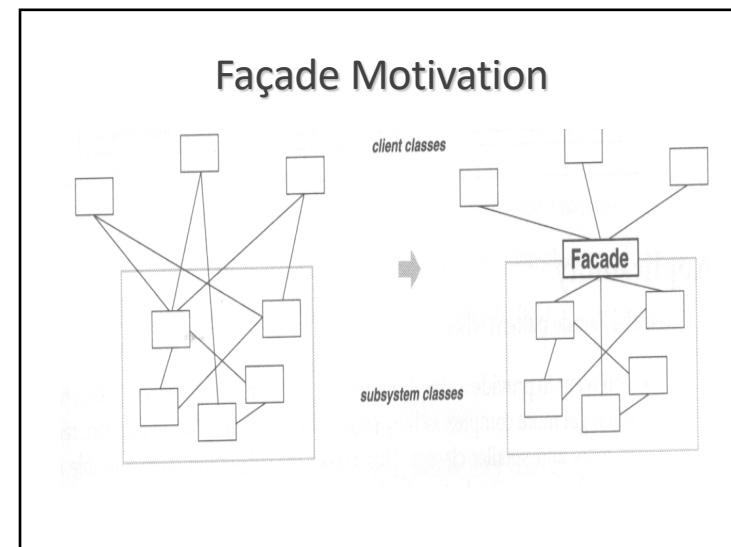


2

## The Façade Design Pattern

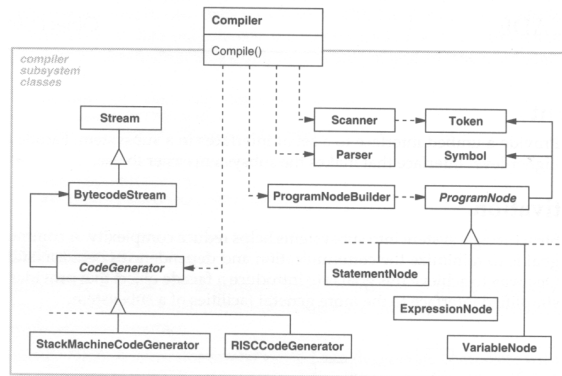
- Intent
  - Provide a unified interface to a set of interfaces in a subsystem. Façade defines a higher-level interface that makes the subsystem easier to use
- Motivation
  - Simplifying system architecture by unifying related but different interfaces via a Façade object that shield this complexity from clients.

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## Facade - Motivation



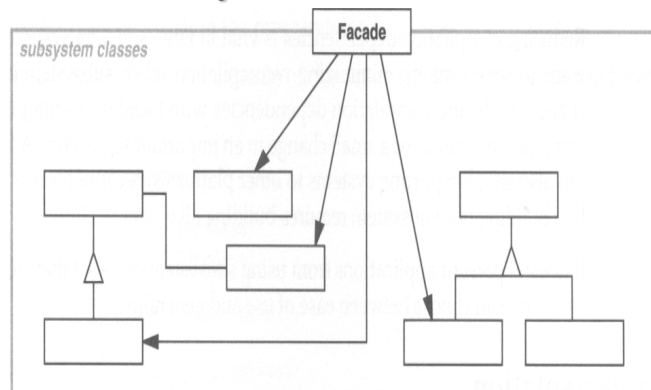
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## Façade Applicability

- Contrary to other patterns which decompose systems into smaller classes, Façade combines interfaces together to unified same one.
- Separate subsystems from clients via yet another unified interface to them.
- Levels architecture of a system, using Façade to separate the different subsystem layers of the application.

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## Façade Structure



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## Façade Participants

- Façade (Compiler)
  - Knows which subsystem classes are responsible for a request
  - Delegates client requests to appropriate subsystem objects
- Subsystem classes (Scanner, Parser, ProgramNode, etc.)
  - Implement subsystem functionality
  - Handle work assignment by the Façade object
  - Have no knowledge of the Façade – i.e., no reference upward.

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## Façade Collaboration

- Clients
  - Sending requests to the Façade, which forwards them appropriately to the subsystem components.
  - Façade may do some adaptation code
- Separation
  - Clients do not need to know, or ever use the subsystem components directly.

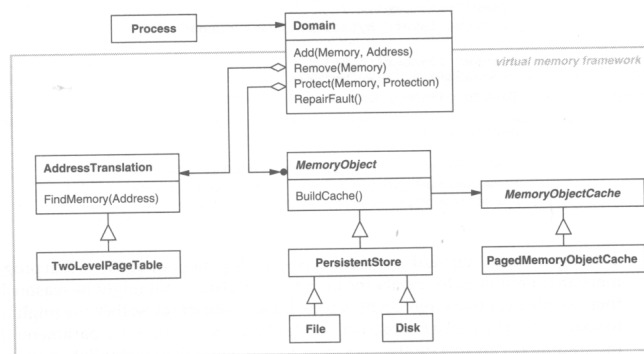
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## Façade Consequences

- Shielding Clients
  - Reduces the number of objects clients need to deal with
- Promotes weak coupling
  - Between subsystems and clients
  - Although(!) components in the subsystem may be strongly coupled.
  - Help layer the system (also prevents circular dependencies)
  - Reduces compilation dependencies in large systems – more efficient application building (compilation)
- But – permits direct use
  - In case individual components offer meaningful service to clients – the Façade mediates, but does not block access.

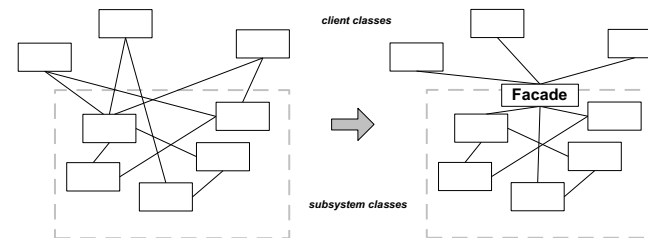
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## Façade Known Uses



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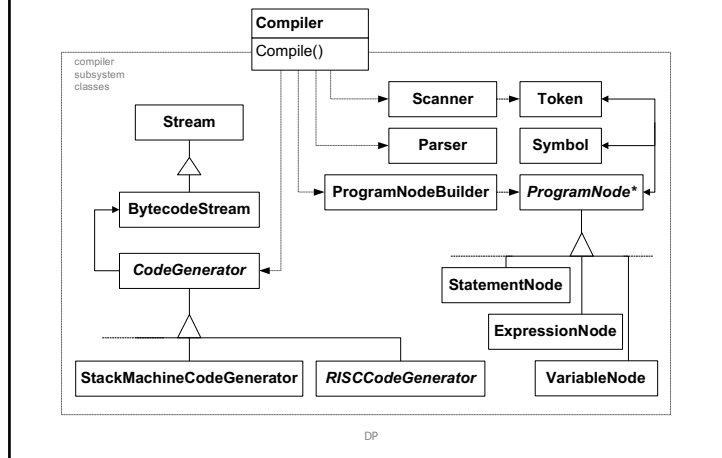
## Facade Motivation 1



DP

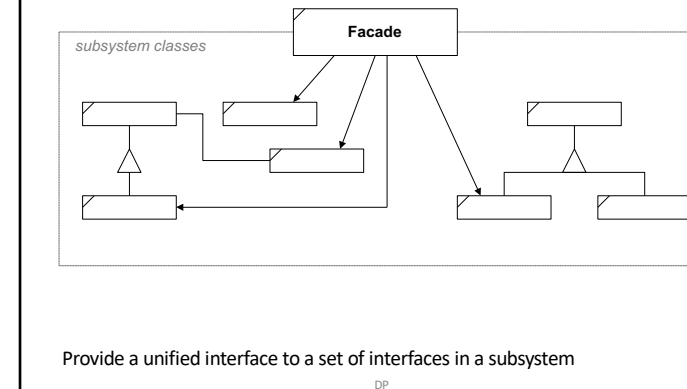
12

## Facade Motivation 2



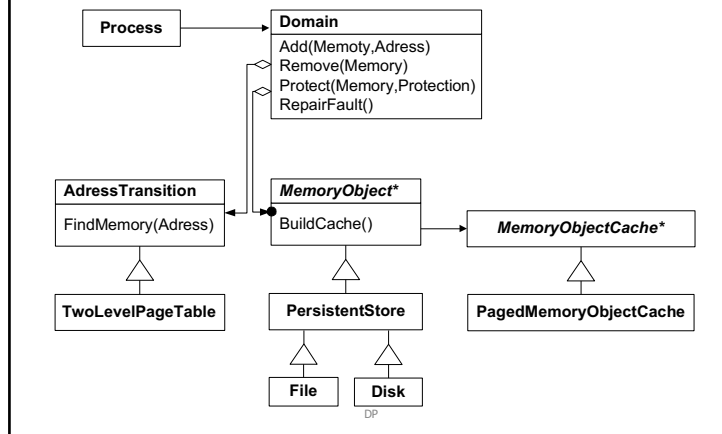
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## Facade Structure



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## Facade Known Users



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