

SOEN 387 Web-based Enterprise Application Design

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Fall, 2014

Outline

Application Layer

Assignment 1 Questions

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Application Layer

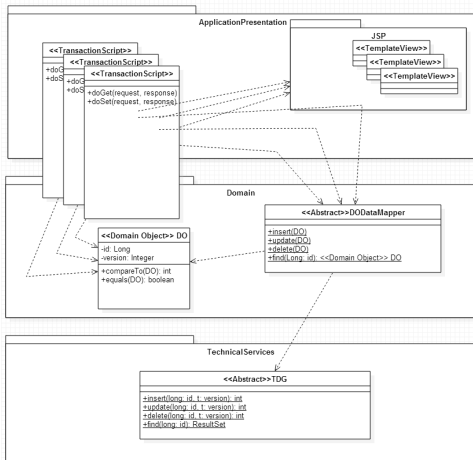
Assignment 1
Questions

Where We're At, Architecturally

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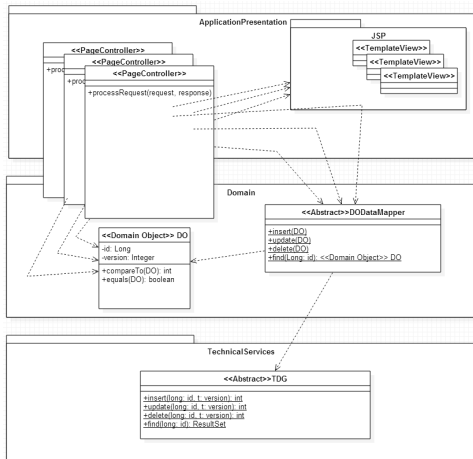


Page Controllers, A Cosmetic Touch Better

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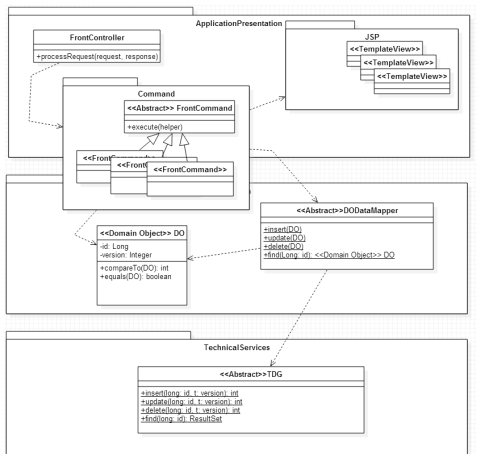
- ▶ Our Transaction Scripts were already effectively Page Controllers

Front Controller Diagram

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- ▶ This actually refactors functionality

Front Controller

- ▶ Really a collection of patterns
 - ▶ Front Controller
 - ▶ Front Command
 - ▶ Helper
- ▶ We invoke the Front Controller directly
- ▶ vs. invoking each Page Controller Specifically
- ▶ Recall that each Page Controller loosely represents a Use Case
- ▶ If we have a single entry point, what new responsibility is created?

Front Controller Responsibilities

- ▶ Receive incoming requests
- ▶ Determine appropriate Command based on request and redirect

Deciding on Commands, Parameters

- ▶ We can pass a parameter, e.g. `command=ListPeople`
 - ▶ Can use if statements/switch to call correct Command. . .
 - ▶ or dynamically instantiate using reflection
 - ▶ Must be careful what we let people instantiate!
 - ▶ Taking Class name and letting FrontController add package info is ok
 - ▶ Some sort of map is better
- ▶ We'll look at dynamic instantiation in a nearby tutorial

Deciding on Commands, URL Parsing

- ▶ We can parse the URL to pick commands
- ▶ This is a good idea!
 - ▶ This can be done statically as above. . . usually dynamically
 - ▶ Almost always uses some form of map
 - ▶ Can also pull out other info from URL
 - ▶ We'll talk about REST in a later lecture

What About Receiving Incoming Requests

- ▶ Logging for all requests
- ▶ DB Connection setup (including pooling if that's how you roll)
- ▶ Session Management
- ▶ Role-level/Use Case-level authorization
- ▶ This can also include common initialization of the servlet, but only relevant in systems that persist (possibly not stuff like PHP)

Front Controllers and DB Setup

- ▶ One Connection per Request is a powerful thing to be able to rely on
- ▶ It means you need to start transactions at the top, and commit/rollback at the end
- ▶ Also means properly letting go of database resources where applicable (e.g. servlets)
- ▶ This can be done with Filters too

Front Controllers and the User

- ▶ If we store a User POJO between requests, where is it stored?
- ▶ If we store associated Roles/Authorization, where is it stored?
- ▶ What if we wanted to delete/remove a User while they were using the system?
- ▶ How about never storing a POJO in the session, just storing the id
- ▶ Instantiate necessary POJOs from ids in Session in Front Controller
- ▶ Probably the extent of Domain Object use in there...

Front Controllers and User Roles

- ▶ Use Case Diagrams show roles that can do stuff
- ▶ Why not directly apply this in web apps
- ▶ So it's not crazy, and maybe a good idea to apply this in the Front Controller

Front Command and Helper?

- ▶ Nothing new here.
- ▶ Still mucks with the POJOs and Mappers
- ▶ Still decides on the JSP to use
- ▶ The helper tends to look more like a convenience wrapper for params/attributes

Assignment 1

- ▶ Any Questions?