

D2 / D4: Architectural Styles & Design Patterns Presentations

Title: SE2: Software Design and Architecture.

Course ID: CS 446, SE 464, ECE 452, CS 646

WWW: <http://www.cs.uwaterloo.ca/~rtholmes/teaching/2015winter/cs446/index.html>

Twitter: <https://twitter.com/cs446>

We will cover 9 architectural styles and 9 design patterns in this course. Each team will be given a 15 minute slot to help the class learn about a style or pattern, what its strengths and weaknesses are, and to see how can be used in practice. You should also walk the class through at least one comprehensive example demonstrating how the style or pattern could be used and specifically how it is beneficial to the overall design of the system. All styles and patterns work to address coupling in a specific way; describe how is coupling reduced and what kinds of future changes are enabled by your style/pattern. Each team will signup in class on Jan 29 (or I will assign after if any teams are missing from in class).

You can use any material you can find from books or online in creating your presentation, but you cannot use the projector. Memorable presentations are encouraged as they will better help everyone remember the details of the architectural style you present.

Architectural Style Schedule

Date	Style	Group
Feb 3	Client/Server	Motivatr
Feb 3	Layered	PoolMe
Feb 3	Pipe & Filter	Ourdea
Feb 5	Event Based	GroupGrub
Feb 5	Peer to Peer	Musio
Feb 5	Publish Subscribe	Mango
Feb 10	Mobile Code	SoundScope
Feb 10	Interpreter	Mezzo
Feb 10	Blackboard	Fami

Design Pattern Schedule

Date	Style	Group
Mar 10	Facade	
Mar 10	Proxy	OneRun
Mar 10	State	iFoundClassmate
Mar 12	Observer	Tutoo
Mar 12	Decorator	
Mar 12	Composite	Motcha
Mar 17	Command	Unbreakable
Mar 17	Strategy	
Mar 17	Visitor	

Presentation Details:

- 15 minute maximum.
- Two primary components:
 - Static description of the style / pattern
 - Dynamic description of how the style / pattern is useful over time
 - Comprehensive example / tutorial that demonstrates the style / pattern
- No slides; be creative. Make it memorable.

If you are presenting an architectural style; does the style:

- Have its own vocabulary for its components and connectors? (define)
- Impose specific topological constraints? (diagram)
- Most applicable to specific kinds of problems?
- Engender specific kinds of change resilience?
- Have any specific negative behaviours?
- Support/inhibit specific NFPs?

If you are presenting a design pattern; does the pattern:

- Have a purpose / motivation?
- Intended use case?
- Have its own vocabulary? (define)
- Specific structure or runtime behaviour?
- Have known consequences (both positive and negative)?
- Improve / degrade NFPs discussed during architectural discussions?

Deliverables:

While the primary deliverable is the presentation itself, by 0800 on the day of your presentation you must email rth.se2@gmail.com a description of the example you will present to the class. The focus point of this description should be a visual representation of the components / classes associated with your style / pattern. This should be accompanied by a short description of the positive properties your style / pattern provides to the example.