Schedule Generator & Exam preview

CSSE 221

Fundamentals of Software Development Honors

Rose-Hulman Institute of Technology

ROSE-HULMAN INSTITUTE OF TECHNOLOGY

This week: Start ScheduleGenerator

- Today:
  - Planning for Schedule Generator Project
- Wednesday:
  - Fork Join parallelism
  - Exam
- Friday:
  - Exam

Exam 2

Sample posted on Moodle

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Exam 2

- Chapters from Text:
  - 1 to 15 (exclude 14) & 21 (includes Recursion)
- Paper part required resources:
  - 8 ½" by 11" sheet of hand written notes
  - Closed computer or electronic devices
  - Closed book
- Computer Part required resources:
  - Open book, notes, computer
  - Limited network acccess

Exam 2

- Covers through end of week 6 (Recursion)
- This Wednesday and Friday (~ 2 to 3 hours)
- Sample exam 2 is posted on Moodle
- Short written portion: closed-book
- Programming portion: open-book, 221 website (including summaries and Piazza), Eclipse workspace
  - You may reference any course materials or any code that you did solo or with a partner

Exam 2 details

- Paper part is worth about 40% to 50%
- Computer part is worth about 50% to 60%
- Spend about 40 to 50 minutes on paper part
- Spend about 1 hour on computer part
- Will give some extra time if needed

More Exam 2 Details

- Venue:
  - Section 1: Olin Hall, room 257/231
  - Section 2: Olin Hall, room 167
- What questions do you have?

Sort and Graphics/GUIs are Tuesday after break, due Sunday!

Capsules round 3

How to do a capsule?
Round 3: +Lecture

- Now you get to teach the whole topic to the class.
- 45 minutes
  - Short lecture (whiteboard, video, or slides OK)
  - Demo
  - Hands-on activity where classmates get a chance to apply knowledge
  - Quiz integrated with your lecture and demo/activity
  - You may skip the summary if you use video/slides and your video/slides + demo contain equivalent detail

Capsule Deliverables

- 48 hours in advance:
  - Email me the quiz, key, and video, slides, or summary
  - Commit your demo to csse221-201410-public
- You may come for advice on topic and presentation if you'd like
  - I'm happy to teach teachers!

Other ideas

- Still need roles (demo-driver, rover, questioner)
  - Add 1 or more people to present the video or slides
  - You'll need to multi-task
- You may move freely between modes (video/slides/live coding/activities)

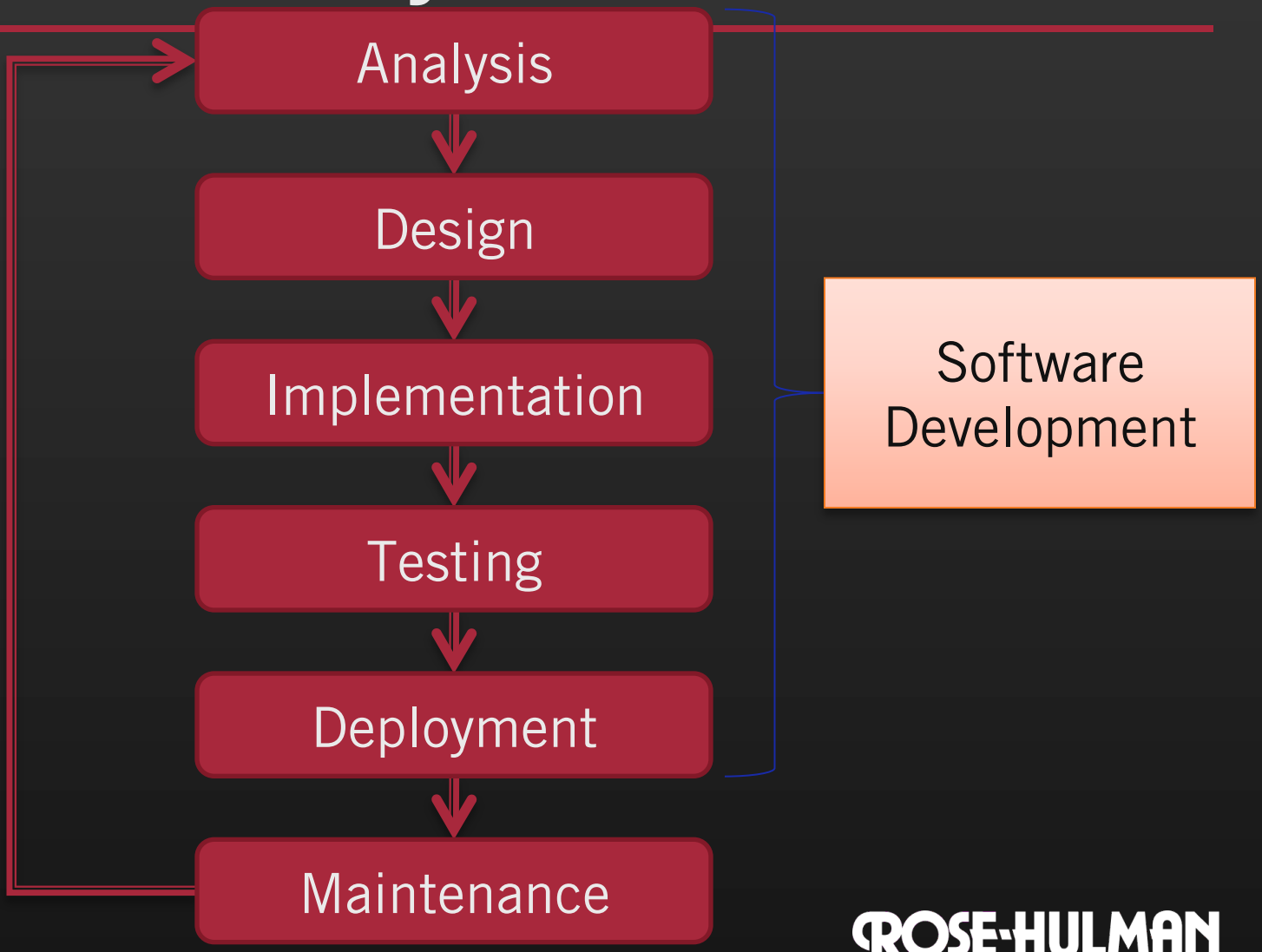
How to give a great presentation!

- Prepare!
  - Research: Know your stuff
  - Summarize: what are the 2-3 most important things I want everyone to learn from this capsule?
  - Spend some time thinking about the flow
  - Rehearse the whole thing together
- Delivery
  - Face your classmates
  - Make eye contact
  - Enunciate clearly and slowly

Capsule Rubric

- New:
  - Context and motivation
  - Summary → Explanation/correctness/ organization
  - Presentation skills
  - Time (OK to go slightly under, but if you don't rehearse, this could really bite you!)

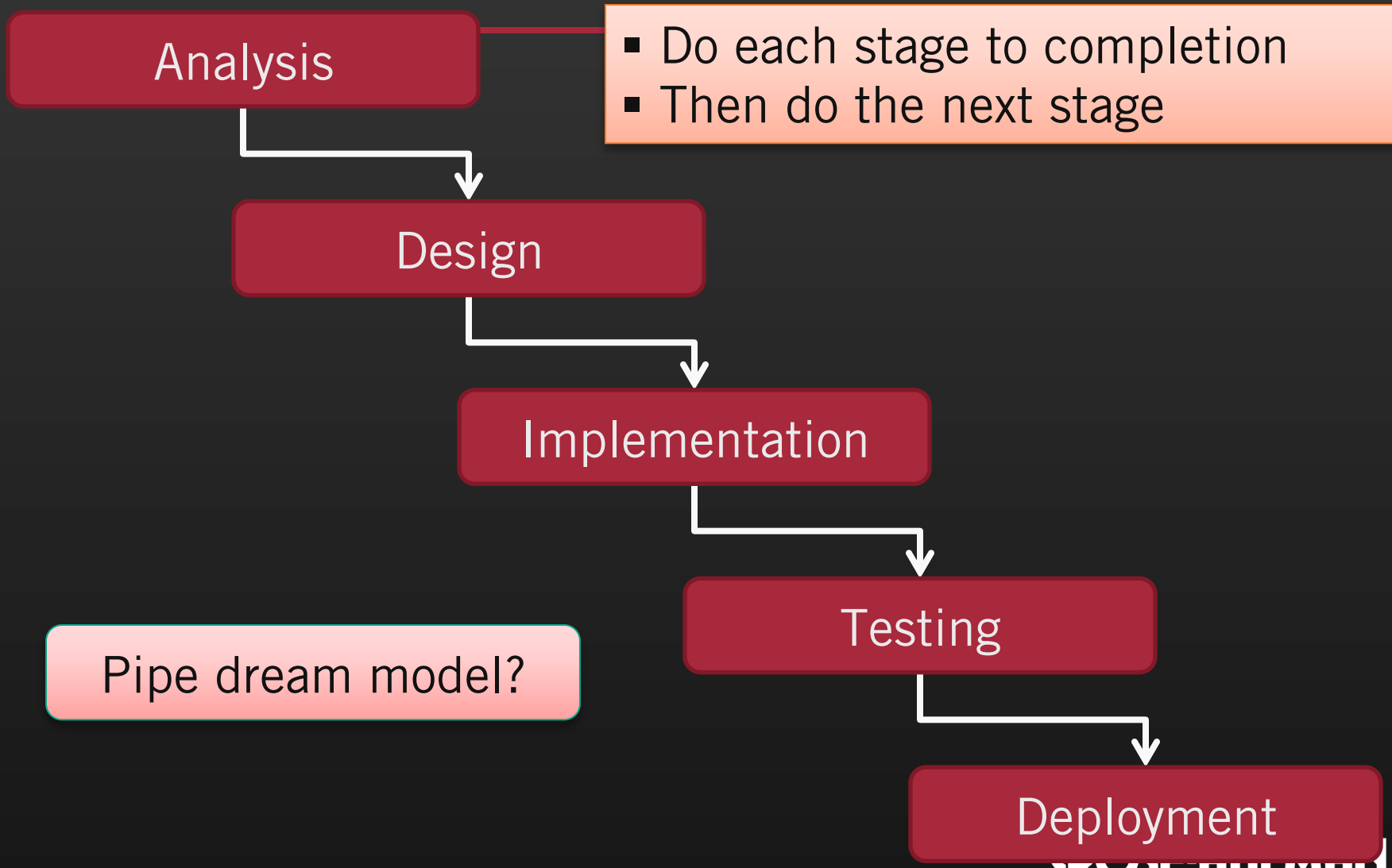
Software Life Cycle



Formal Development Processes

- Standardized approaches intended to:
  - Reduce costs
  - Increase predictability of results
- Examples:
  - Waterfall model
  - Spiral model
  - “Rational Unified Process”

Waterfall Model



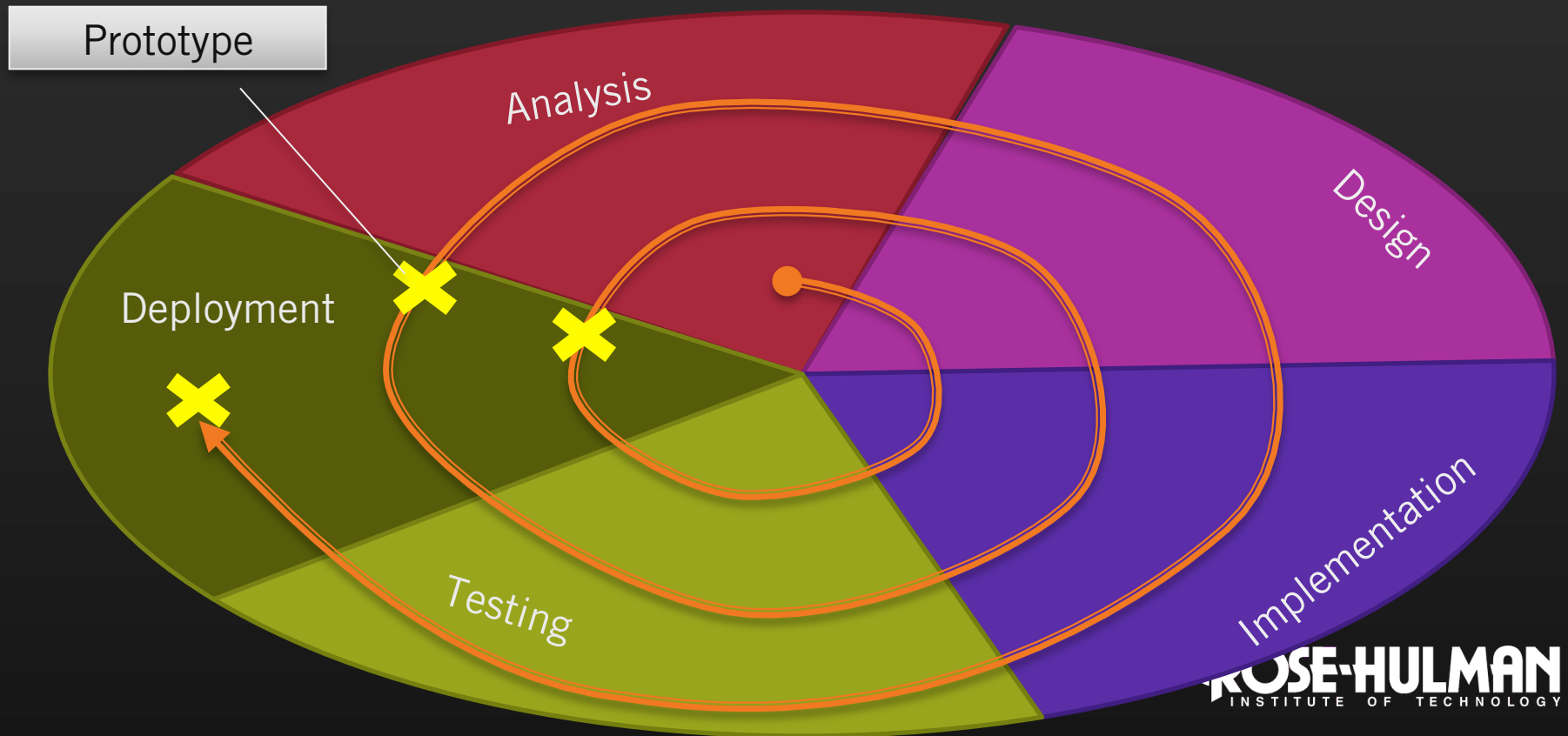
- Do each stage to completion
- Then do the next stage

Pipe dream model?

Spiral Model

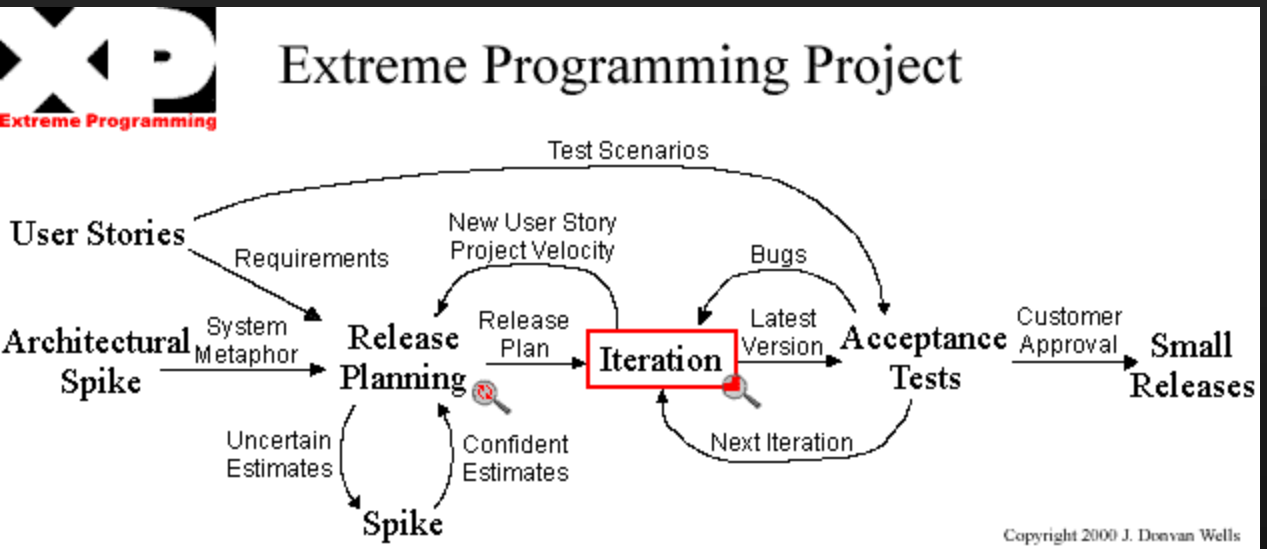
- Schedule overruns
- Scope creep

- Repeat phases in a cycle
- Produce a prototype at end of each cycle
- Get early feedback, incorporate changes



Extreme Programming—XP

- Like the spiral model with **very** short cycles
- Pioneered by Kent Beck
- One of several "agile" methodologies, focused on building high quality software quickly
- Rather than focus on rigid process, XP espouses 12 key practices…



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The XP Practices

- Realistic planning
- **Small releases**
- Shared metaphors
- Simplicity
- **Testing**
- **Refactoring**
- **Pair programming**
- Collective ownership
- **Continuous integration**
- 40-hour week
- On-site customer
- **Coding standards**

When you see opportunity to make code better, do it

Use descriptive names, Control-Shift-F, etc

These go to 11

Break

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Schedule Generator Project

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Team formation

- Your project teams are created.
- Gather with your teammates
- Please read your Schedule Generator project specifications
  - Brainstorm design ideas
  - Start working on your CRC cards
  - Pay close attention to the cycle due dates
  - I have set up your repository
  - Put design documents in Planning folder.