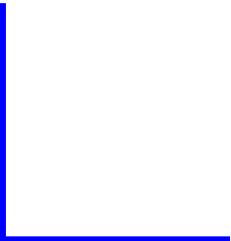# Software Engineering Lecture 4/5 Intro to Processes

Gregory S. DeLozier, Ph.D.
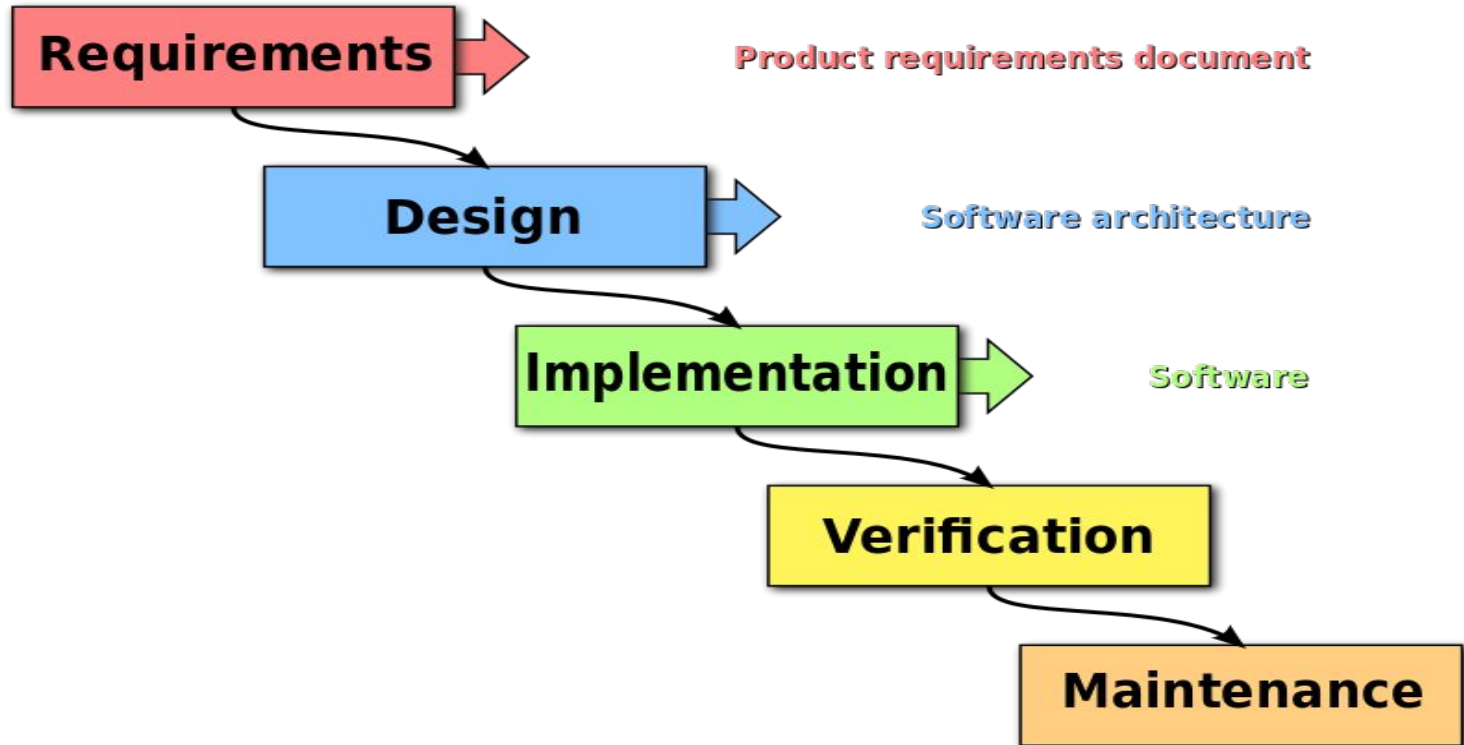Kent State University
Jan 25, 2017

Processes

"In software engineering, a **software development methodology** is a splitting of software development work into distinct phases (or stages) containing activities with the intent of better planning and management." -wikipedia
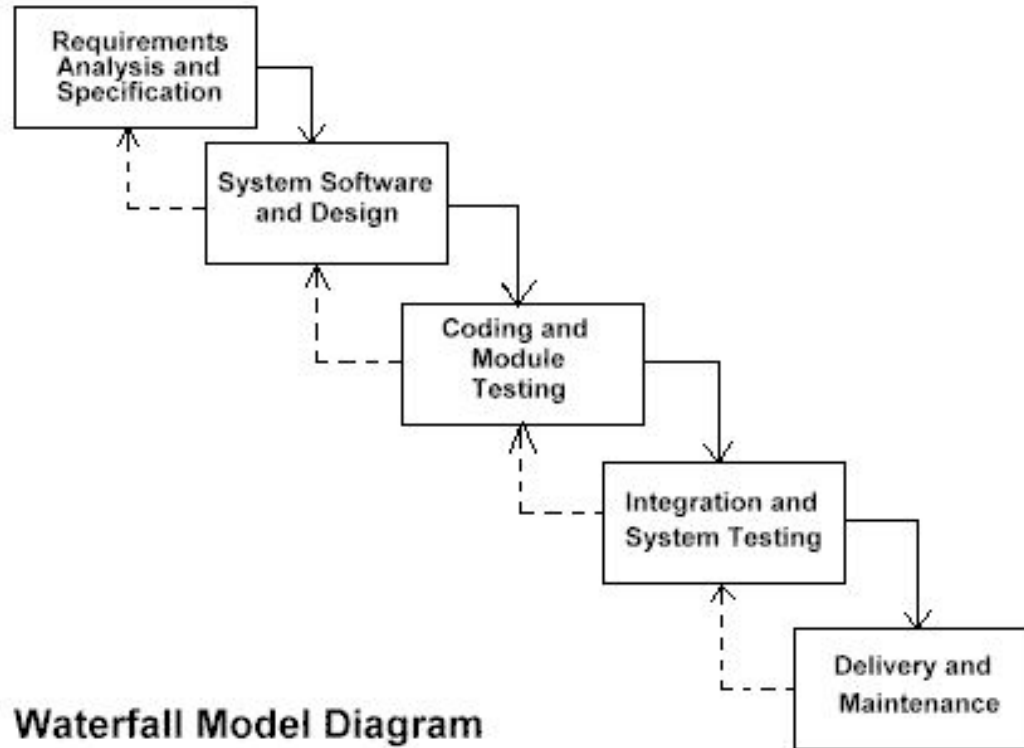
Waterfall

- Divide process into sequential phases
- Classical approach to manufacturing
- Get one stage done completely before moving on
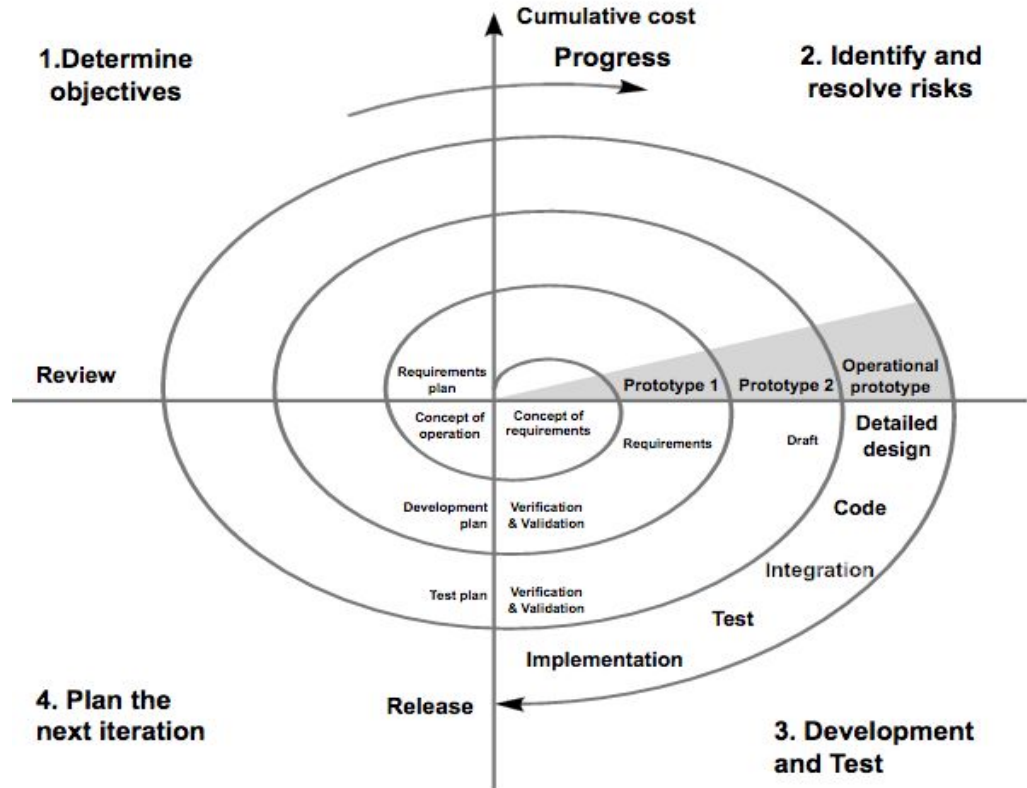
Waterfall

Waterfall with Loops

Waterfall Model Diagram

Spiral Models...

- Start with a prototype
- Move through learning, design, implementation, test.
- Each iteration gets more formal

Spiral Models...

Spiral Models...

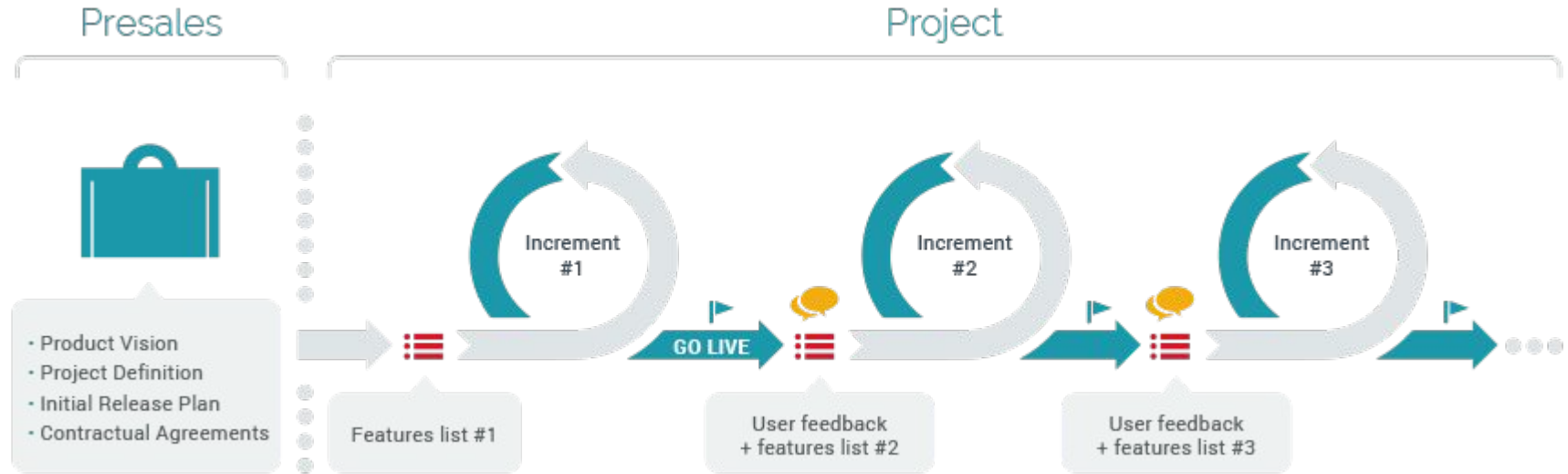- Moves from useless prototype to useful product...

Agile Processes

- Move from useful state to useful state
- Think about that
    - What is useful about 10% of a car?
    - Can you make 10% of an airplane? Of a house?
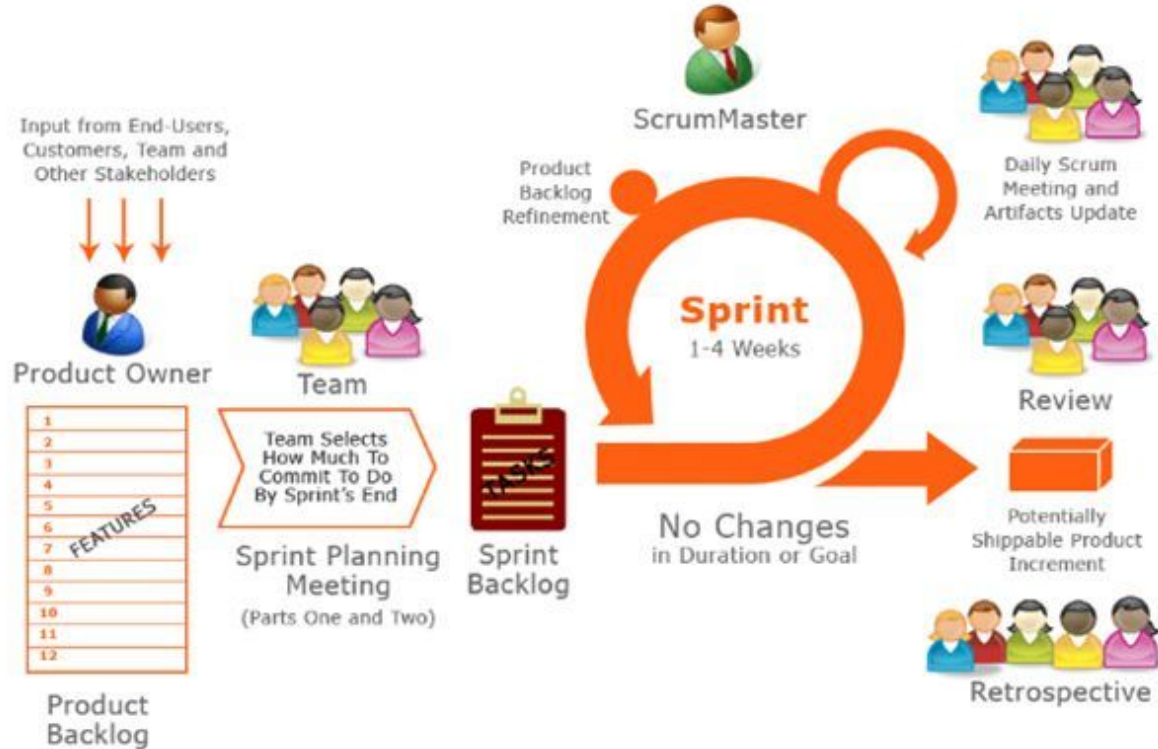   - Software is unusual this way?

Agile Processes

- Build a simple product to completion
- Decide what enhancements to make
- Build the next simple product to completion
- Decide what enhancements to make
- Build the next...

- Eventually, there are no more enhancements worth doing

Agile Processes

Scrum As Agile

Scrum Roles

- Product Owner
    - represents customer interests
    - maintains the backlog

- Development Team
    - Creates the products in the backlog as PSI

- Scrum Master
    - Removes impediments
    - Facilitates delivery
    - Manages the ceremonies

Scrum Ceremonies

- Planning Meeting
    - Review backlog, plan sprint
- Daily Scrum (During Sprint)
    - What did I do yesterday?
    - What will I do today?
    - What impediments exist?
- Sprint Review
    - What did we do?
- Sprint Retrospective
    - How can we improve?

Scrum As Agile

Input from End-Users, Customers, Team and Other Stakeholders

Product Owner

Team

Product Backlog

1
2
3
4
5
6 FEATURES
7
8
9
10
11
12

Team Selects How Much To Commit To Do By Sprint's End

Sprint Planning Meeting
(Parts One and Two)

Sprint Backlog

Product Backlog Refinement

ScrumMaster

Sprint
1-4 Weeks

No Changes
in Duration or Goal

Daily Scrum Meeting and Artifacts Update

Review

Potentially Shippable Product Increment

Retrospective

Planning Exercise

1. Create a product backlog for web todo list
   - Add a todo item
   - List the todo items
   - etc.

2. Prioritize the items in the backlog

3. "Task out" a one-week sprint
   - How long will each thing take?
   - How many resources do you have

4. Turn in your team's sprint plan and other artifacts

Reading

- https://en.wikipedia.org/wiki/Software_development_process

- https://en.wikipedia.org/wiki/Scrum_(software_development)