Activities, Process, and Models

OO Development Overview

- Requirements Capture
  - Requirements Models
  - Requirements Doc. Use Cases/Stories Domain Objects
- Analysis
  - Analysis Models
  - Objects -structure -scenario -behavior
- Design
  - Design Models
  - Objects -structure -scenario -behavior
- Implement
  - Implementation Models
- Testing
  - Test Models
  - Code
  - Test Plan, Test Cases Test Drivers & Results
A Certification Iteration

Phase 1:
Creation of models, test models, and code (LHS is top-down)

Phase 2:
Execution of test cases (RHS is bottom up)

Waterfall Development
Activities carried out one after the other as steps

“The Big Bang approach to software development”
**Aiming for Traceability**

- Traceability is required to achieve convergence:
  - We must document the *continuity* that must exist between the work-products of different activities.
    - At least required for *regression testing*.
    - In turn, continuity enables completeness and consistency checks.

- Within a particular activity, the work-products must be *consistent*:
  - e.g., the structural, scenario and behavior models must be consistent
  - For example, if an interaction diagram shows an object receiving a message, then the statechart of this object must reflect this possibility

- Work-products must also be *complete* with respect to the current requirements.
The Agile Manifesto—a statement of values

<table>
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<th>Individuals and interactions</th>
<th>over</th>
<th>Process and tools</th>
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<td>Working software</td>
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<td>Comprehensive documentation</td>
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<td>Customer Collaboration</td>
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<td>Responsibilities of parties</td>
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Source: www.agilemanifesto.org

The Core of Agile Modeling

Some Core Principles
- Assume Simplicity
- Expect Incremental Change
- Enabling the Next Effort is Your Secondary Goal
- Model With a Purpose
- Use Multiple Models
- Maximize Stakeholder Investment
- **Value Quality first**
- Get Rapid Feedback
- **Software Is Your Primary Goal**

Some Core Practices
- Active Stakeholder Participation
- Apply the Right Artifact(s)
- **Collective Ownership**
- Create Several Models in Parallel
- Create Simple Content
- Depict Models Simply
- Display Models Publicly
- **Model in Small Increments**
- Model With Others
- Prove it With Code
- Use the Simplest Tools
Scrum

- Sprint goal
- Return
- Cancel
- Coupons
- Gift wrap
- Product backlog
- Sprint backlog
- 24 hours
- Sprint 2-4 weeks
- Potentially shippable product increment

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