Activities, Process, and Models

OO Development Overview

Requirements Models
Analysis Models
Design Models
Implementation Models
Test Models

Requirements Doc.
Use Cases/Stories
Domain Objects
Objects
-structure
-scenario
-behavior

Implementation Models
Test Plan, Test Cases
Test Drivers & Results

A Certification Iteration

Waterfall Development

Activities carried out one after the other as steps

“The Big Bang approach to software development”
The Spiral Model

Requirements Capture
Analysis
Design
Implement
Testing

Can have macro and micro iterations but needs to converge

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

- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation

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
- 2-4 weeks
- Potentially shippable product increment
- 24 hours