Rational Unified Process

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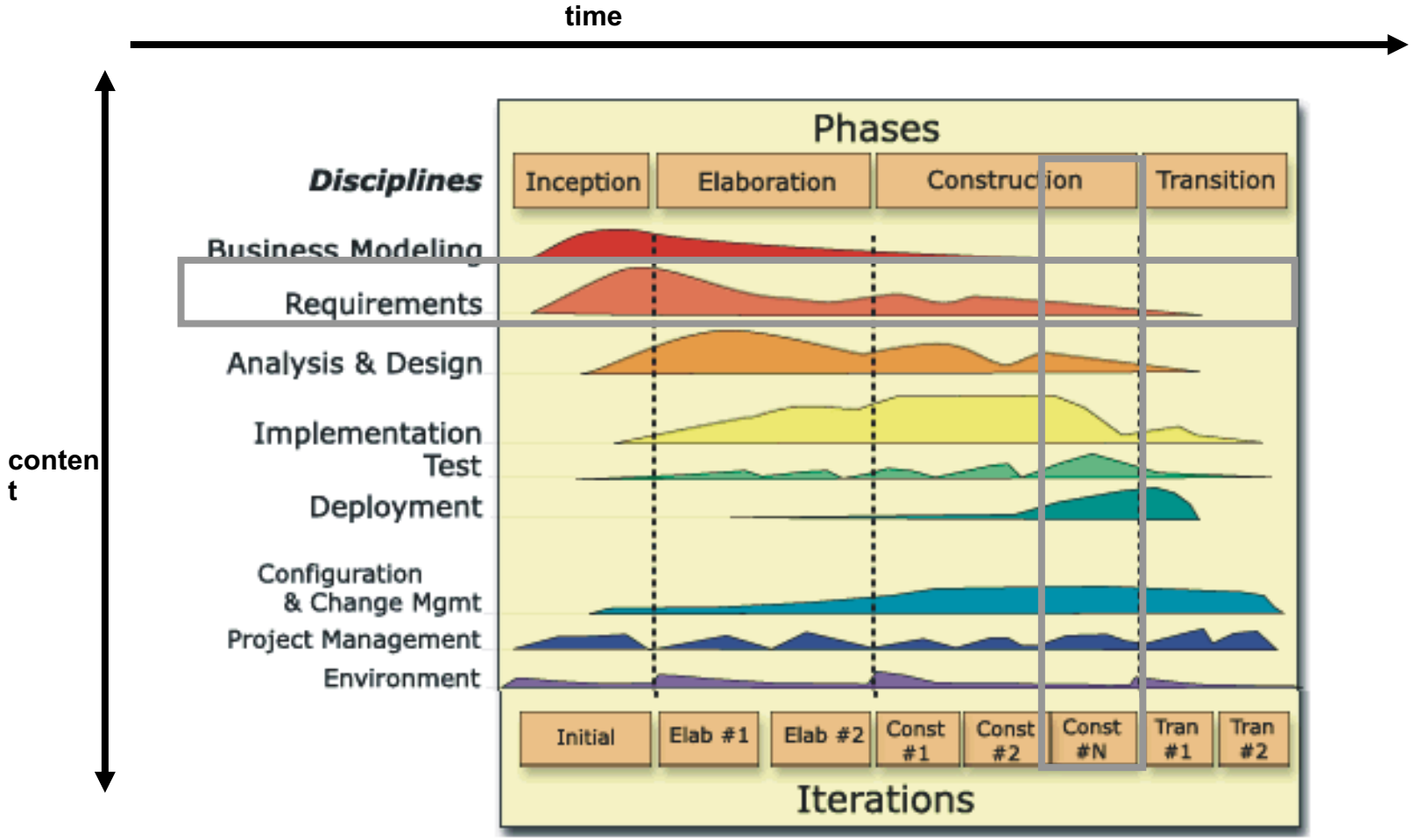
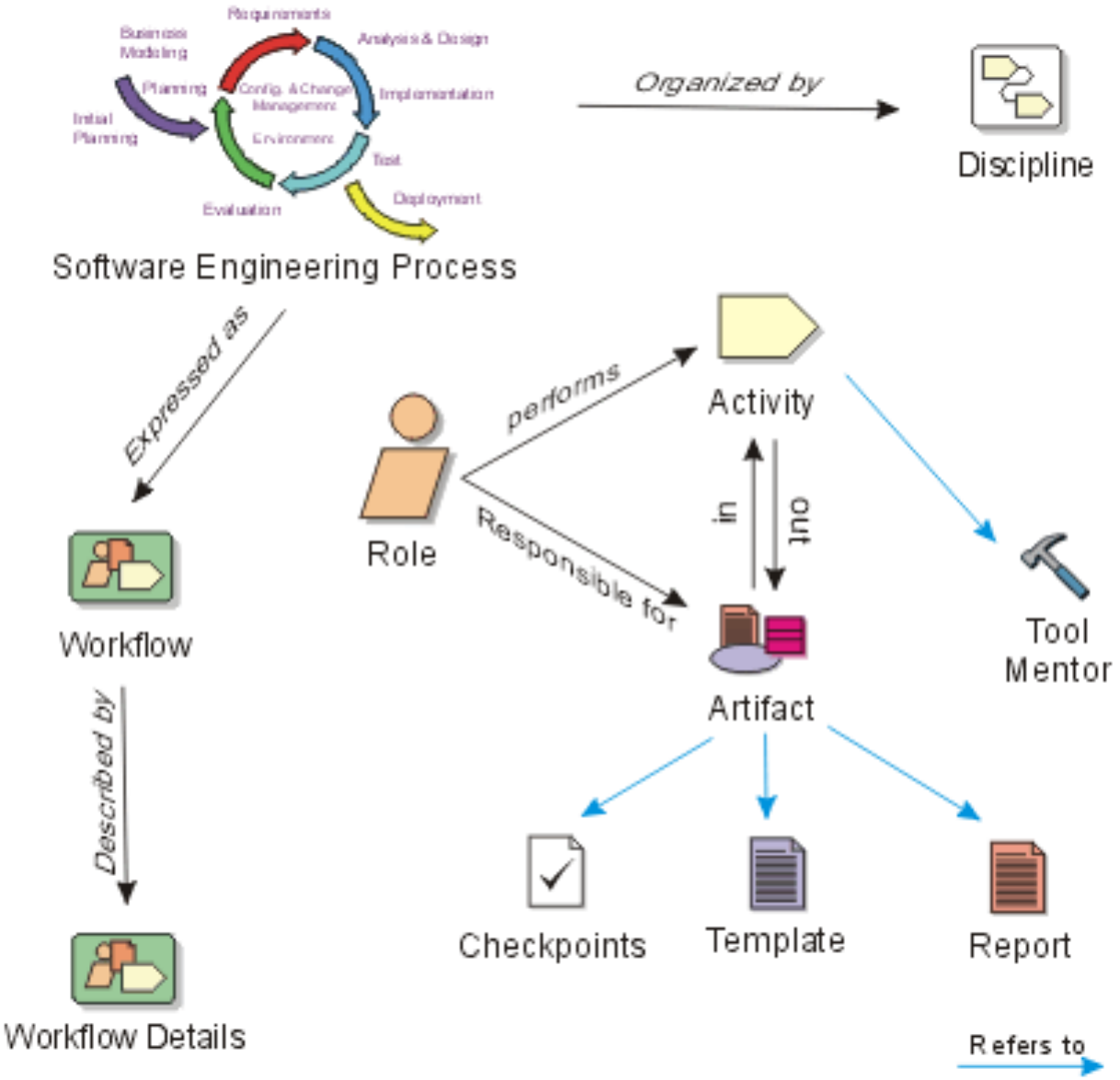
Key characteristics

- Iterative and incremental process
- Rational Unified Process was developed hand-in-hand with UML.
- Driven by use cases
  - The identification of use cases and typical usage scenarios is the activity that drives all development process, from requirements analysis to final system testing.
- Architecture-centric
  - Promotes the initial definition of a robust software architecture that helps the development parallelization, reuse and maintenance.

Iterations, phases, disciplines

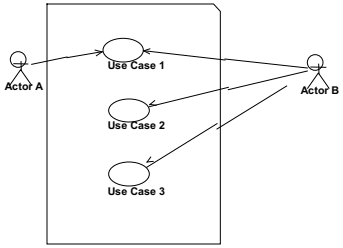


Roles, workflows, activities, artifacts

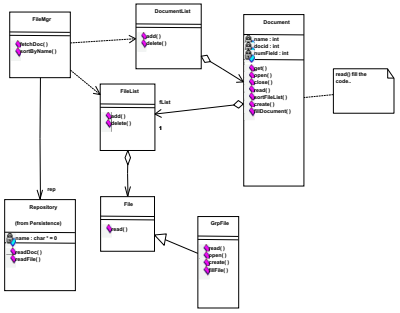


Visual Modeling Using UML Diagrams

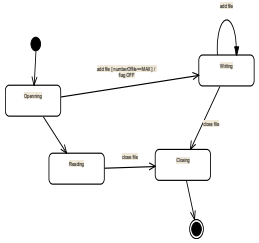
Use-Case Diagram



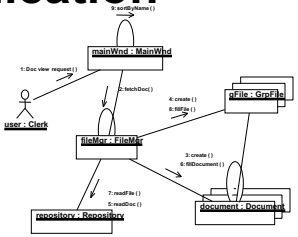
Class Diagram



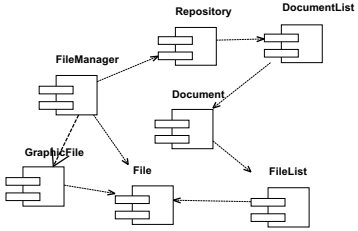
Statemachine Diagram



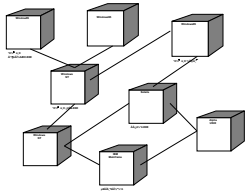
Communication Diagram



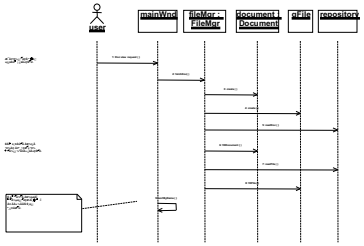
Component Diagram



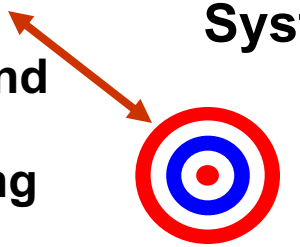
Deployment Diagram



Sequence Diagram



Forward and Reverse Engineering



Target System

Inception phase

- Establishing the project's software scope and boundary conditions, including an operational vision, acceptance criteria and what is intended to be in the product and what is not.
- Discriminating the critical use cases of the system, the primary scenarios of operation that will drive the major design tradeoffs.
- Exhibiting, and maybe demonstrating, at least one candidate architecture against some of the primary scenarios.
- Estimating the overall cost and schedule for the entire project (and more detailed estimates for the elaboration phase that will immediately follow).
- Estimating potential risks (the sources of unpredictability)
- Preparing the supporting environment for the project.

Elaboration phase

- Defining, validating and baselining the architecture as rapidly as practical.
- Refining the Vision, based on new information obtained during the phase, establishing a solid understanding of the most critical use cases that drive the architectural and planning decisions.
- Creating and baselining detailed iteration plans for the construction phase.
- Refining the development case and putting in place the development environment, including the process, tools and automation support required to support the construction team.
- Refining the architecture and selecting components. Potential components are evaluated and the make/buy/reuse decisions sufficiently understood to determine the construction phase cost and schedule with confidence. The selected architectural components are integrated and assessed against the primary scenarios.

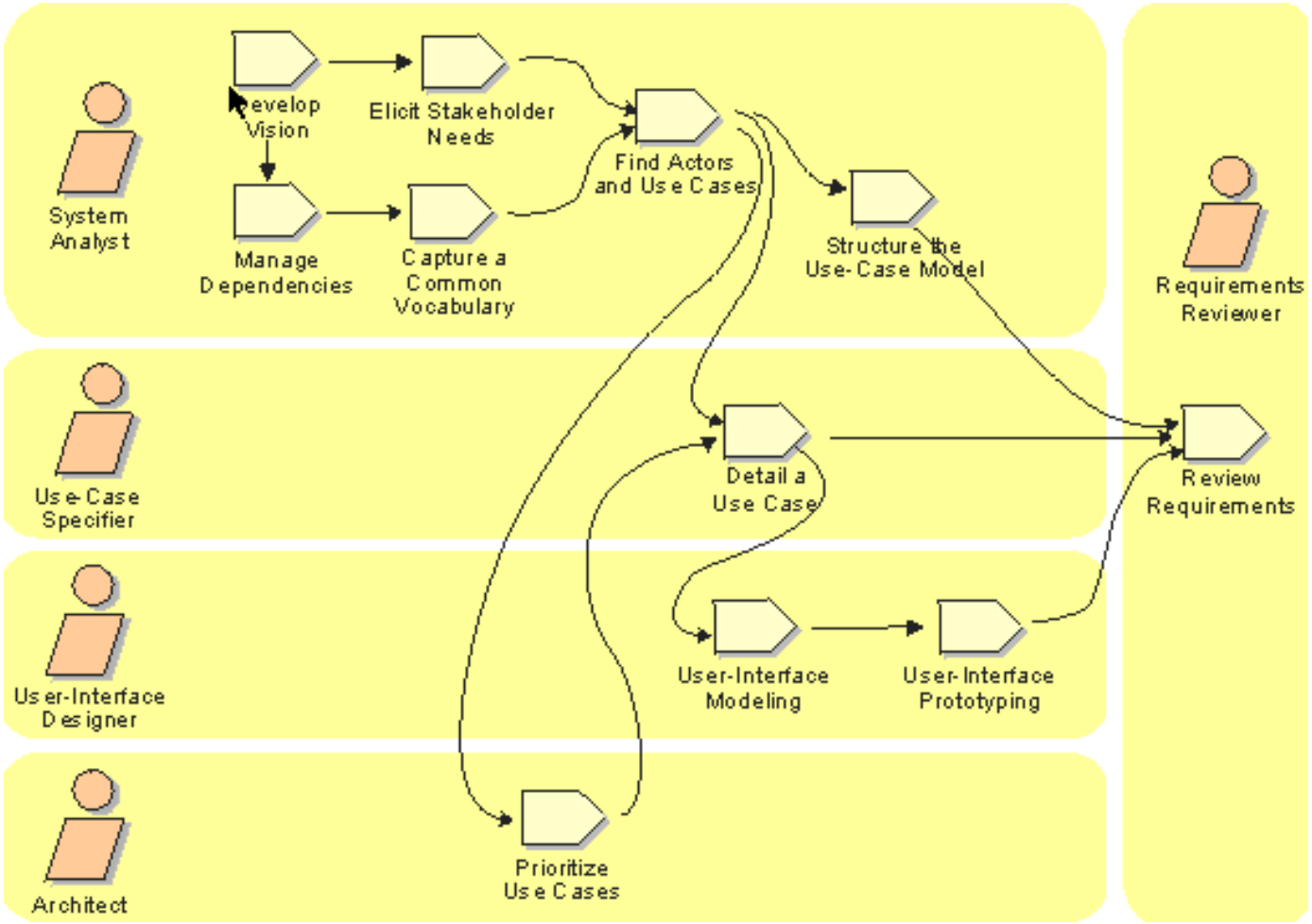
Construction phase

- Resource management, control and process optimization
- Complete component development and testing against the defined evaluation criteria
- Assessment of product releases against acceptance criteria for the vision.

Transition phase

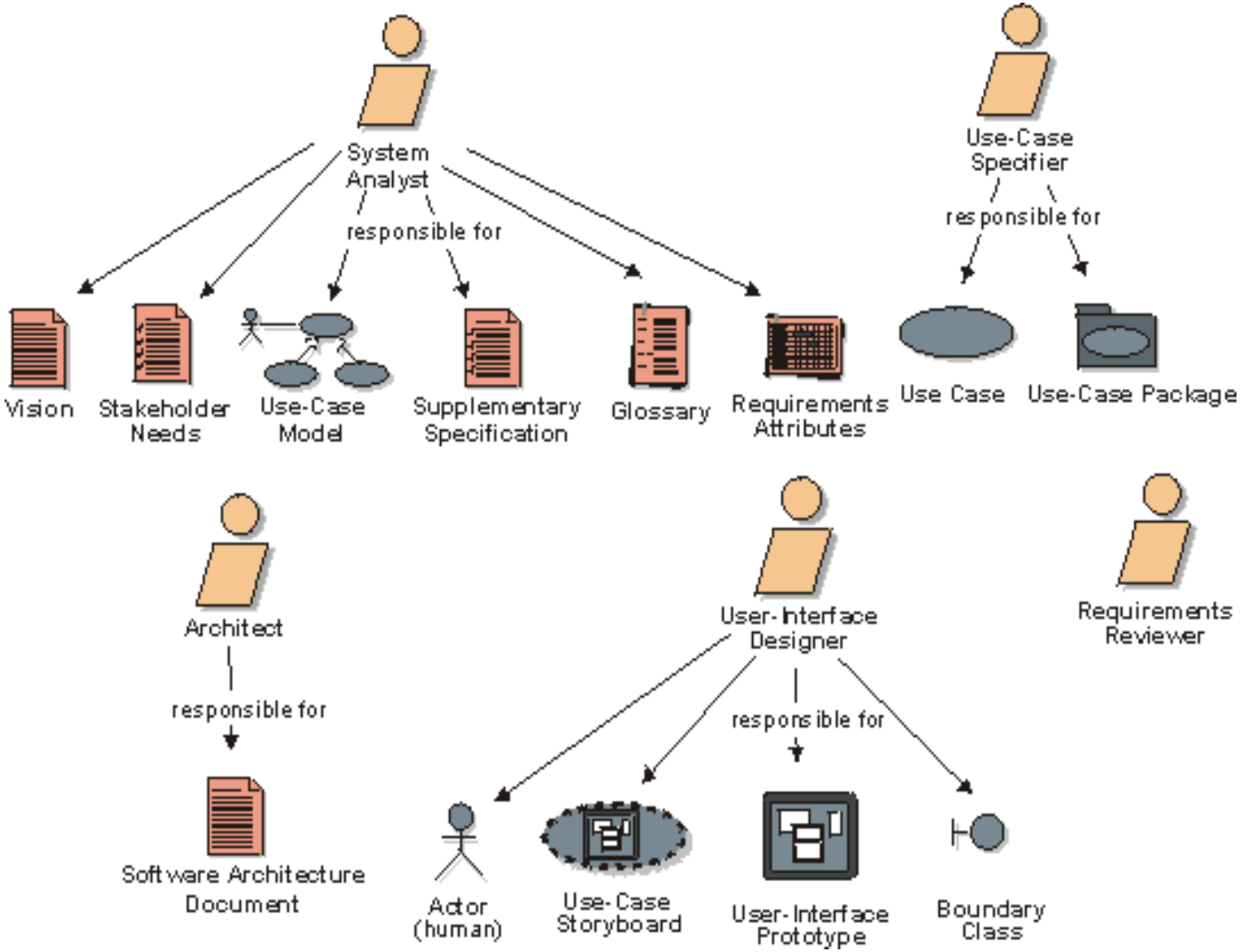
- Executing deployment plans.
- Finalizing end-user support material.
- Testing the deliverable product at the development site.
- Creating a product release.
- Getting user feedback.
- Fine-tuning the product based on feedback.
- Making the product available to end users.

Requirements



from **Rational Unified Process**

Requirements



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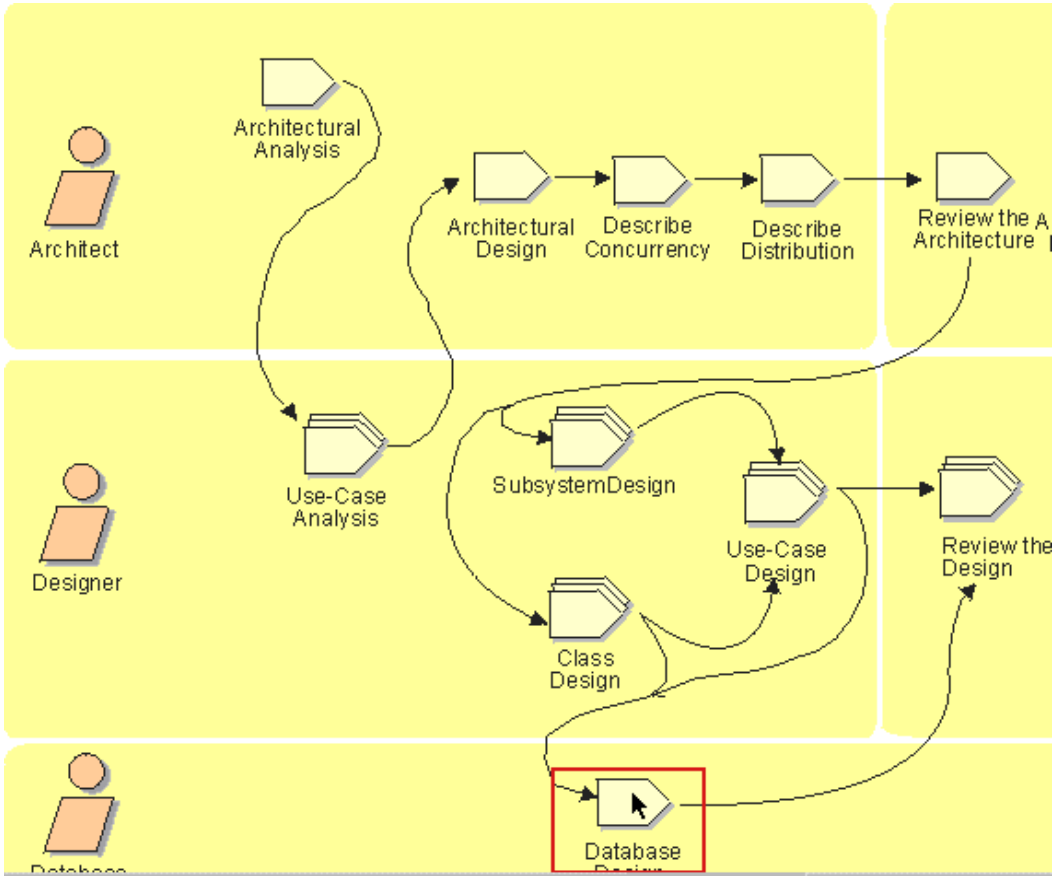
Design



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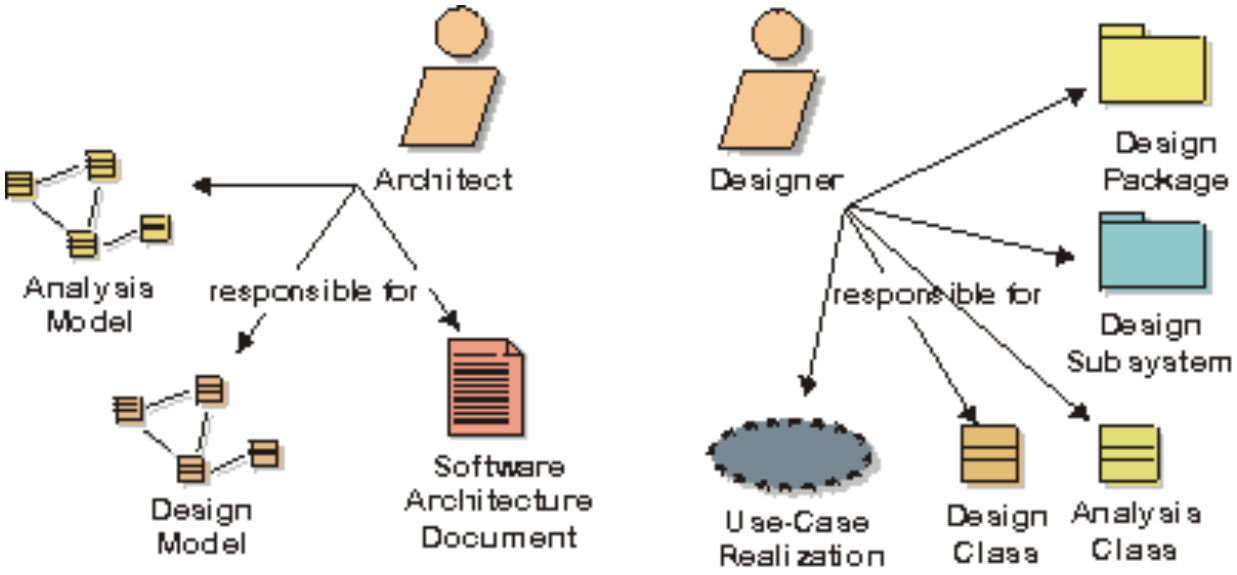
Design



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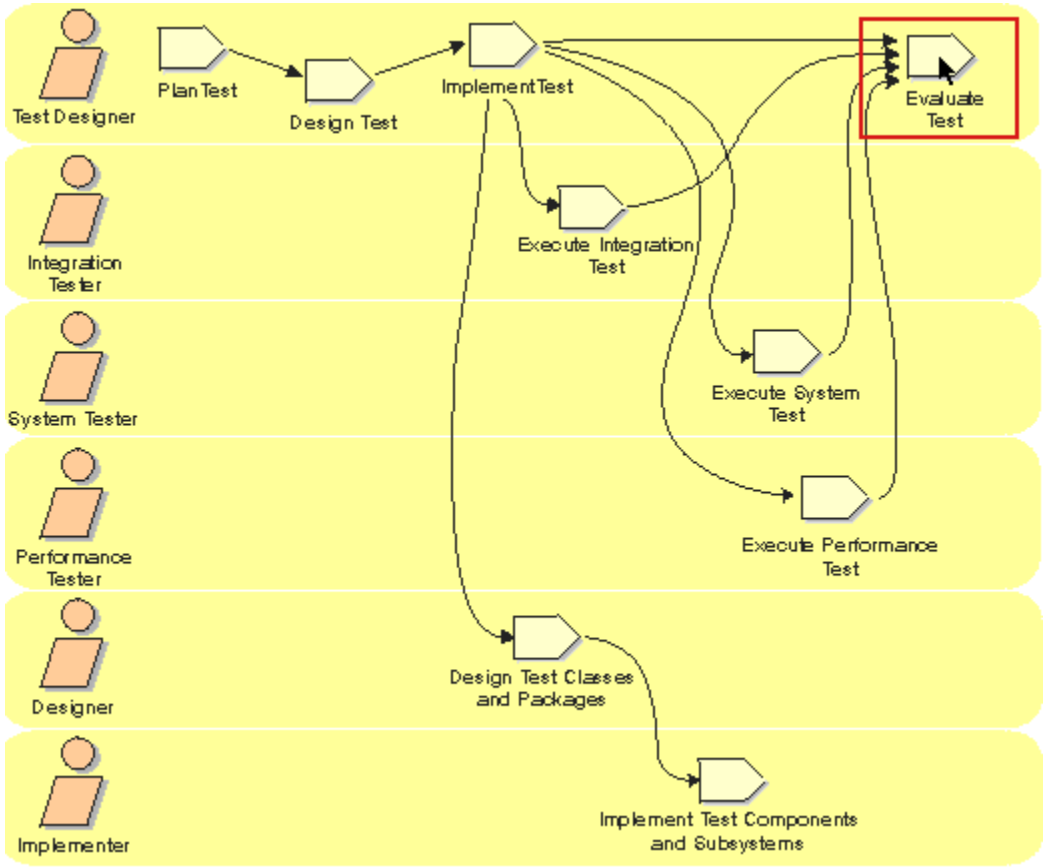
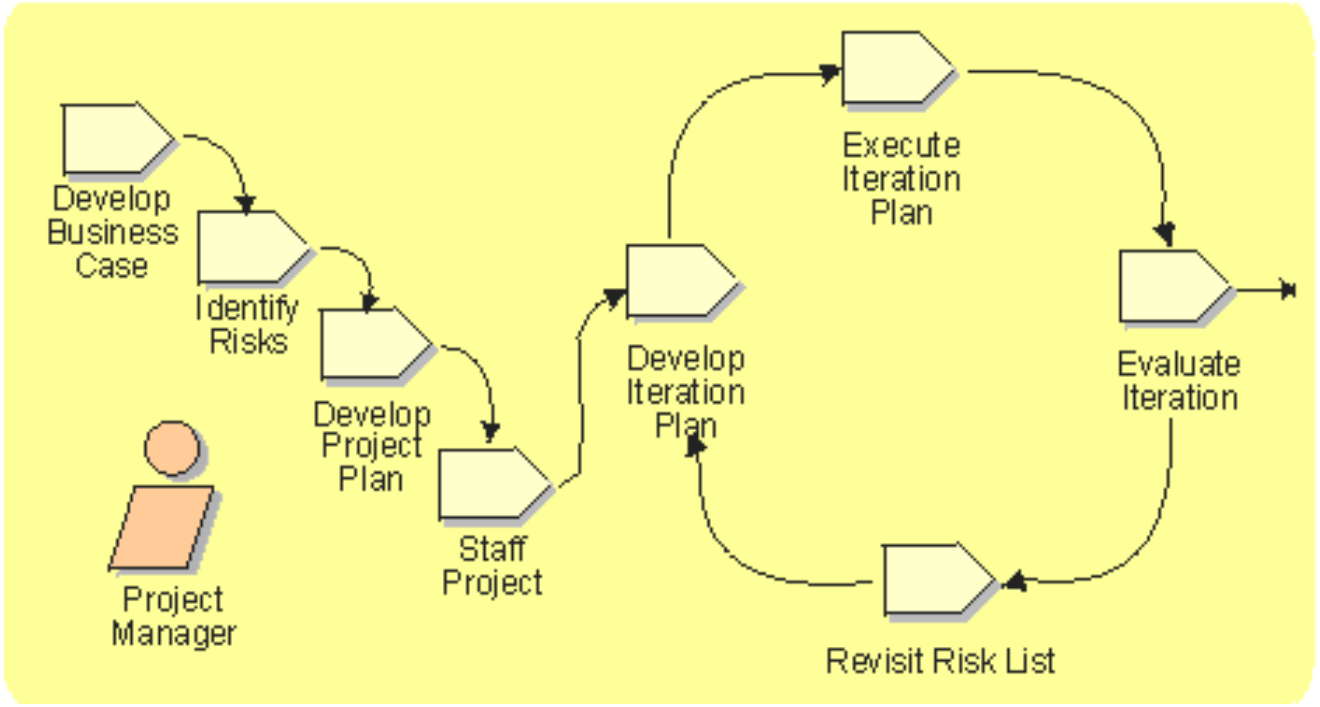
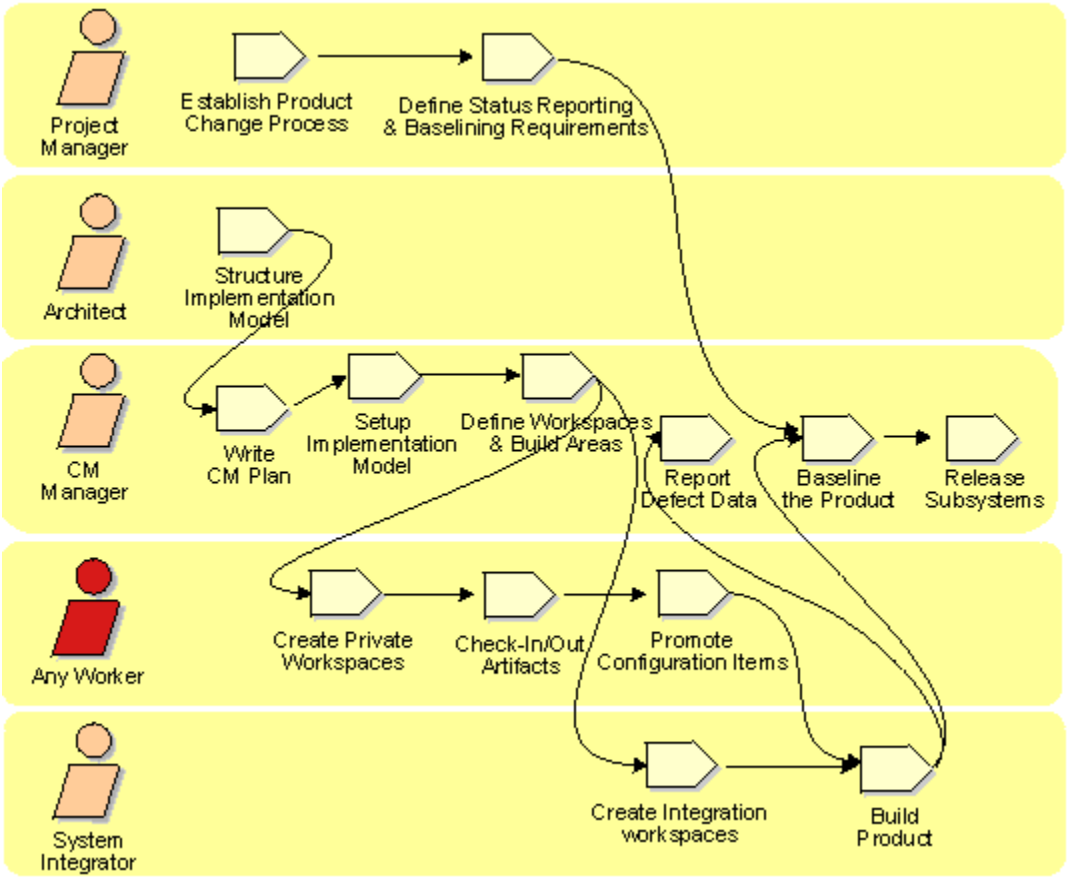
Test


Test Designer
Plan Test
Design Test
Implement Test
Evaluate Test
Integration Tester
Execute Integration Test
System Tester
Execute System Test
Performance Tester
Execute Performance Test
Designer
Design Test Classes and Packages
Implementer
Implement Test Components and Subsystems

Project management



Configuration & change management



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  Ivar Jacobson, Grady Booch, James Rumbaugh
  Addison-Wesley, 1999

- www.rational.com

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