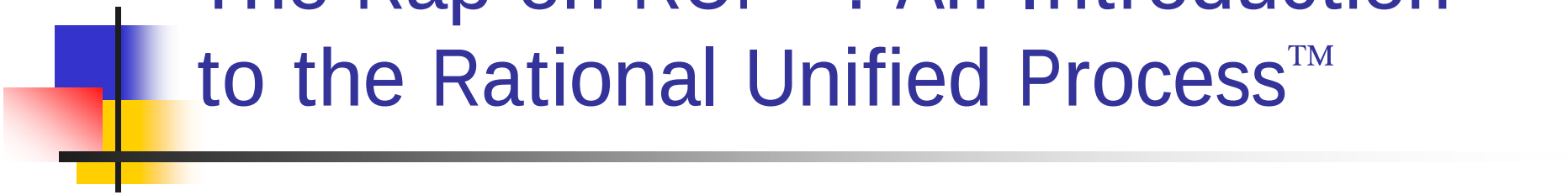

The Rap on RUP™ : An Introduction to the Rational Unified Process™

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Survey

- Does your organization have a well defined methodology/process?
- Does your organization use OOA/OOD?
- Does your organization use UML?

Agenda

- What is RUP?
- RUP Fundamentals
- Phases
- Product “features”
- Caveats
- Summary
- Questions

Process/Methodology Product Presentation

- Minimal UML bashing
- No rhyming
- No comparison with other methodologies
- RUP appears to be in flux since Rational's acquisition by IBM

Why RUP™ at SPIN?

- *The (RUP™) Knowledge base allows development teams to gain the full benefits of the industry standard UML*
- RUP™ covers all UML models
- RUP™ is hot; the latest silver bullet...

What is RUP™?

- A “software engineering process” (methodology)
- A knowledge base “process product”
  - CD to create web site
- UML model focused, not “paper documents” (but...)

What is RUP™?

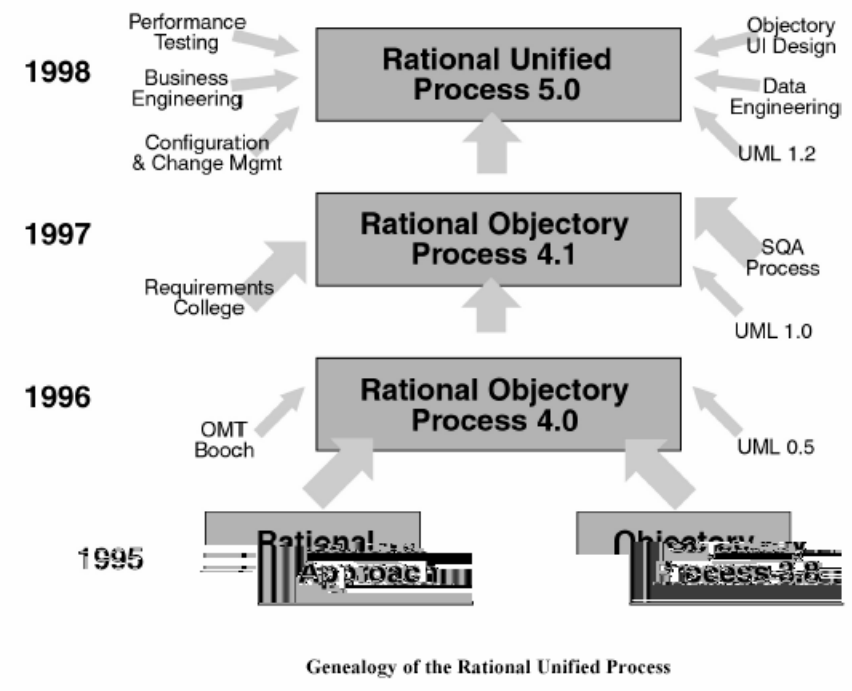
- Configurable process/product
  - Recognizes and supports variety of different project types
  - Support for tailoring and configuring project web sites
- Project oriented

3 Flavors of RUP

- Generic - not dependant on specific technology
- Microsoft Web Solution Technology
  - Additional templates, guidelines etc
- IBM Websphere™ Technology

History

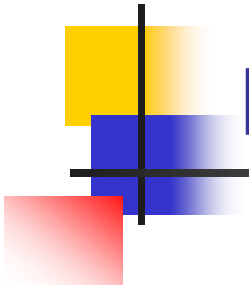
- Methodology by Merger & Acquisition
- Objectory Process created in ‘80s
- Rational Approach created in ‘80s
- Acquisition of RequisitePro
- IBM acquires Rational



Genealogy of the Rational Unified Process

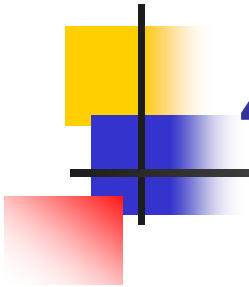
Why Should You Care About RUP™?

- Your organization is at SEI/CMM Level 1 "Ad Hoc"
  - Provides an excellent path to CMM Levels 2 and 3
- You need to add OOA/OOD to your current process/methodology
- Management wants to know when you're going to use the latest silver bullet



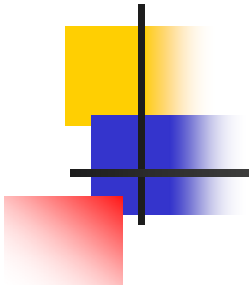
RUP™ Fundamentals

- RUP is object and process oriented
  - Data takes a back seat
- Architecture is “key to success”
  - Emphasizes need for prototyping of core functionality, not just UI
- Iterative development
- Use Cases are (were?) primary requirements specification technique



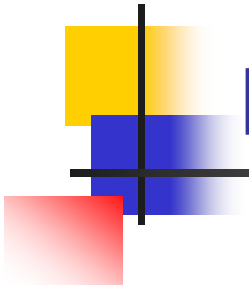
4 Phases

- Inception
- Elaboration
- Construction
- Transition



Inception

- Establish business case and business models
- Establishes initial “vision”, high level requirements via “business” use cases
- Create stakeholder “buy in”
- Evaluate risks and return

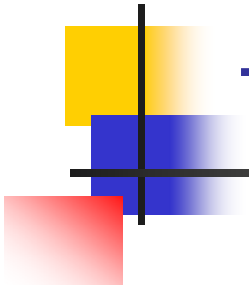


Elaboration

- Detailed requirements
- Architecture and prototype
- Design

Construction

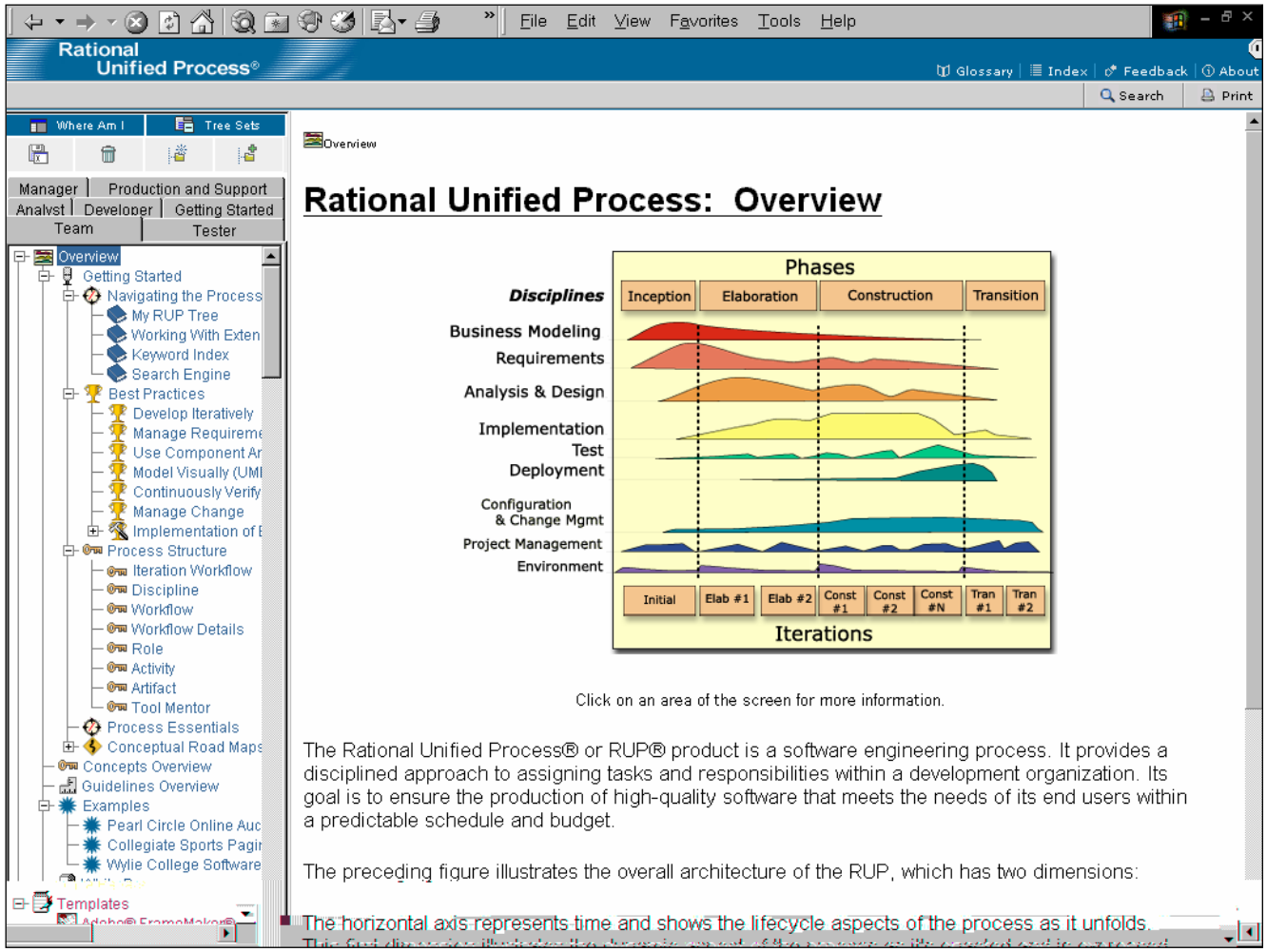
- Coding and testing

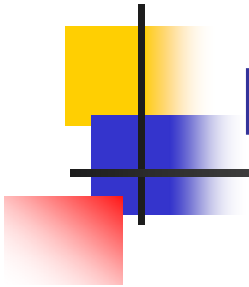


Transition

- Putting the product in the user's hands
- Highly variable, depending on product
  - Data migration
  - Training
  - Parallel Operations
  - Beta testing
  - Etc.

Overview of RUP™ (Organization)





Best Practices

- Develop software iteratively
- Manage requirements
- Use component-based architectures
- Model visually
- Continuously verify quality
- Control changes

Key Concepts of RUP™

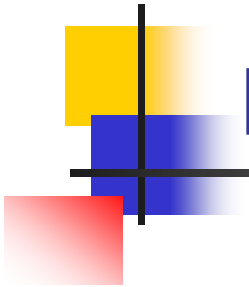
- Organized by *discipline*
- *Workflow* - model of process for a discipline
- *Workflow Details* - 2nd level detail of workflow, detailing activities, roles and artifacts
- *Role* - who performs an activity
- *Activity* - defined piece of work that results in an artifact

More Key Concepts

- *Artifact* - a deliverable, may be document, model, code, etc
  - Templates and examples for many artifacts
- *Tool Mentor* - guide on using Rational Tools for RUP™

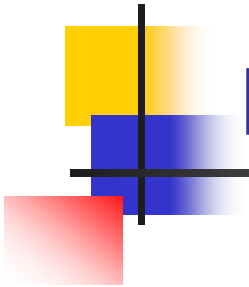
Analyst Roles

- Business-Model Reviewer
- Business Designer
- Business-Process Analyst
- System Analyst
- Requirements Specifier
- Test Analyst
- User-Interface Designer



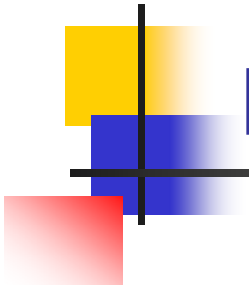
Developer Roles

- Capsule Designer
- Code Reviewer
- Database Designer
- Implementer
- Integrator



More Roles

- Testers
- Managers
- Process Engineer
- Project Manager
- Change Control Manager
- Configuration Manager
- Deployment Manager
- Project Reviewer
- Test Manager



Disciplines

- A collection of related activities that are related to a major 'area of concern' within the overall project
- Disciplines span phases

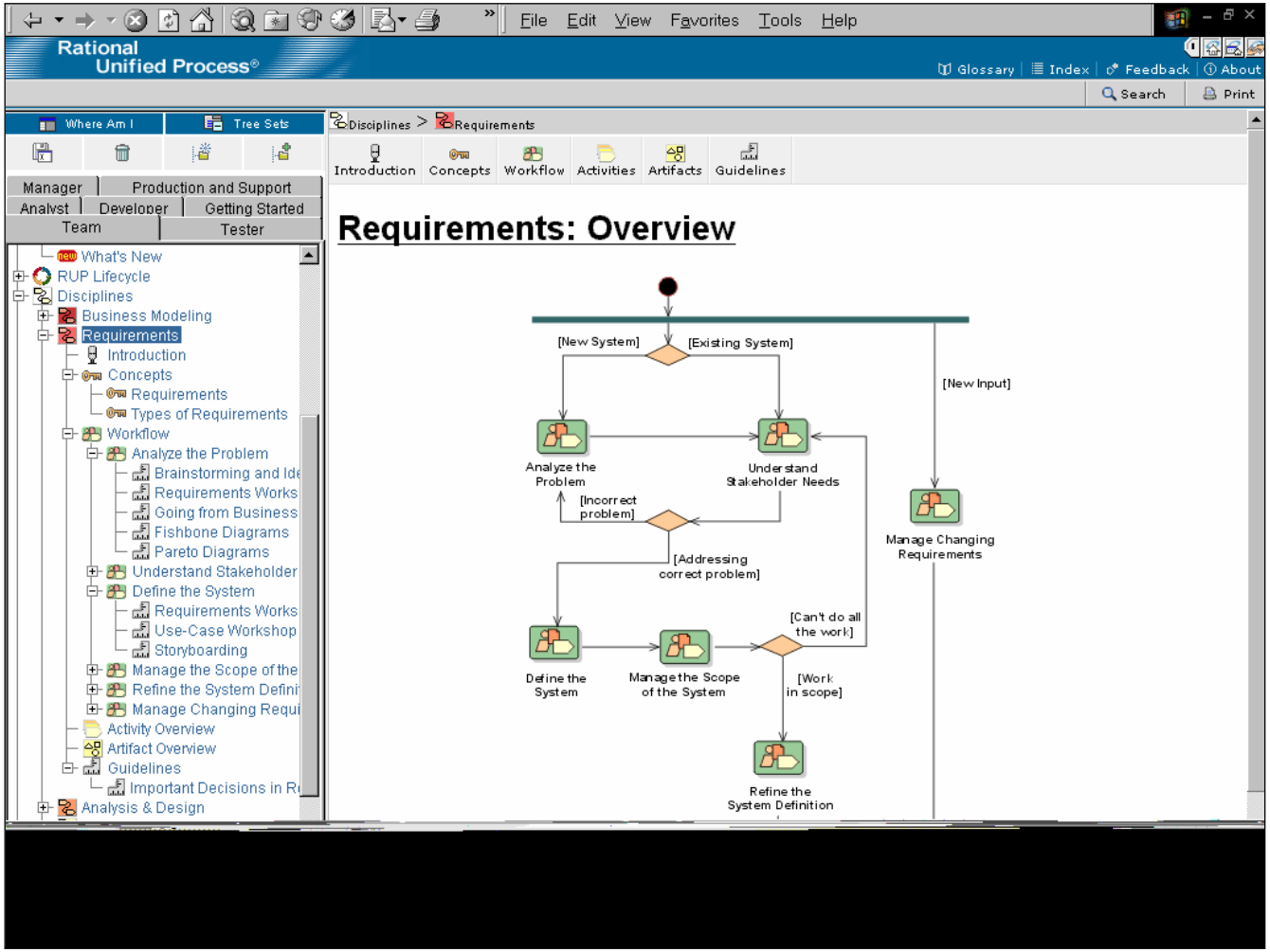
RUP™'s Disciplines

- Business Modeling
- Requirements
- Analysis and Design (Analysis <> Requirements, not performed by "analyst" role)
- Implementation
- Test
- Deployment
- Configuration and Change Management
- Project Management
- Environment

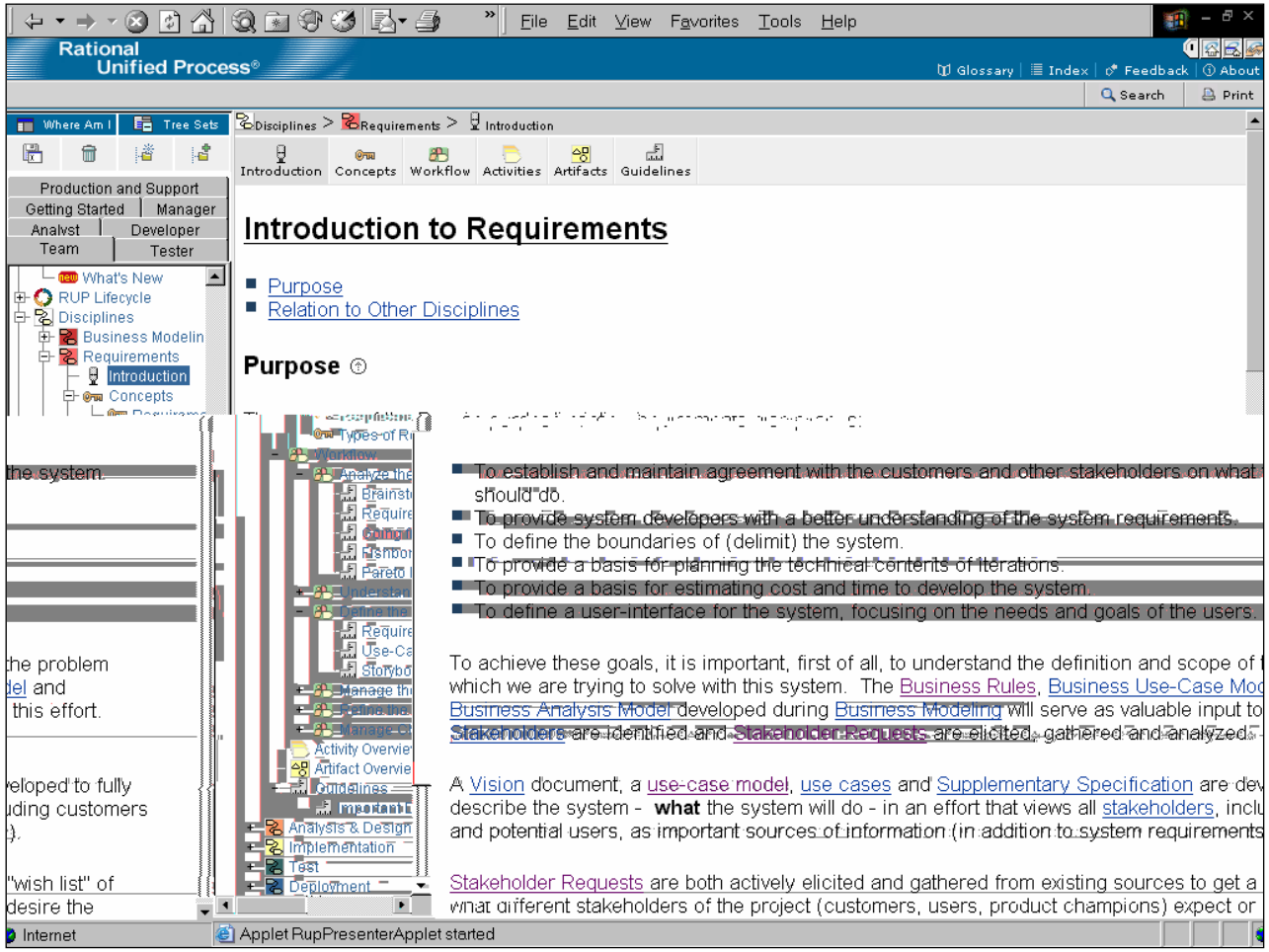
Each Discipline is Composed of:

- Overview
- Introduction
- Concepts
- Workflow - the high level activity diagram (process flow)
- Workflow detail - second level process
- Activities - actions performed by roles
- Artifacts - deliverables
- Guidelines - tutorials, checklists, etc

Discipline Overview

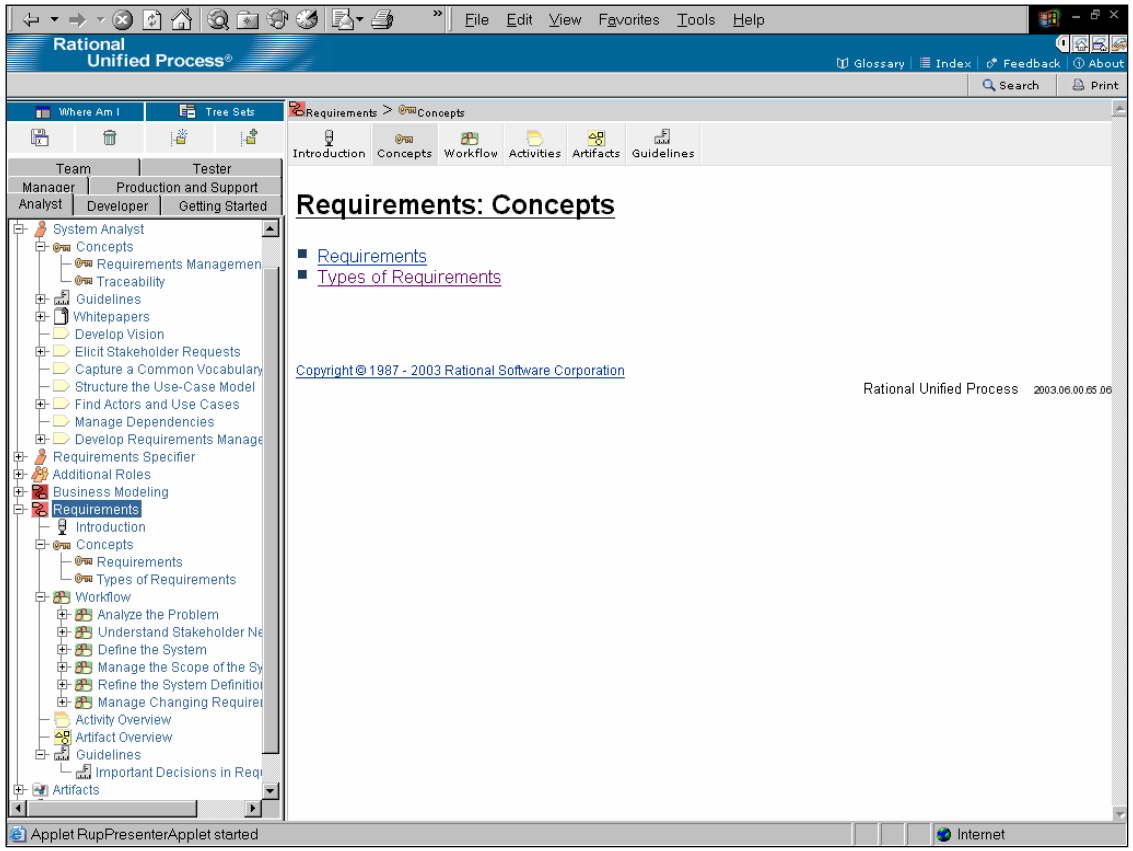


Introduction

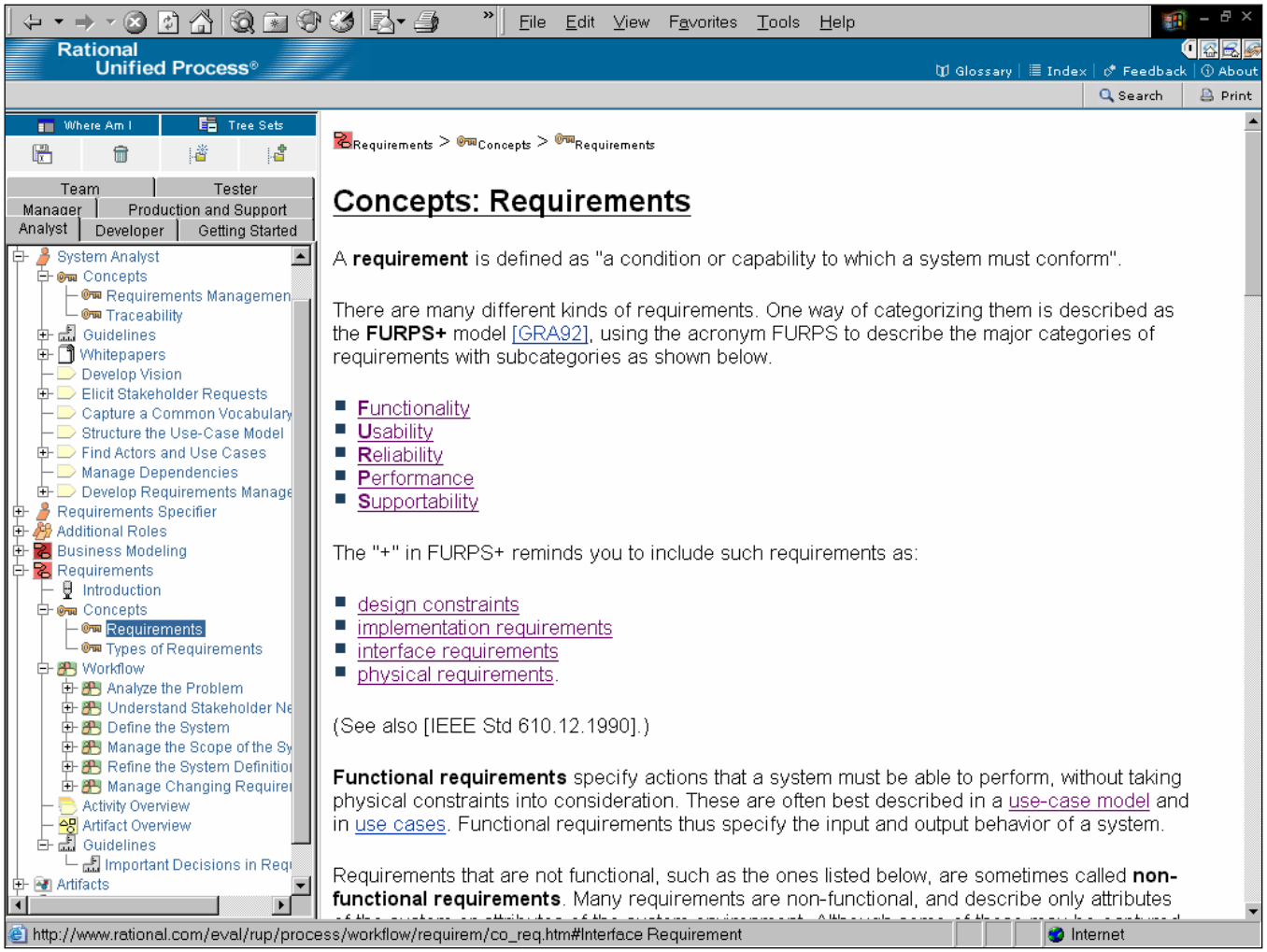


Concepts

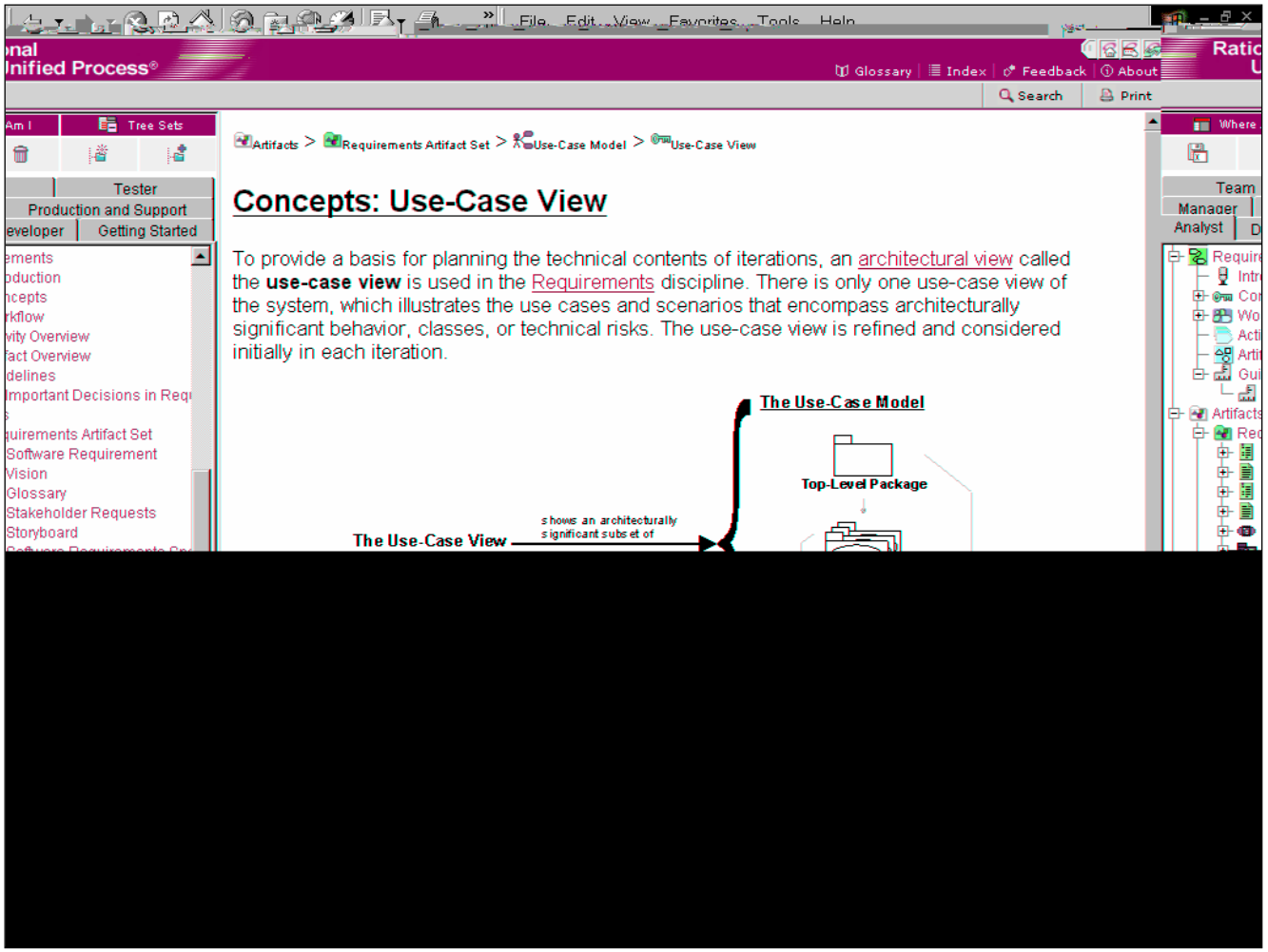
- Fundamentals of discipline/role



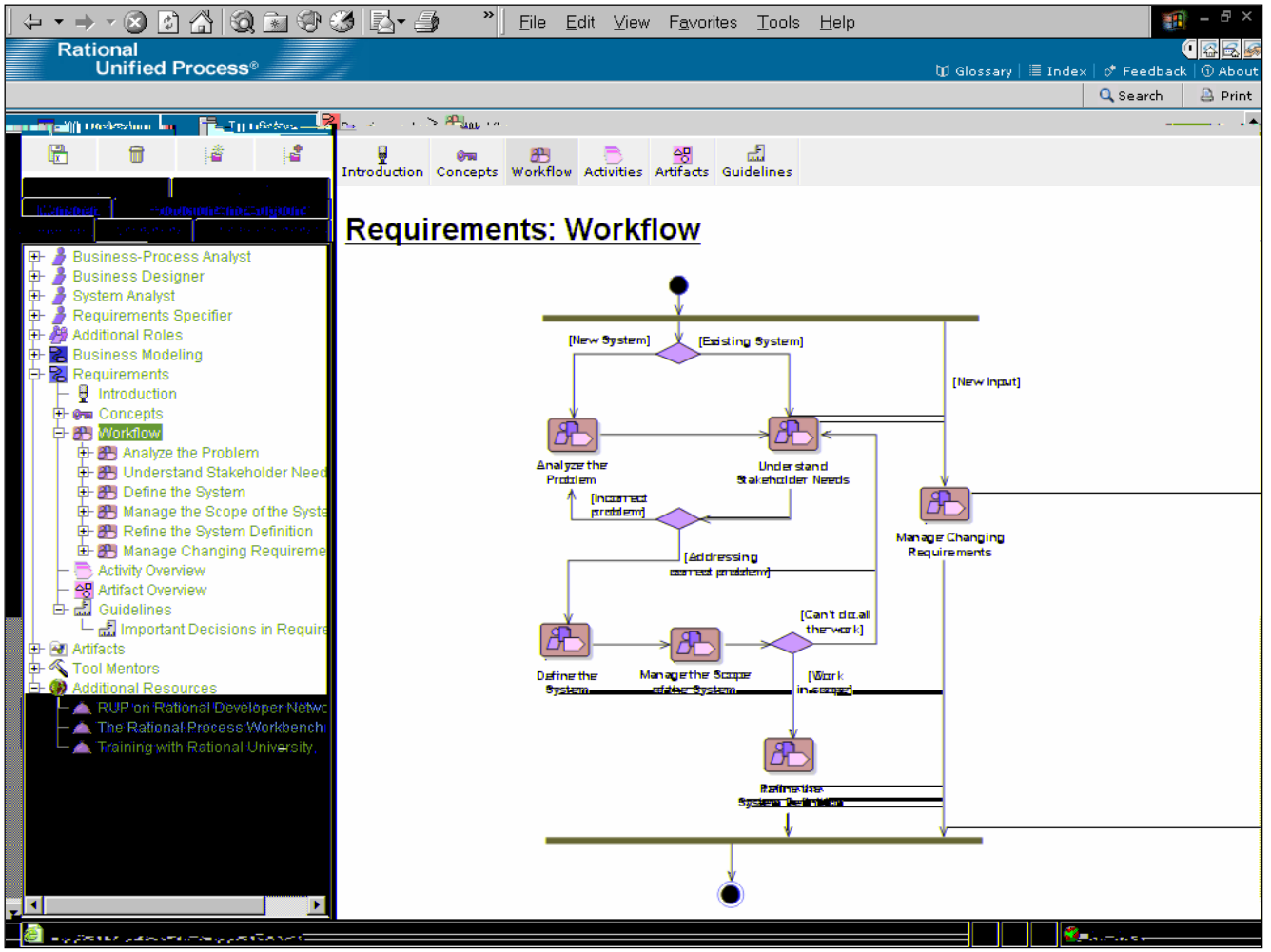
Concept Example



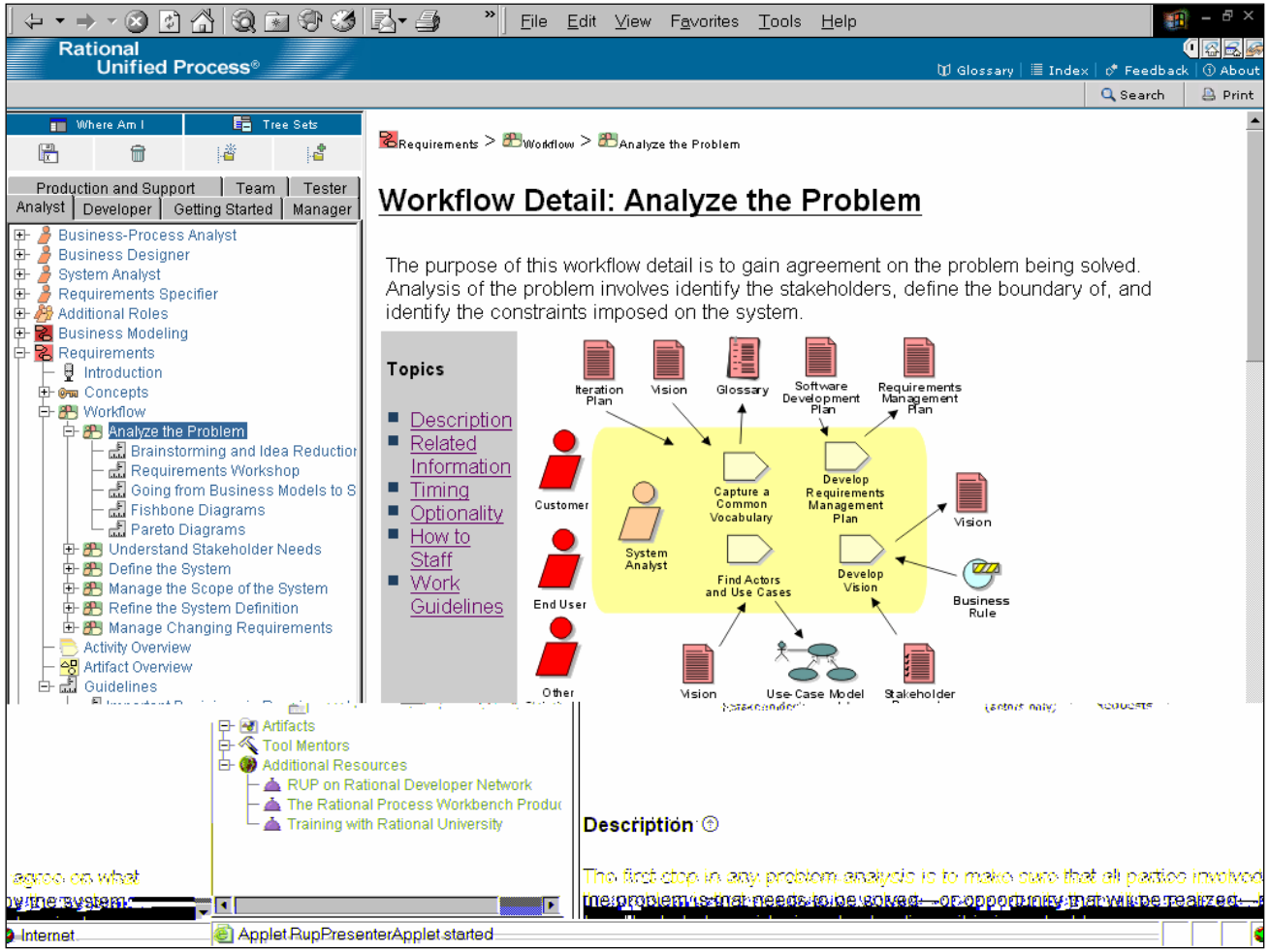
Everything is Use-Case Driven



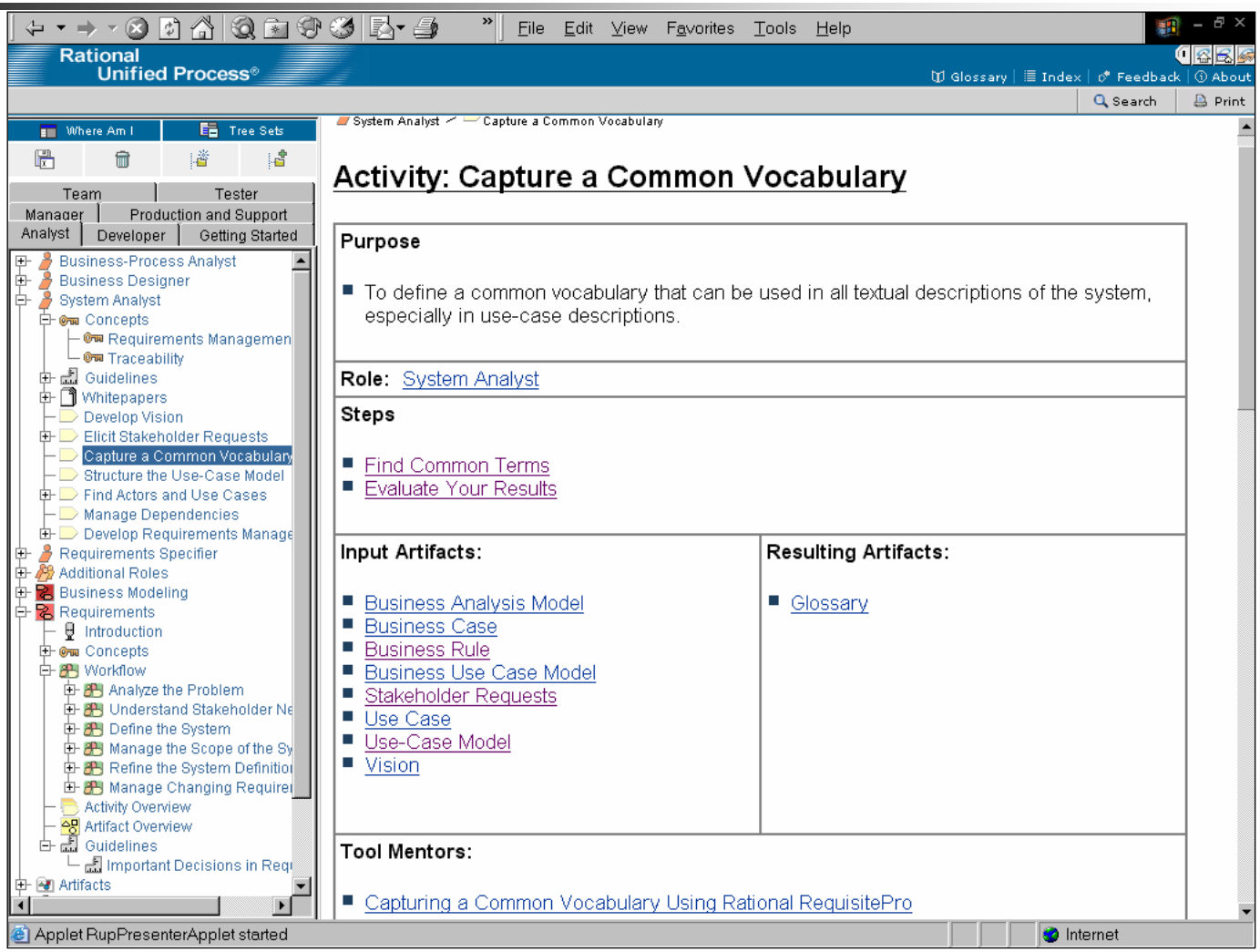
Workflow


File Edit View Favorites Tools Help
Rational Unified Process®
Glossary Index Feedback About
Search Print
Introduction Concepts Workflow Activities Artifacts Guidelines
Requirements: Workflow
Business-Process Analyst
Business Designer
System Analyst
Requirements Specifier
Additional Roles
Business Modeling
Requirements
Introduction
Concepts
Workflow
Analyze the Problem
Understand Stakeholder Need
Define the System
Manage the Scope of the Syste
Refine the System Definition
Manage Changing Requireme
Activity Overview
Artifact Overview
Guidelines
Important Decisions in Require
Artifacts
Tool Mentors
Additional Resources
RUP on Rational Developer Netwc
The Rational Process Workbench
Training with Rational University
[New System]
[Existing System]
[New Input]
Analyze the Problem
Understand Stakeholder Needs
[Incorrect problem]
Manage Changing Requirements
[Addressing correct problem]
[Can't do all the work]
Define the System
Manage the Scope of the System
[Work in scope]

Workflow Detail



Activity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System Analyst
Concepts
Requirements Managemen
Traceability
Guidelines
Whitepapers
Develop Vision
Elicit Stakeholder Requests
Capture a Common Vocabulary
Structure the Use-Case Model
Find Actors and Use Cases
Manage Dependencies
Develop Requirements Manage
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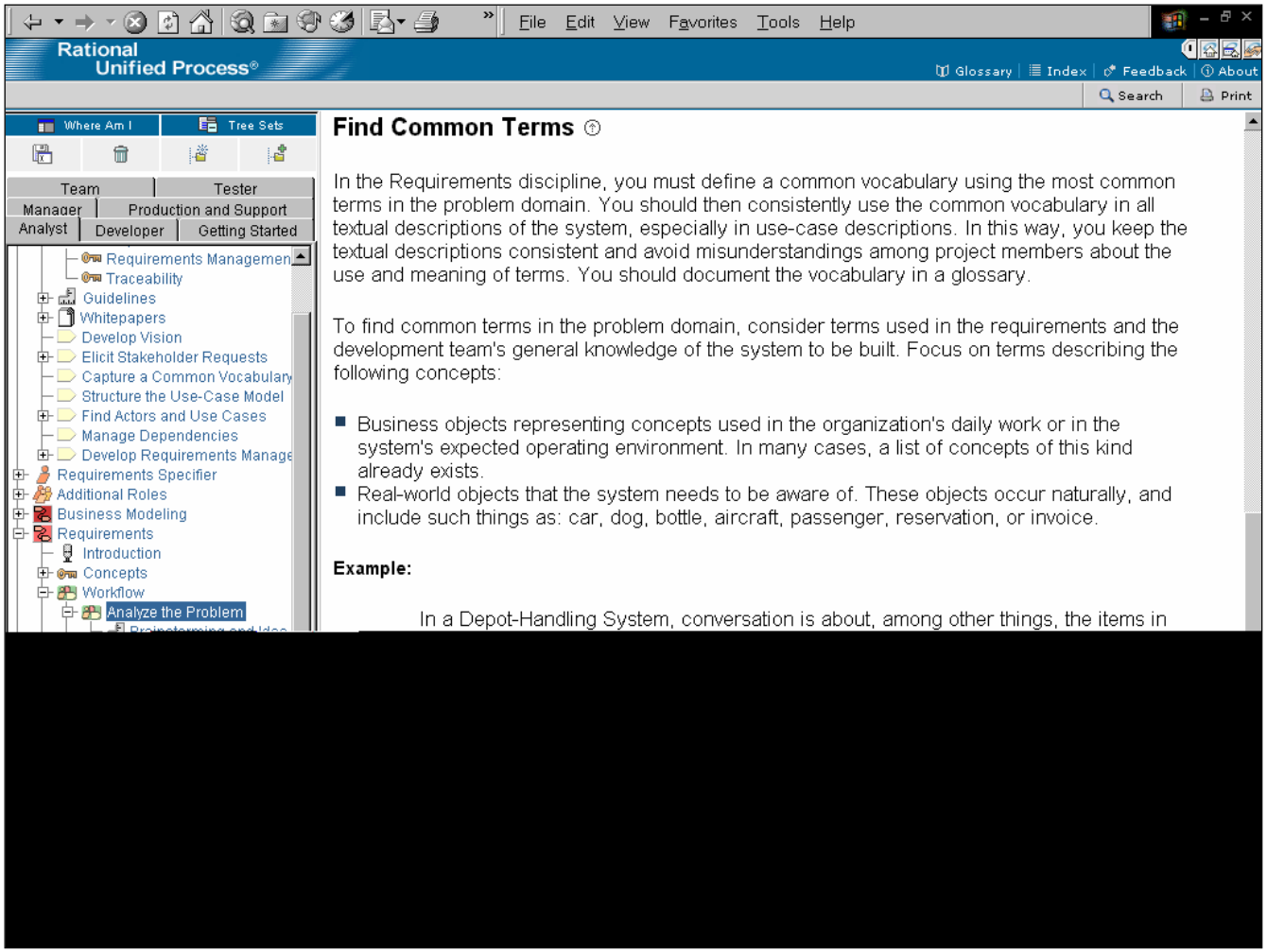
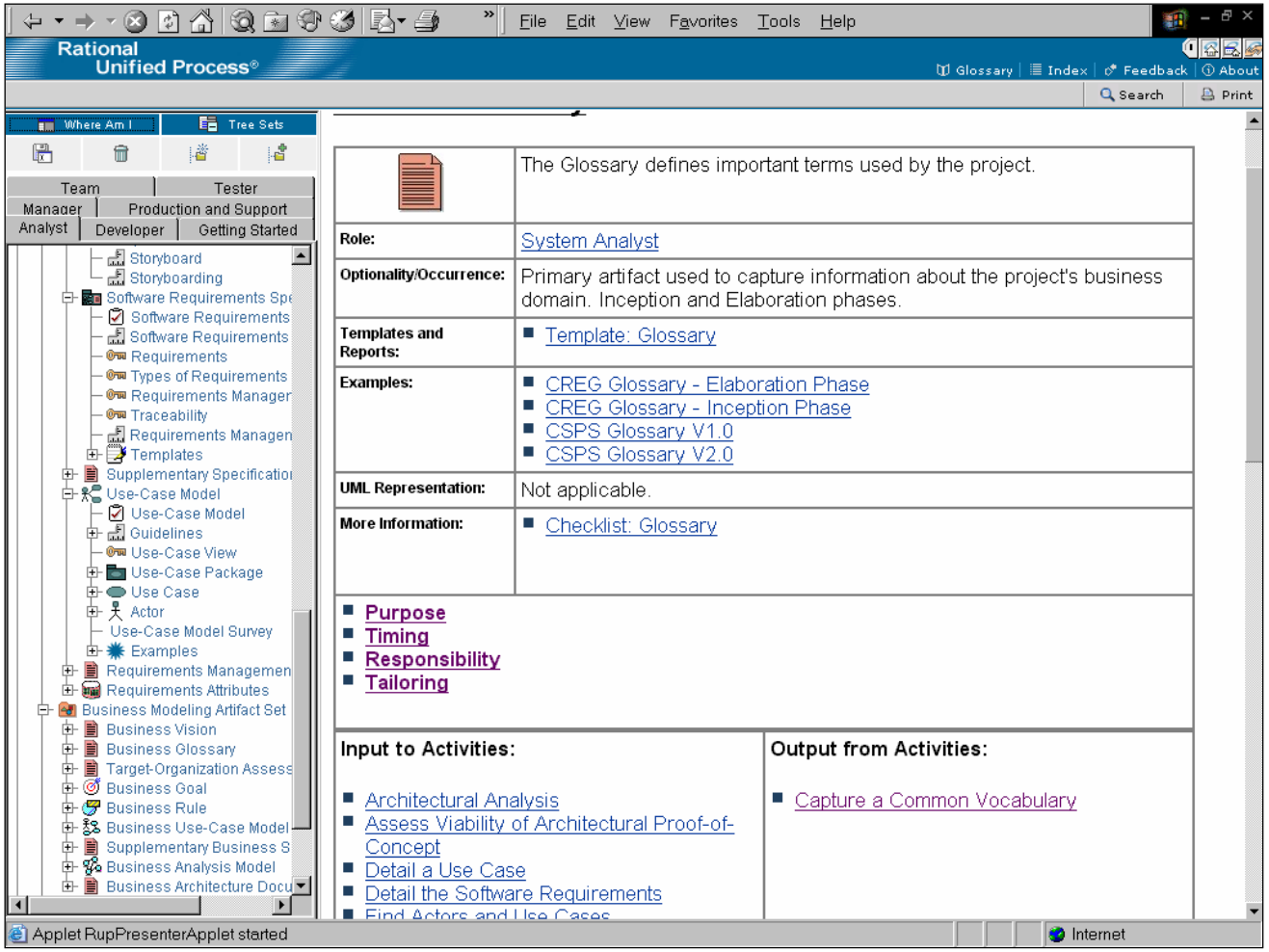
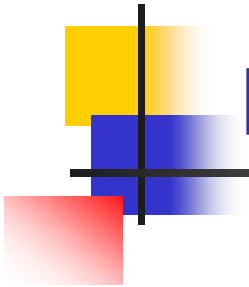
Manage Changing Requirer
Activity Overview
Artifact Overview
Guidelines
Important Decisions in Req
Artifacts
System Analyst
Capture a Common Vocabulary
Activity: Capture a Common Vocabulary
Purpose
To define a common vocabulary that can be used in all textual descriptions of the system, especially in use-case descriptions.
Role: System Analyst
Steps
Find Common Terms
Evaluate Your Results
Input Artifacts:
Business Analysis Model
Business Case
Business Rule
Business Use Case Model
Stakeholder Requests
Use Case
Use-Case Model
Vision
Resulting Artifacts:
Glossary
Tool Mentors:
Capturing a Common Vocabulary Using Rational RequisitePro
Applet RupPresenterApplet started
Internet

Activity Step



Artifacts May Be Documents, Models, Code, Etc.

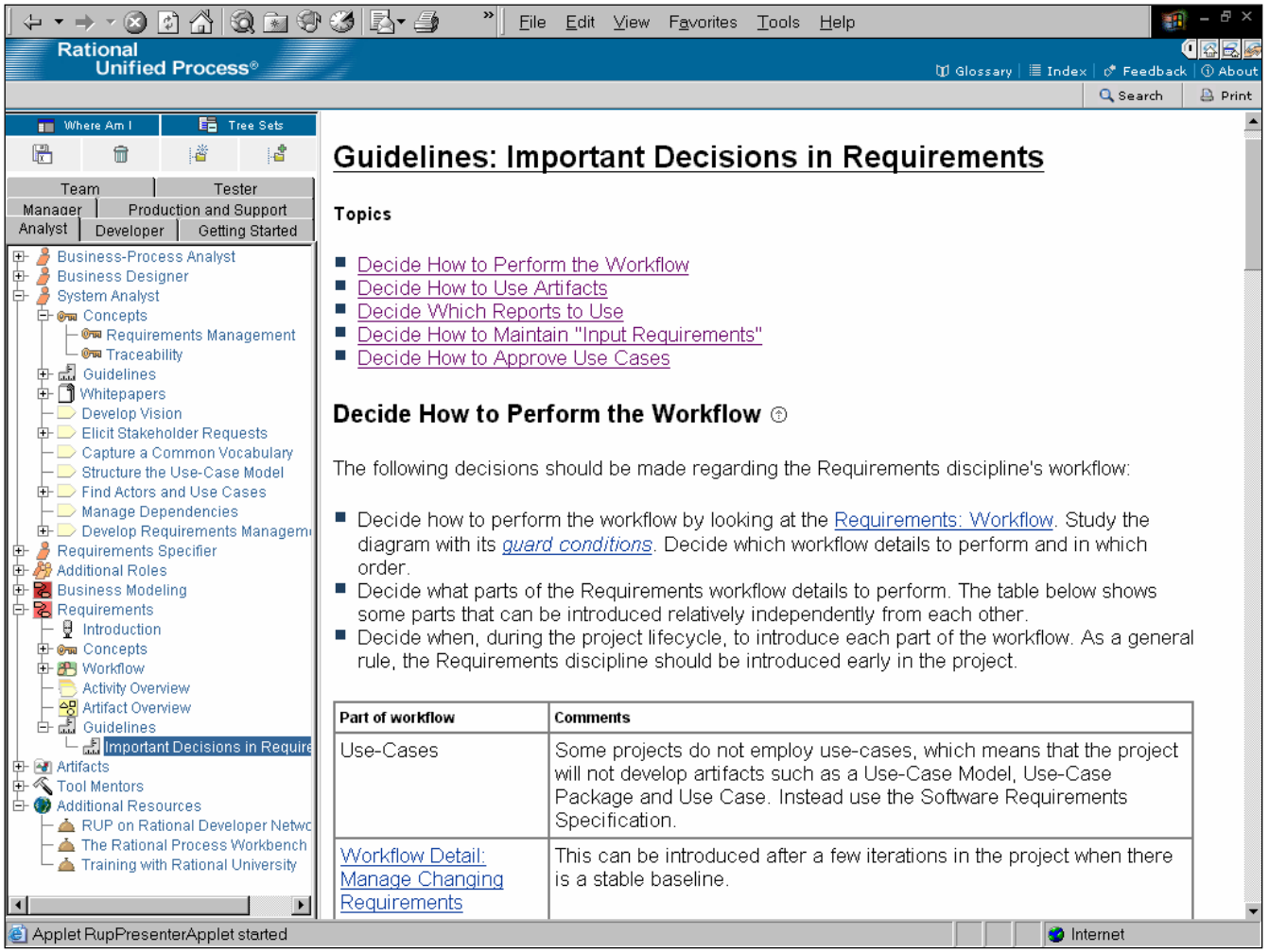




Document Templates

- Templates for document artifacts available in a variety of formats
  - Microsoft Word
  - HTML
  - Framemaker
  - Rational SODA
- Business Glossary Template

Guidelines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RUP on Rational Developer Netwc
The Rational Process Workbench
Training with Rational University
Guidelines: Important Decisions in Requirements
Topics
Decide How to Perform the Workflow
Decide How to Use Artifacts
Decide Which Reports to Use
Decide How to Maintain "Input Requirements"
Decide How to Approve Use Cases
Decide How to Perform the Workflow
The following decisions should be made regarding the Requirements discipline's workflow:
Decide how to perform the workflow by looking at the Requirements: Workflow. Study the diagram with its guard conditions. Decide which workflow details to perform and in which order.
Decide what parts of the Requirements workflow details to perform. The table below shows some parts that can be introduced relatively independently from each other.
Decide when, during the project lifecycle, to introduce each part of the workflow. As a general rule, the Requirements discipline should be introduced early in the project.
Part of workflow
Comments
Use-Cases
Some projects do not employ use-cases, which means that the project will not develop artifacts such as a Use-Case Model, Use-Case Package and Use Case. Instead use the Software Requirements Specification.
Workflow Detail: Manage Changing Requirements
This can be introduced after a few iterations in the project when there is a stable baseline.
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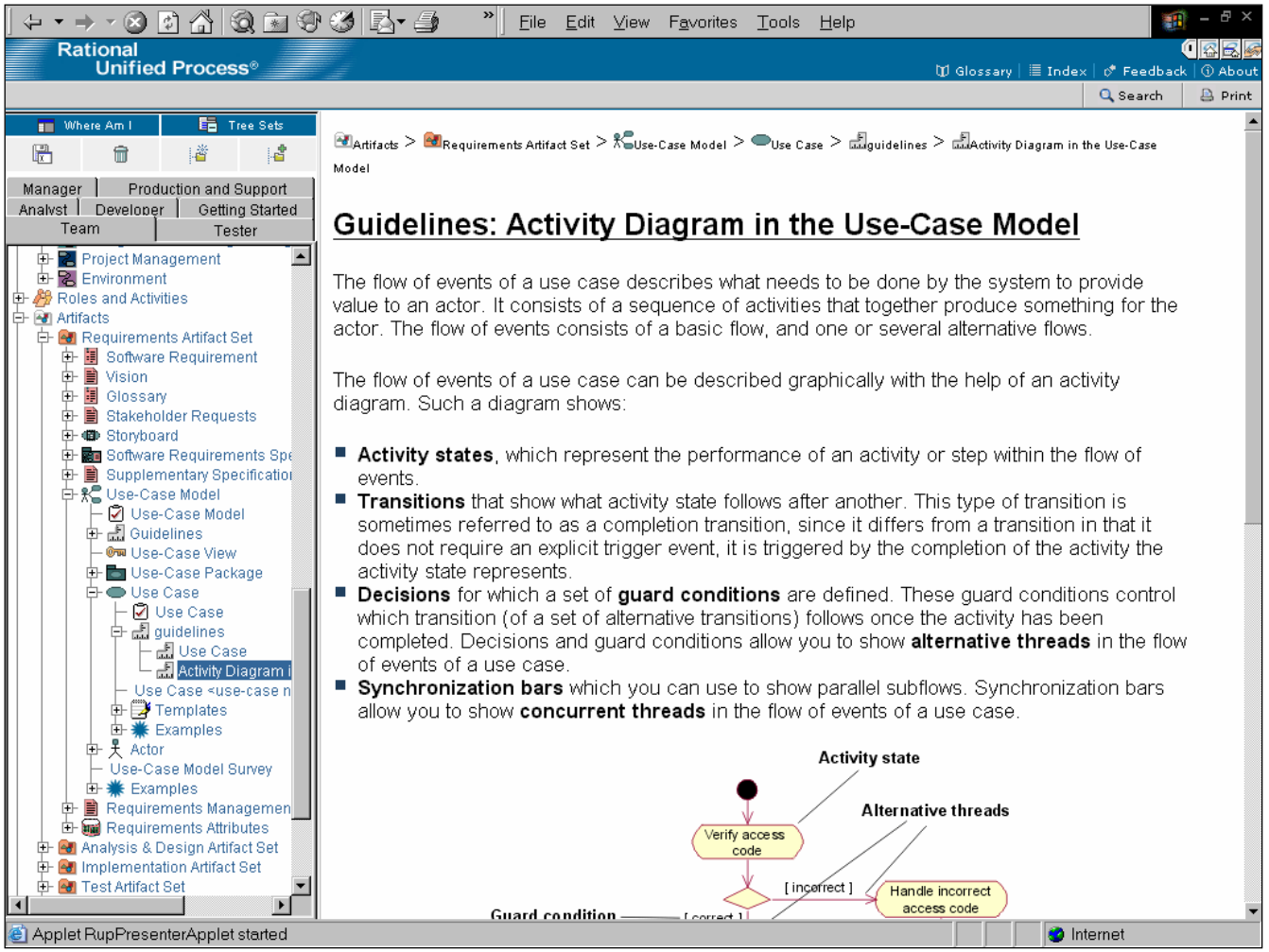
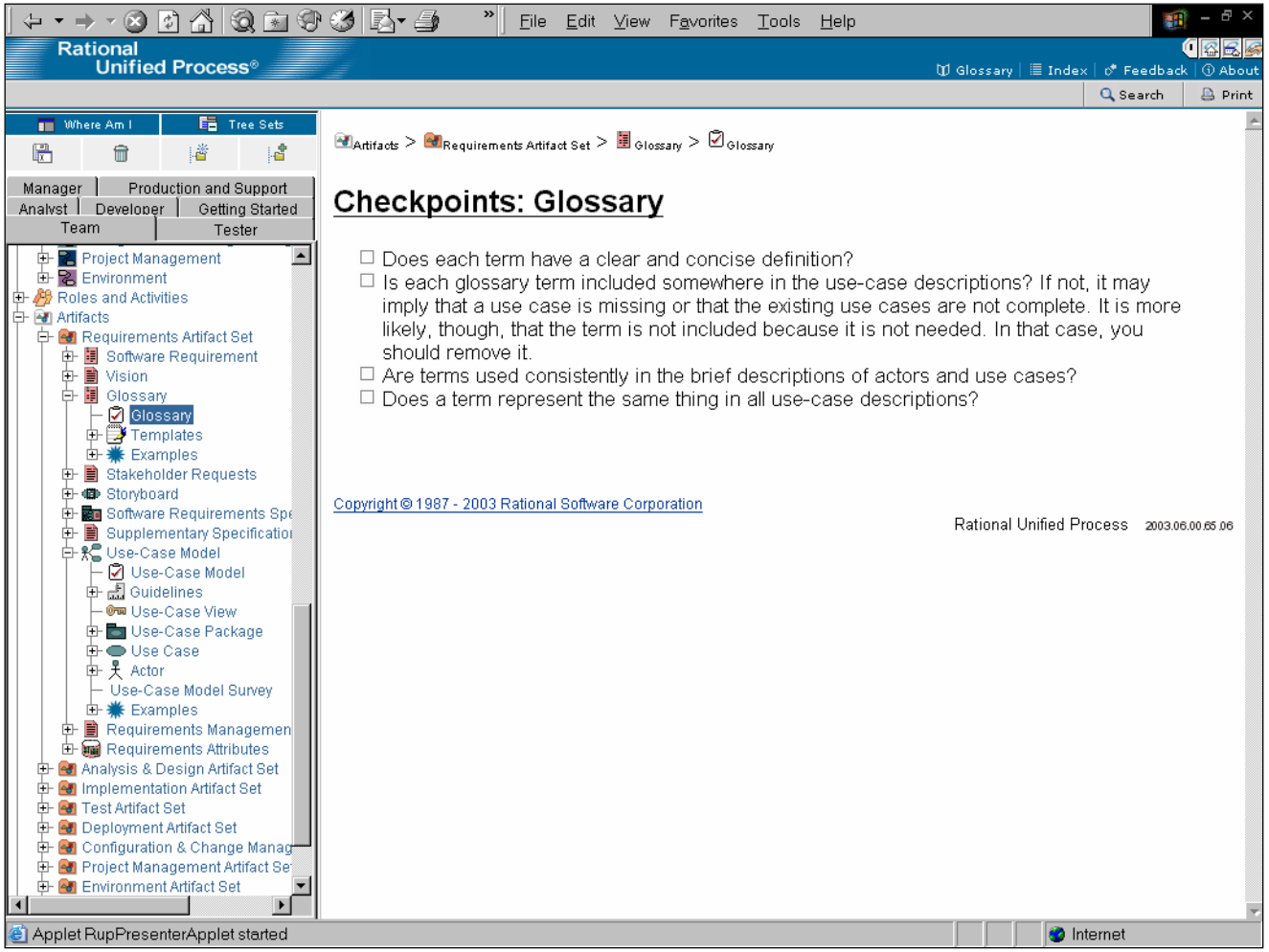
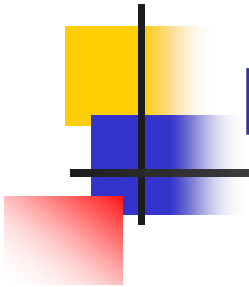
Guideline Example



Checkpoints for Quality Reviews





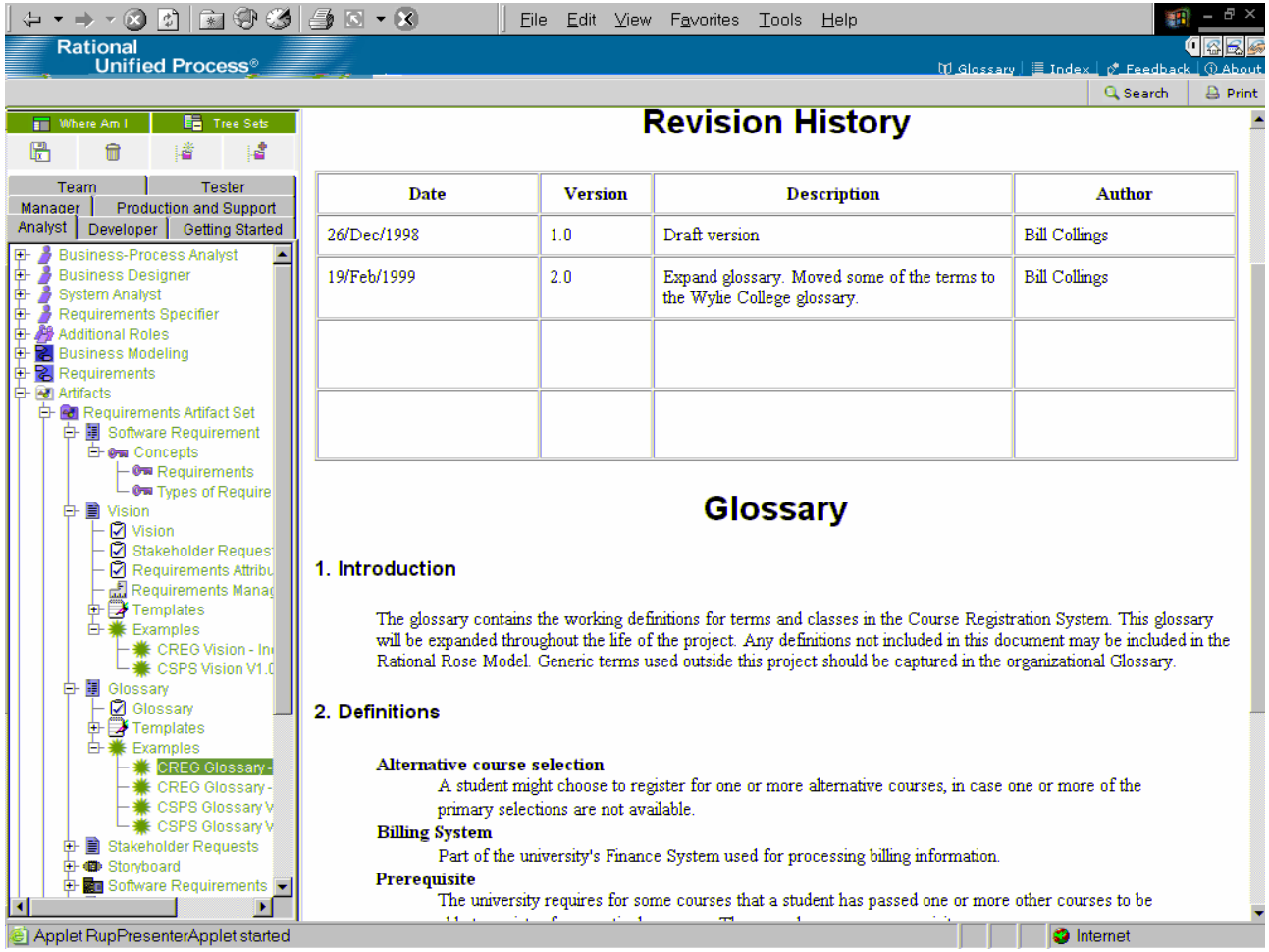
More Stuff

- Sample Projects
- Project Management Templates
- Tool Mentors

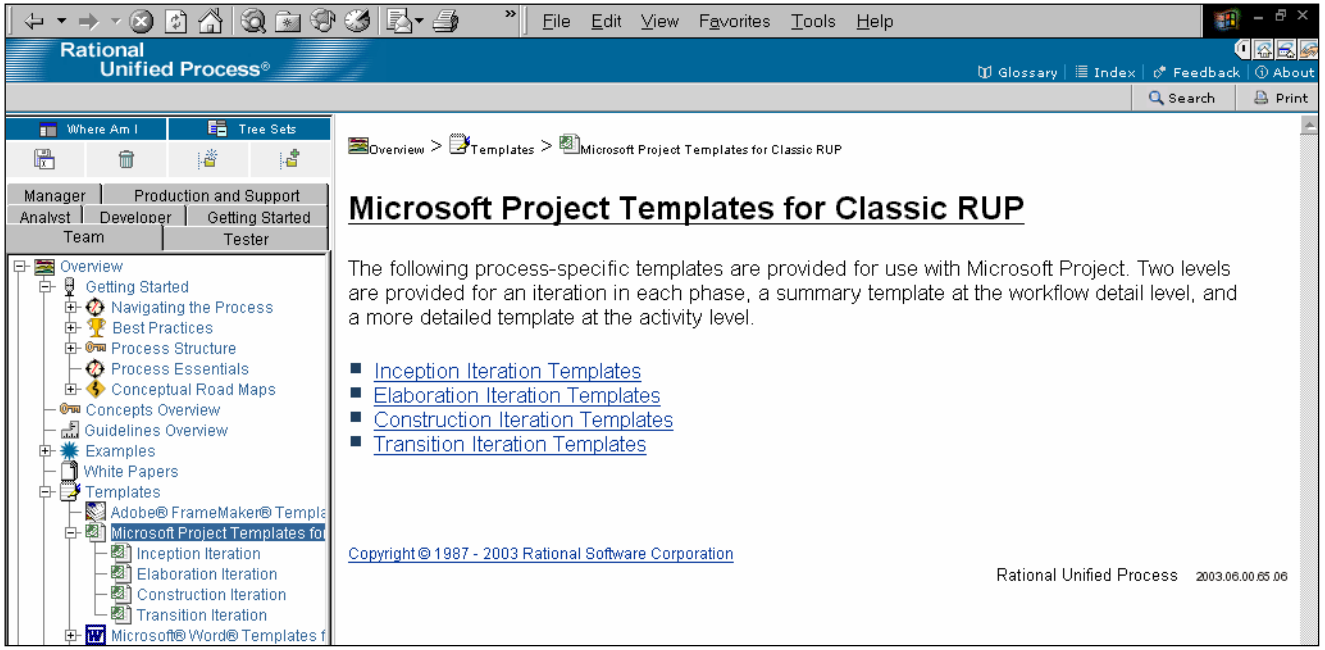
Sample Projects

- Examples of many artifacts for two projects
  - Course Registration System
  - Collegiate Sports Paging Systems

Glossary Example

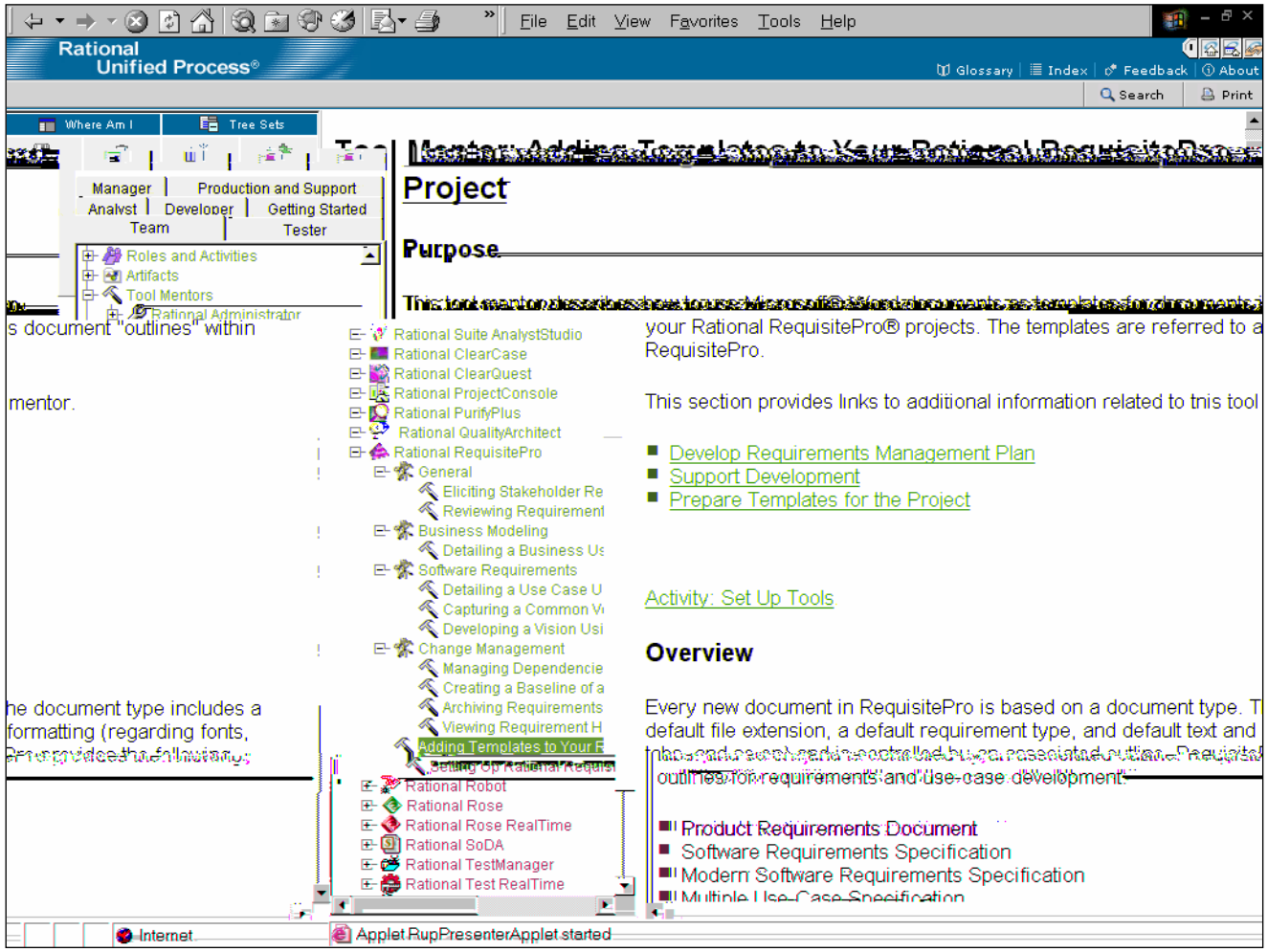


Project Management Templates



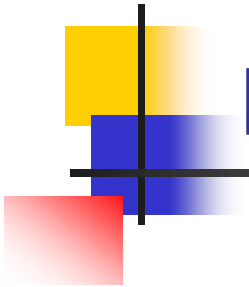
- Summary MS Project Example
- Detail MS Project Example

Tool Mentors - How to Use Rational Tools in RUP™



Caveats

- RUP™ is far from complete
  - Focused on software development
  - Series of books on *Unified Process … Phase* by Scott Ambler and Larry Constantine provide "missing" coverage
- Project oriented
- Lack of comprehensive "book" makes learning difficult



More Caveats

- IBM influence is creating some confusion and inconsistencies
- Use Cases are insufficient for good requirements, IMHO
- Fails to adequately address “data intensive” applications
  - Only addresses database design, no place for “data requirements”
- Viewed as “silver bullet” by many

Summary

- Forms solid basis for improving software development process, particularly for ad-hoc, Level 1 organizations
- Provides basis for incorporating OOA/OOD/UML into current software development process
- Provides basis for development using IBM, Rational and Microsoft technologies
- 30 day on-line evaluation available, http://www.rational.com

Questions