

Introduction to Rational Rose CSCI 577a Fall 2004

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Who Am I?



- SR. Research Associate with Center for Software Engineering
 - A MBASE developer
 - Lead researcher on COCOMO Security Extension
- 20+ years industrial teaching & consulting on object-oriented methods, software engineering, & programming languages
- Consultant on definition of Architecture Design Language (ADL) for real-time, safety-critical systems
 - Based on Unified Modeling Language (“UML”) & Honeywell’s MetaH
 - To be proposed as standard of Society of Automotive Engineers (SAE)
- Created Colbert Object-Oriented Software Development method (“OOSD”)
 - Noted for strength in real-time software development
 - NASA Langley Research Center used for software engineering process manual
- Founded Absolute Software Co., Inc. in 1986

Goal of Presentation

- Get you started using Rational Rose for 577a project
 - Diagrams needed for OCD & SSAD
 - Other diagrams will be discussed during lectures on
 - System Analysis
 - System Design

Assumption

- You are familiar with Unified Modeling Language (UML)
 - Either
 - Read *Introduction to UML* ***
 - Posted to 577a website
 - Read *OMG Unified Modeling Language Specification, v1.3, June 1999*
 - Read a book on UML
 - Been trained in UML
 - Used UML on work project

Access To Rational Rose & SoDA

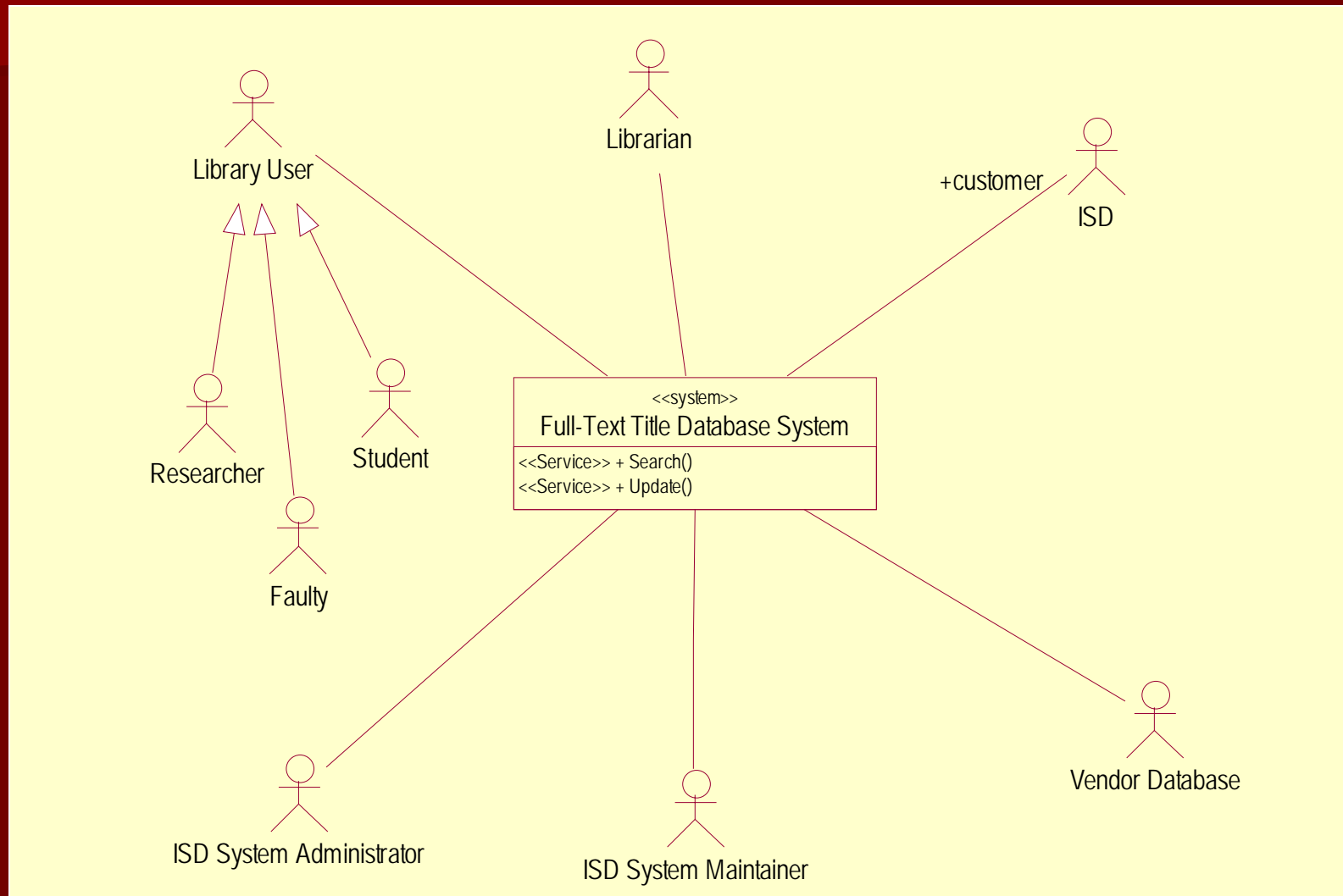
- Available at student lab except SAL
- We'll provide a CD
 - On-site: Pick Monday in class
 - Off-site: DEN will send
- Can download full version from Rational
 - 15-day trial license
 - Send TA request for license info via E-mail

The Rest of this Presentation is a Live Demo

See Webcast on DEN Site &
Snapshots on 577a Site

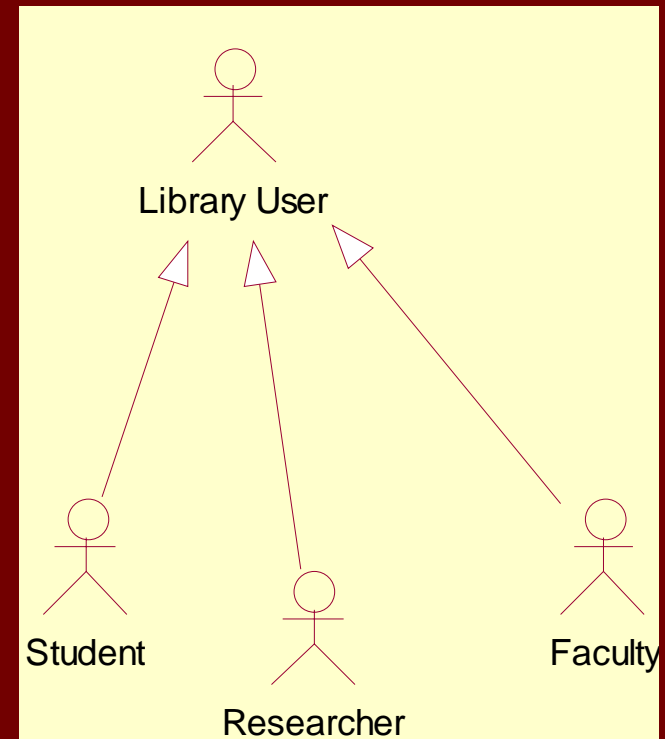
Class Model

System Boundary & Environment



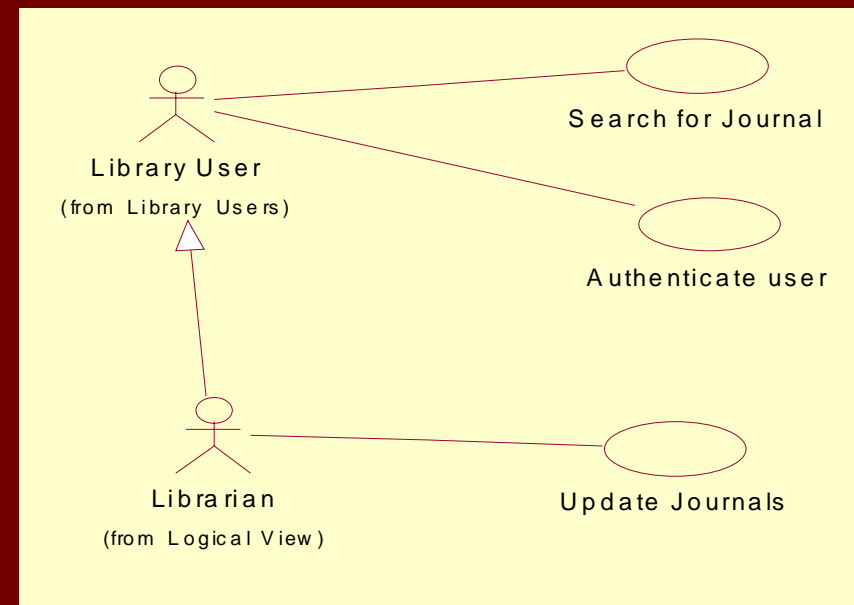
To Better Organize Your Model Use Packages

- Create subpackages that hold diagrams & model elements
- Example
 - Create Package Library Users on Previous Diagram
 - Double click on package to view “main” diagram of Library Users package
 - Will be created if doesn't exist
 - Move actors shown on the right into package by
 - In Browser view, dragging Library User actor
 - into the Library Users Package &
 - then onto diagram
 - Copy/Cut Student & Researcher from other diagram & Past on to new diagram
 - Create an actor on new diagram a name it “Faculty”
 - Need to add generalization manually
 - Right-click on Student & select Relocate
 - Student is moved in to package holding diagram
 - See Browser view
 - Select Researcher & Faculty, & Select Relocate from Edit Menu
 - Both actors are moved into package holding diagram



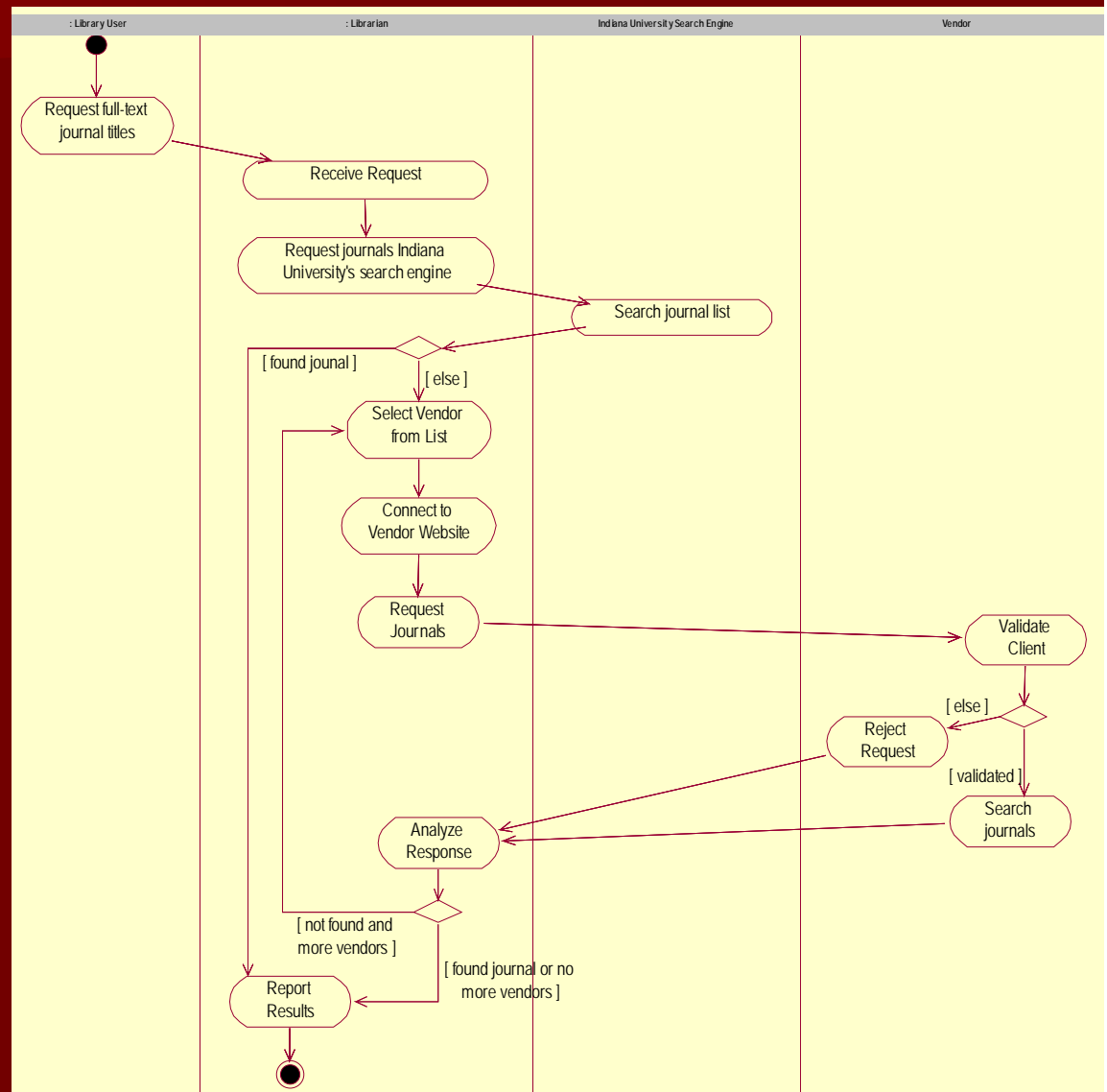
Use-Case Diagram

- Edit Main Use-Case Diagram in Use-Case View
 - Or right-click on any package & select new Use-Case Diagram
- Create diagram shown here
- Added generalization from Librarian to Library User so can authenticate both
 - Why can't we just draw association between Librarian & Authenticate User

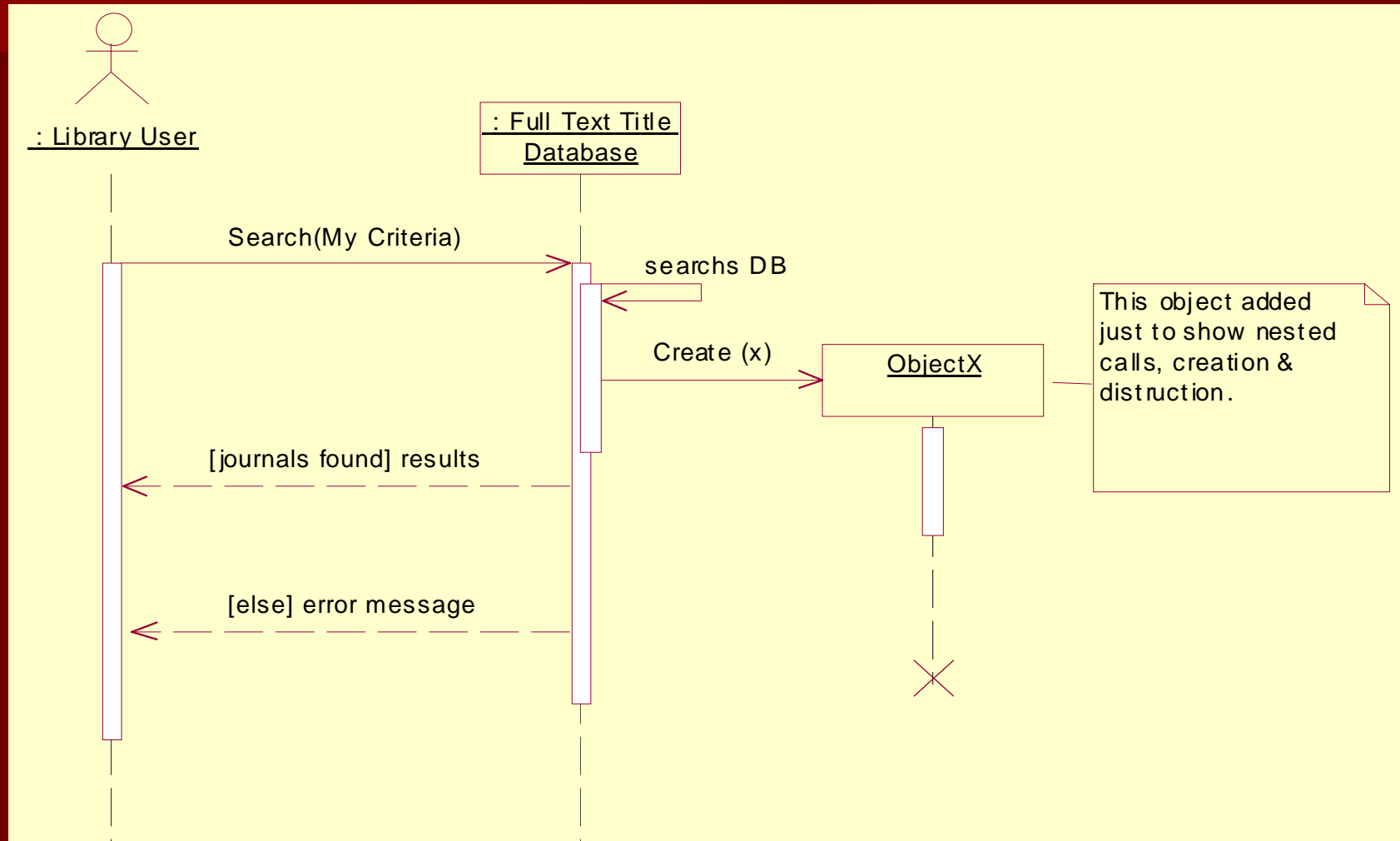


Activity Model

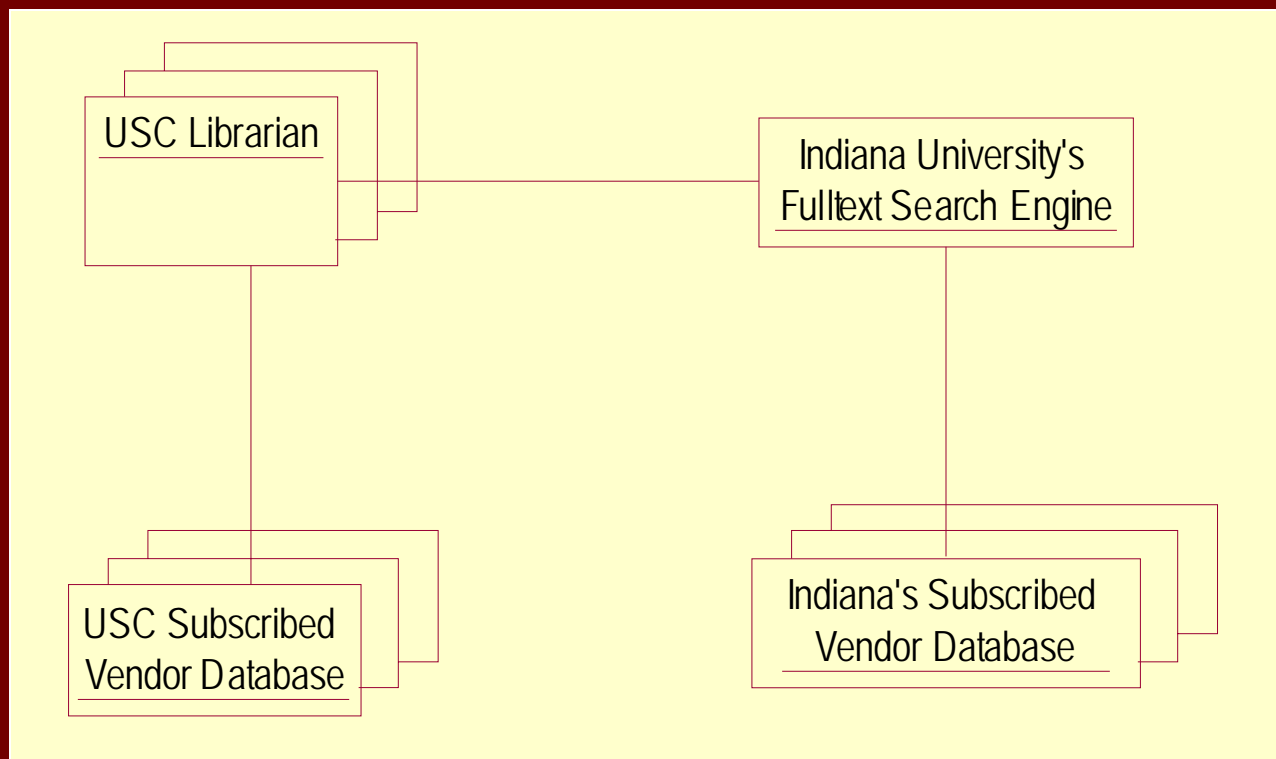
- Right-click on Search for Journals use-case
- Select new Activity Model
 - Activity Model & Diagram are created under use-case
 - Click on “+” next to use-case in Browser View
- Draw this picture



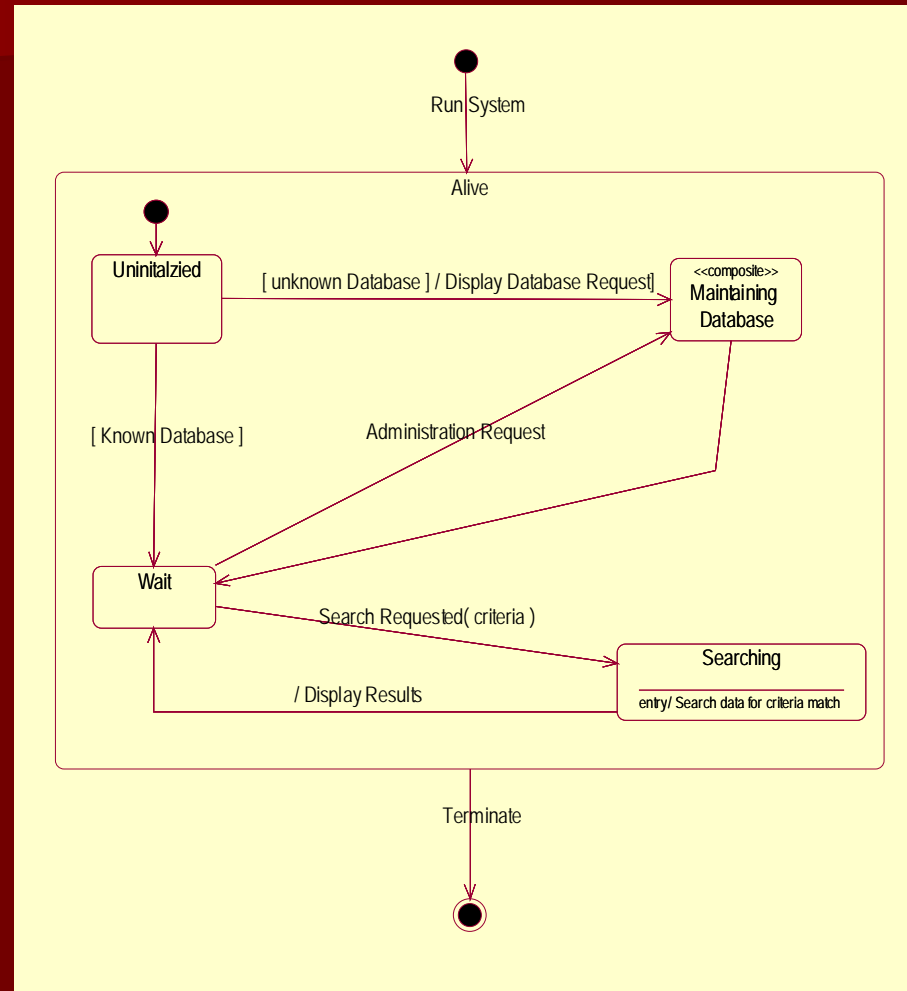
Sequence Diagram



Collaboration Diagrams



Example: State Model



Recommended Reading

- Rational Rose tutorial
- *Guidelines for Model-Based (System) Architecting and Software Engineering (MBASE) v2.4.0 (or later)*, Center for Software Engineering, University of Southern California.
- OMG (1999). *OMG Unified Modeling Language Specification*, 1.3 ed., Object Management Group: Framingham, MA. (www.omg.org)
- Booch, G., J. Rumbaugh, et al. (1999). *The Unified Modeling Language User Guide*, Object Technology Series, R. Booch, Jacobson ed., Addison Wesley Longman, Inc.: Reading, MA.
 - Describes UML 1.0 or 1.1 (not clear)
- Rumbaugh, J., Jacobson, I., et al. (1999). *The Unified Modeling Language Reference Manual*, Object Technology Series, R. Booch, Jacobson ed., Addison Wesley Longman, Inc.: Reading, MA.
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