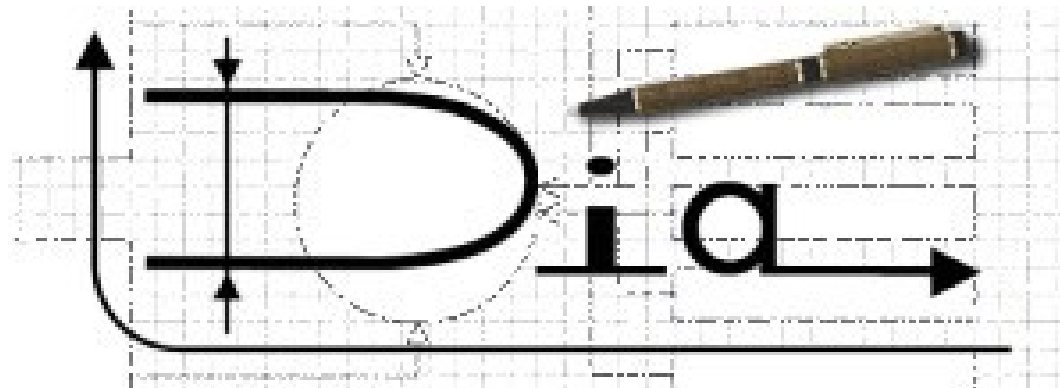


CISC 475/675: Object-Oriented Software Engineering

Lab 2: Creating UML Diagrams with



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Overview

- UML at a Glance
- Building UML Diagrams
 - The right tool for the right job
 - Good & Bad examples
- Using Dia
 - Summary of features
 - Live demonstration
- Other UML diagramming tools

UML at a Glance

- Unified Modeling Language
 - Standardized specification for object modeling
 - Graphically represent abstract models of systems
- Many different ways to represent same concepts
 - Provide measure of consistency & continuity
 - Remain flexible for organizational use
- Not without drawbacks
 - Bloated; unnecessarily complex & redundant
 - Divergence from system & code
 - "All models are wrong, but some models are useful."

UML at a Glance

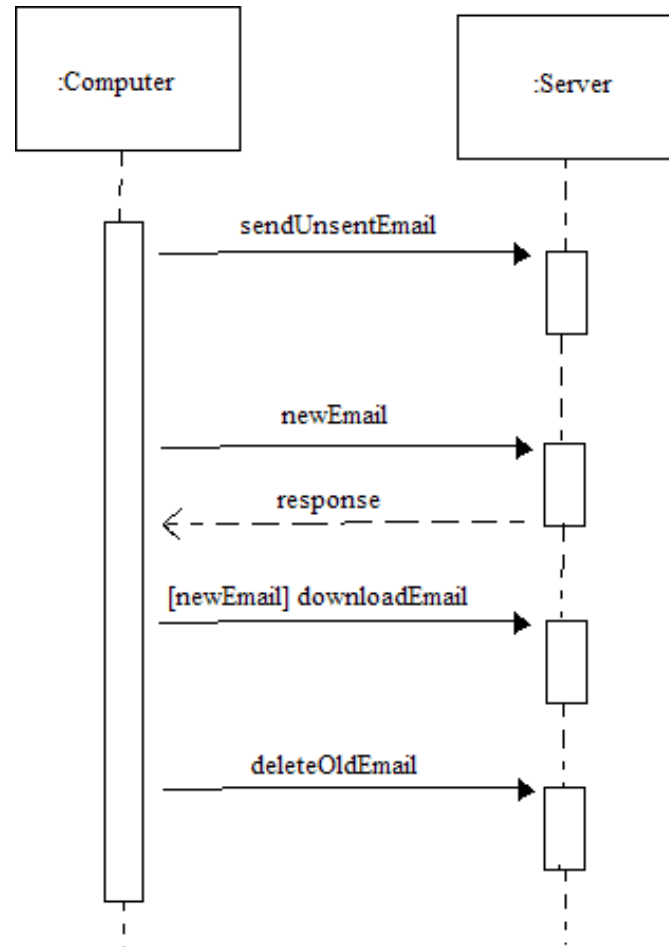
- This lab is not about *UML*
 - Prof. Siegel will cover that in class
- This lab is about *tools* for working with UML
 - So many to choose from
 - Several factors to consider
- At the end of this lab, you will:
 - Be more familiar with your options
 - Be able to make an informed decision
 - Hopefully save time & effort, avoid frustration

Building UML Diagrams

- The right tool for the right job
 - Many diagramming tools have built-in UML support
 - Save time, make building diagrams much easier
 - Finished product looks much more professional
- How to select the right diagram software:
 - Best set of UML features
 - Avoid steep learning curve
 - Cost, license, platform, interoperability

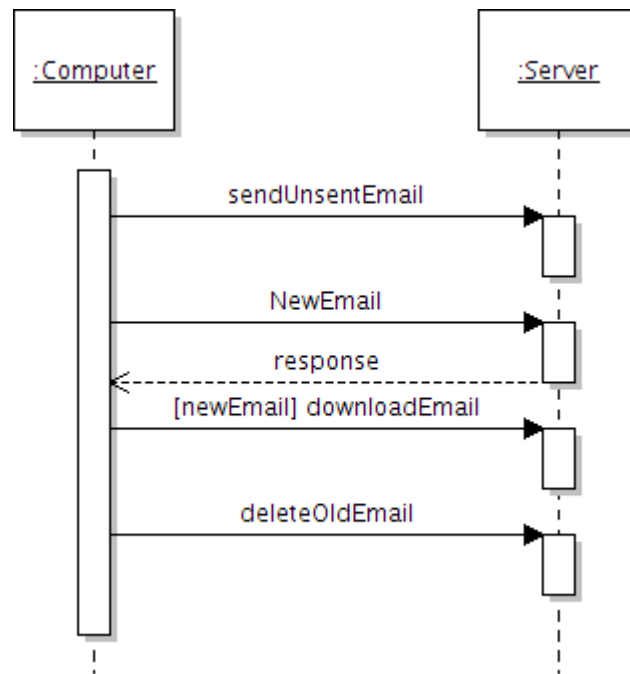
Good & Bad Examples

- Why can't I just use MS Paint?



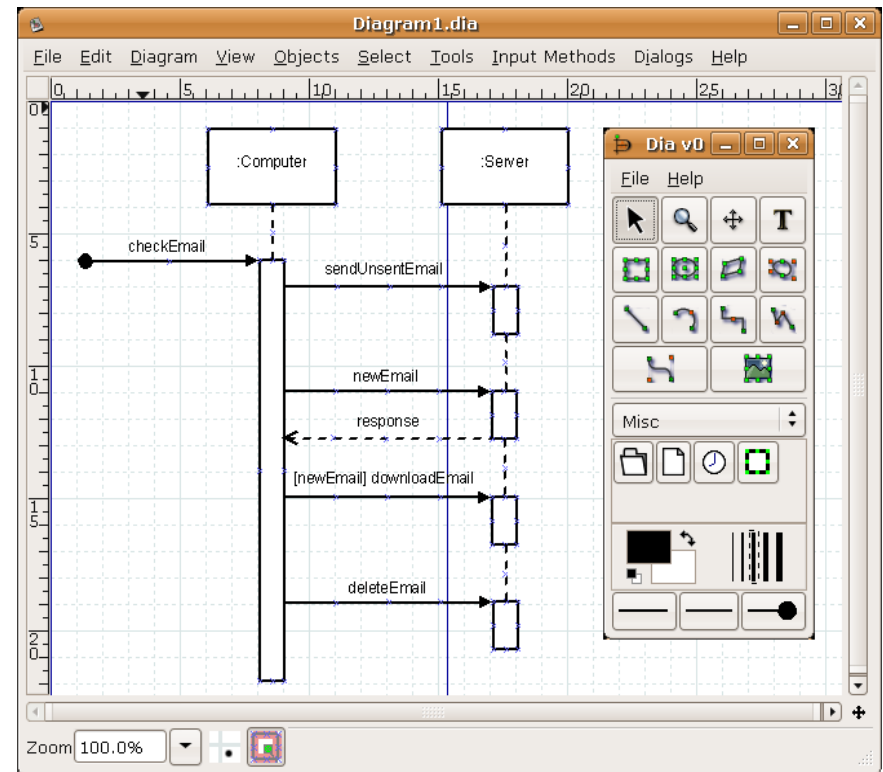
Good & Bad Examples

- UML-specific tools produce better-looking, professional results in less time



Summary of Dia Features

- Dia - <http://live.gnome.org/Dia>
 - Inspired by Visio, informal diagrams for casual use
 - Built-in UML shapes, objects, connectors, etc.
 - Fixed connection points can cause frustration
 - Menu-driven usage similar to The GIMP
 - **Free** under GPL
 - Linux, Unix & Windows



Summary of Dia Features

- Ability to export diagrams to .svg format
 - Scalable Vector Graphics
- Enable infinite scalability without “pixelization”
 - Use in LaTeX files for easy adjustments
 - Results in “zoomable” .pdf that still looks good
- .svg will be used in both your lab and project submissions
 - Export finished diagram



[image from Wikipedia]

Live Demonstration of Dia

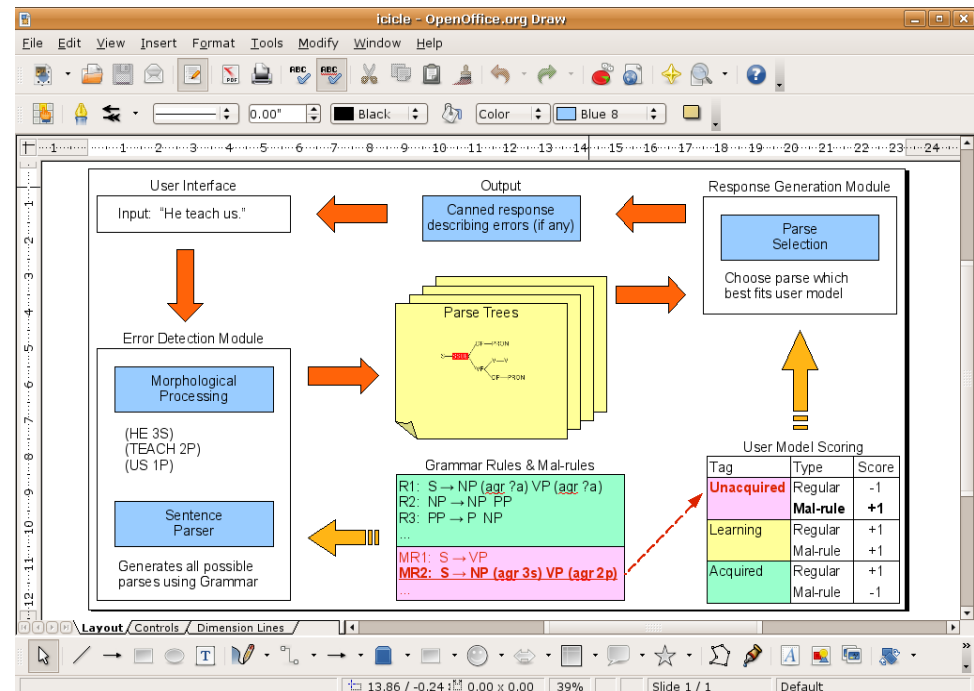
- (please bear with me for a moment...)

Other UML Diagramming Tools

- Visio - <http://office.microsoft.com/visio>
 - Microsoft's diagramming software
 - Interfaces with other Office & Visual Studio apps
 - Includes templates for advanced diagrams
 - UDel ECE/CIS students download it for **FREE**:
 - http://msdn07.e-academy.com/uod_cis
 - Other UDel students: **\$79.98** for Visio Pro 2007
 - <http://www.tsc.udel.edu/purchasing.html>
 - Part of MS Office family, not included in any suite

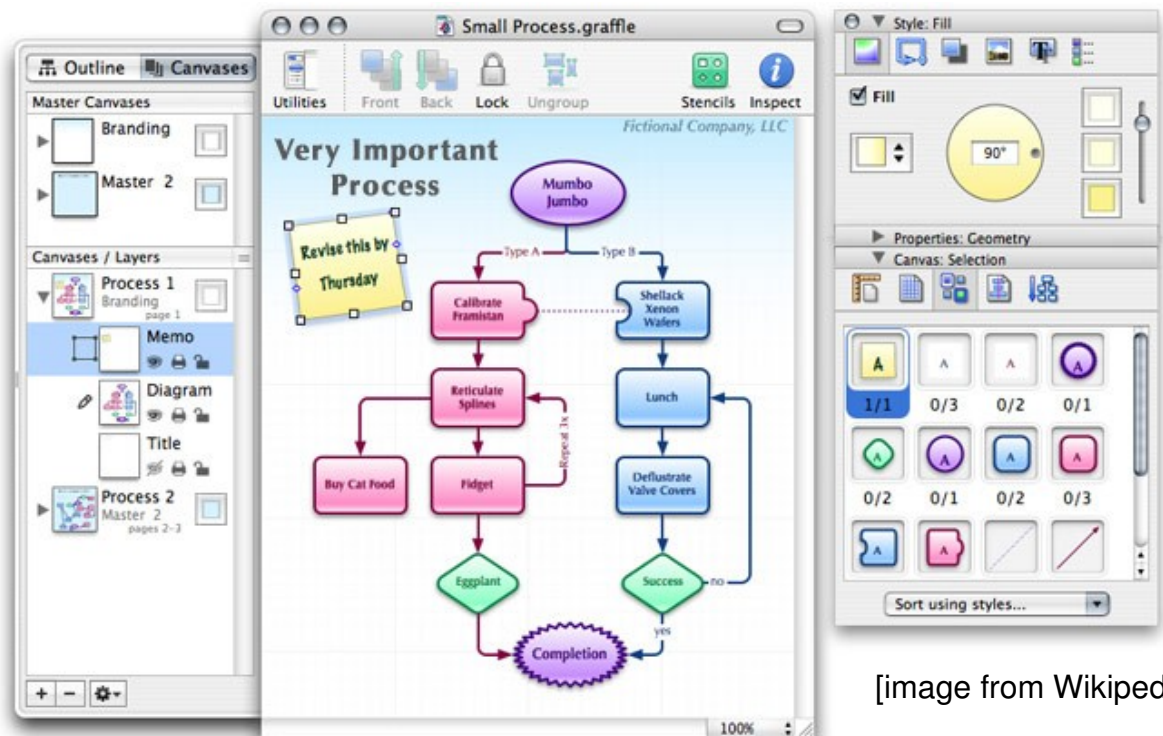
Other UML Diagramming Tools

- OpenOffice Draw - <http://www.openoffice.org/>
 - Package for drawing graphics & diagrams
 - Smart connectors, define your own “glue points”
 - Lacks built-in UML templates & symbols
 - **Free** under LGPL
 - Part of OpenOffice suite, multi-platform



Other UML Diagramming Tools

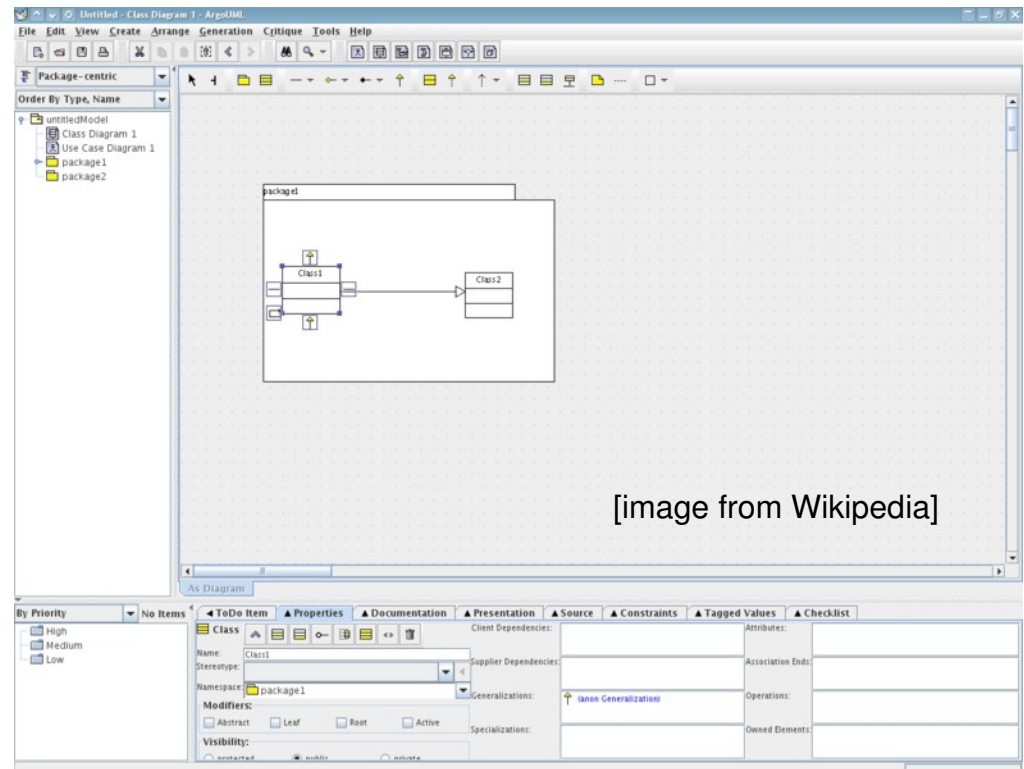
- OmniGraffle - <http://www.omnigroup.com/>
 - Powerful, feature-rich diagram and drawing tool
 - Impressive, highly-professional output
 - UML stencils available - <http://graffletopia.com/>
 - **\$40** for basic, or \$90 for Pro (student prices)
 - Mac OS X only
 - **Prof. Siegel's favorite!**



[image from Wikipedia]

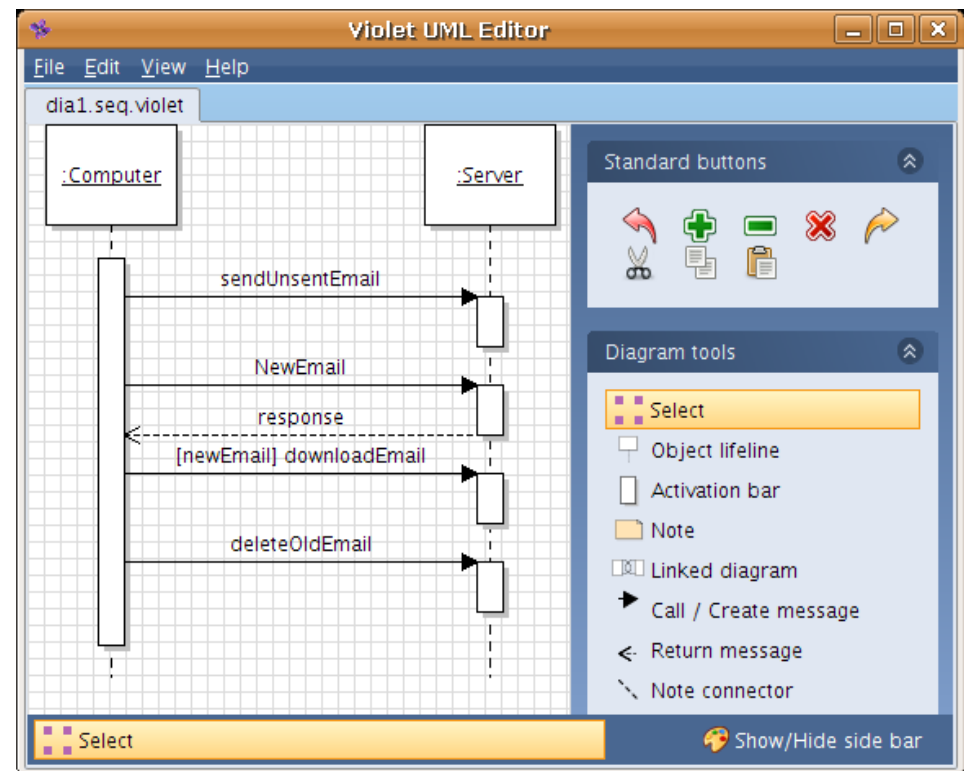
Other UML Diagramming Tools

- ArgoUML - <http://argouml.tigris.org/>
 - Feature-rich open source UML diagramming tool
 - Buggy, development suffering - lack of manpower
 - No “undo,” mostly UML 1.4, poor sequence diagrams
 - **Free** under BSD
 - Cross-platform JAR file



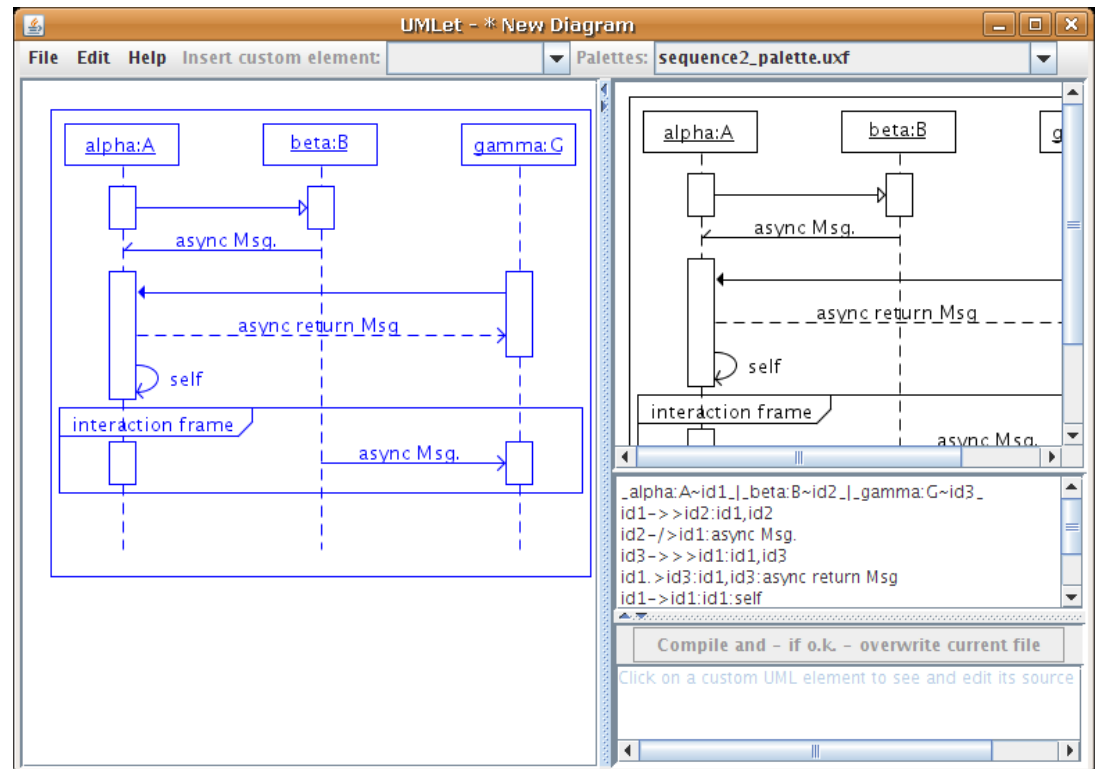
Other UML Diagramming Tools

- Violet - <http://horstmann.com/violet/>
 - Very easy to learn & simple to use
 - Quickly create nice-looking diagrams
 - Use Case, Class, Object, State, Sequence, Activity
 - **Free** under GPL
 - Cross-platform JAR file



Other UML Diagramming Tools

- UMLet - <http://www.umlet.com/>
 - Elements modified using text input, not dialogs
 - Work from pre-existing diagram templates
 - Activity, Class, Package, Sequence, Use Case, & more
 - **Free** under GPL
 - Cross-platform
 - JAR file or Eclipse plug-in



Other UML Diagramming Tools

- Many, many more UML diagram tools available
- Commercial & Enterprise-Grade:
 - Like [IBM Rational Rose](#) or [Borland Together](#)
- Image & Graphics Editors:
 - Photoshop, GIMP, Inkscape, etc.
 - Not particularly geared toward UML, however
- More complete lists of UML tools:
 - http://en.wikipedia.org/wiki/List_of_UML_tools
 - http://www.objectsbydesign.com/tools/umltools_byCompany.html

Lab Assignment

- Use Dia to create a UML diagram in .svg format
 - Choice of type & content is up to you
 - Feel free to re-create examples in textbook, etc.
- Insert diagram into .tex file from previous lab
 - Try modifying attributes until it looks “right”
 - May need to run pdflatex multiple times
- Email your new .tex, .svg diagram, & .pdf to charlieg@cis.udel.edu by Friday, 27 Feb.
- Additional resources available on my website!