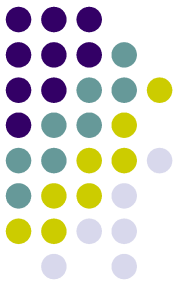
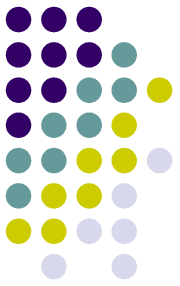


Tools for Supporting and Facilitating Agile Development



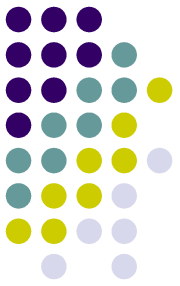
- Rinaldo Digiorgio
 - Romerl Elizes
- Dr. Fred Grossman
 - Dr. Joe Bergin

Agenda



- Agile and XP
- Tools and Agile/XP
- Demonstrations
 - Database access
 - GUI
 - Web application
 - Pairing (Time permitting)
- Futures

Agile Manifesto



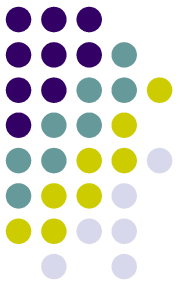
- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan

Example of a tool proclaiming support for Agile?



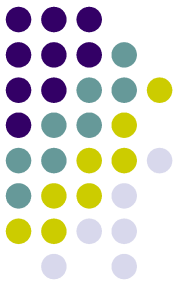
- Rails Example
 - no heavy tool sets, no elaborate processes, no complex configurations small groups of developers with their favorite editors a transparent environment
 - Trivially easy to generate HTML documentation for the entire code base
 - The framework delivers working software early in the development cycle
 - Rails is obsessive about DRY Don't repeat yourself and convention over configuration

XP Practices



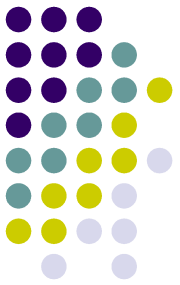
- Pair Programming
- Collective Ownership.
- Continuous Integration.
- Test Driven Development.
- Refactoring.
- Standup Meetings
- Sustainable Pace
- Coding Standard
- On-site Customer
- Sustainable Pace
- The Planning Game
- Small Releases
- Metaphor
- Simple Design

Tools being demonstrated



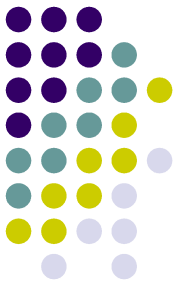
- CVS, Subversion
- Ant
- JUnit
- Abbot
- Cactus
- HtmlUnit
- DbUnit
- Subversion
- Jcoverage
- CruiseControl
- Eclipse
- Java Sun Studio 8
- echoVNC*, VNC*

Other Tools

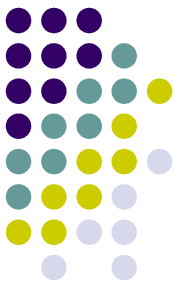


- Commercial Tools
 - Clearcase, PVCS
 - IntelliJ
 - Vendor Tools
 - Websphere, Oracle, Microsoft
- Open Source Tools
 - Good place to start
 - <http://subversion.tigris.org/> (bottom left)

Tools supporting XP Practices



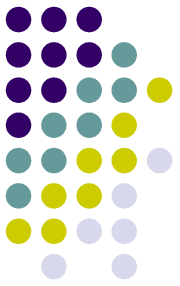
- Test Driven Development
 - Business Logic
 - JUnit, DbUnit
 - GUI APP
 - JUnit, Abbot
 - Web App
 - JUnit, HtmlUnit
- Continuous Integration
 - Cruisecontrol, Subversion, CVS
- Pair Programming (distributed/co-located)
 - Java Studio 8



XP and Testing/QA

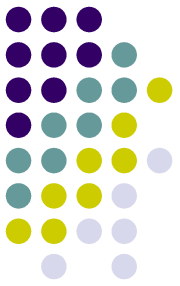
- Rom, Rinaldo work examples
- Current SDLC's put QA of release candidates toward the end of the cycle.
- Current cost infrastructure tend to target QA in cost cutting measures.
- More responsibility of testing should be placed on programming.
- Tremendous value of testing for making change and reducing fear

Testing



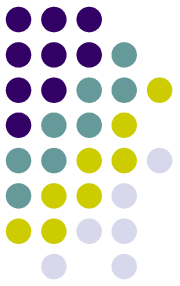
- Goal: Code does what it is supposed to do
- Write tests first, they will fail use tools
 - JUnit
 - Abbot
 - HtmlUnit
- Monitor Testing
 - Jcoverage
 - Part of the Continuous Build process

Refactoring



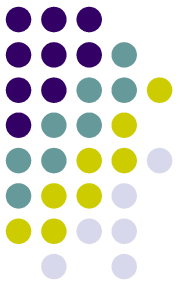
- Goal: Implement optimal design
- IDEs
 - Eclipse
 - NetBeans
- Both support
 - repetition removal
 - rewrite long methods
 - use clear names

Pair Programming



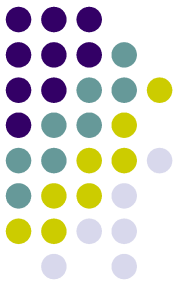
- Goal: team knowledge, sharing and ideas
- VNC
- Echovnc
- Instant Messaging
- Skype
- Remote desktop
- Eclipse Collab tool
- NetBeans
- Java Studio Enterprise 8

Collective Ownership



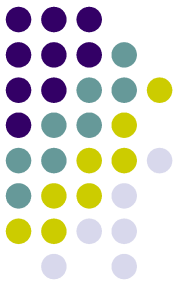
- Goal: team can code and make any change
- Source Code Management System enables
 - Subversion
 - CVS
- Require comments on putbacks, checkins
 - Broadcast every putback, checkin
 - Results of every putback result in a build

Continuous Integration



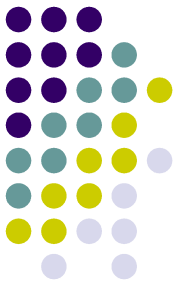
- Goal:remove change fear, verify system works
- Cruisecontrol
 - Verify system compiles
 - Run Unit tests
 - Run coverage test
 - Deploy system
 - Run functional tests
 - With jcoverage enabled

Coding Practices



- Code and Design Simply
- Refactor Mercilessly
 - (Major IDEs support refactor)
- Develop Coding Standards
- Develop a Common Vocabulary
 - Some of the tools enforce and or aid
 - Braces (not really an issue anymore)
 - Tabs(not really an issue anymore)
 - naming conventions (Very important)
 - Comment style (in java case javadoc)
 -

DbUnit



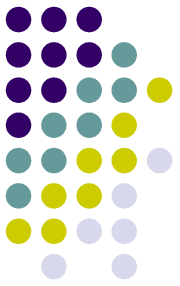
- Database testing with JUnit
- typical environments
 - local, dev, deployment and production
- Best Practices
 - Use One Database Instance per developer
 - Good Setup doesn't need cleanup
 - Use Multiple small Datasets
 - Perform setup of state data once for entire test class/suite
 - Connection Management Strategies

Database Access (Demo 1)



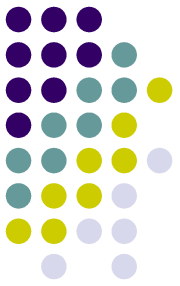
- Story: Provide methods to get data from DB
 - Write the test first (use DbUnit)
 - Get A connection to the DB
 - Get data from the DB
 - Put the code back to source code repository
 - Observe the Tools
 - Cruisecontrol
 - Jcoverage
 - Subversion
 - IDE
 - Ant

UI application (Demo 2)



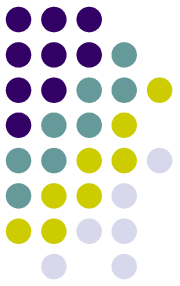
- Java Swing application accessing a database to retrieve information
- The application has a radio button bug
- Abbot tools will be used to develop GUI-automated tests
- Abbot scripts can be incorporated into JUnit tests
- Abbot allows users to visually see tests running GUI applications

Web application (Demo 3)



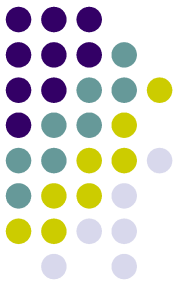
- HTML page accessing a database to retrieve information
- The application has a radio button bug
- HtmlUnit tools will be used to develop JUnit tests
- HtmlUnit tools do not offer any visual capability to see tests running web applications

Collaboration tools (Demo 4)



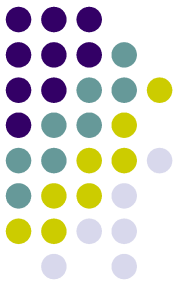
- Collabtool (JSE7 --> NB 4.1/5)
 - Remote control of others desktop
 - sharing files
 - Instant messaging
- VNC
 - Hard for some users doesn't work in corporate environments
- echoVNC
 - A service for Collaboration

IDE's/Application frameworks with Built in support



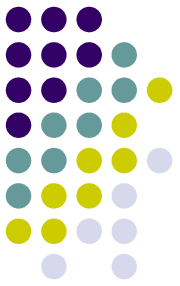
- Classical Methods use an IDE and tests
 - Netbeans
 - Eclipse
- Emerging Test Framework built in IDE optional
 - Ruby On Rails
 - Spring
-

Early Adopters



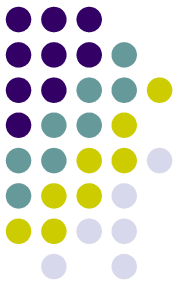
- Maven
 - Improving the Build process
 - Project Object Model (POM)
- Spring (IOC/Aspect)
 - Testing in J2EE world is hard
 - Code is hard to understand
 - More manageable
- Ruby on Rails

Dave's Top 10 reasons to like Rails



- Brings Agility to web development
- allows you to create cool web pages just like the kids do
- My applications stay maintainable as they grow
- I get to say yes to clients more often
- Testing is built-in and easy so it gets used
- Instant Feedback
- Metaprogramming
- code generators let me get started quickly
- No XML!

URLS



- <http://digiorgio.com:8090/blojsom/blog/Rinaldo/Reading%20Lists/>
- <http://collab.netbeans.org/>
- XX