CVS, Logging, Development

Shane Cantrell
Zach Crisman
What is a “Versioning System”?

- Records the history of files
- Shares code within a group
- Allows multiple people to edit the same files
- Merges changes from different people
- Goes back in time
The Alternative

- Saving every version of every file you have ever created
- Saving current state of project every so often
- Wasting disk space by duplicating unchanged portions of code
- Communicating manually to prevent coding conflicts
- Forgetting where the most recent version is or having group members “accidentally” choose an old version
Ways to Access CVS

- Command Line
  - Cygwin
  - SSH Secure Shell Client 3.2.2 (full)
- TortoiseCVS (www.tortoisecvs.org)
- WinCVS (www.wincvs.org)
CVS Setup

- Environment Variables:
  - CVSROOT = <location of CVS repository>
  - CVS_RSH = <remote shell>
  - EDITOR = <default editor>

- Windows Examples:
  - CVSROOT = :ext:shanec@vole.cs.washington.edu:/homes/iws/shanec
  - CVS_RSH = ssh2.exe
  - EDITOR = notepad.exe
  - PATH = %PATH%;C:\cvs;C:\Programs\SSH
Common Commands

- Checkout module (get most recent version)
  - cvs co <module-name>
- Update files (incorporate recent changes)
  - cvs update <file-list>
- Commit files (publish your current files)
  - cvs commit <file-list>
- Add new files to the module
  - cvs add <file-list>
  - cvs add -ko <binary file-list>
- Questions? Try ‘man cvs’
Making a Repository

- Make your CVS directory
- Set CVSROOT to your CVS directory
- `cvs init`

- Tutorial

( Typed commands are in italics. )
Adding a Module

- `cvs checkout CVSROOT`
- Edit the `./CVSROOT/modules` file
  - Add the line describing your module and location
  - (eg. `project project/`)
- `cvs commit CVSROOT`
- `cd $CVSROOT`
- `mkdir project` (make the project directory)
- Set the file permissions (if necessary) with `chgrp`, `chown`, and `chmod`. 
Adding files

- Checkout the module
- Add the new directories using `cvs add`
- Add the new files using `cvs add`
- Commit the new files
CVS Output Key

U - the file was brought up to date
P - the file was brought up to date via a patch
A - the file has been added
R - the file has been removed
M - the file has not changed in the repository or it has changed in the repository but it was successfully merged
C - there is a conflict between the repository version and your version
? - file not in repository, CVS does not know what to do with it
Message Logging in Java

- Chapter 13 of Tomcat
- J2SE 1.4 - java.util.logging
  - standard logging library
- Jakarta Log4j
  - previous “standard”
- System.out.println()
  - lazy man’s technique
Why not System.out?

- No way of switching logging on or off at runtime
- No way of specifying logging priority or message severity apart from the message text
- Lacks special functionality (like e-mailing an administrator)
- Must be redirected into a file
- Must be removed when the product is released
Logging Levels

- Level.SEVERE (highest value)
- Level.WARNING
- Level.INFO
- Level.CONFIG
- Level.FINE
- Level.FINER
- Level.FINEST (lowest value)
Logging Classes

- java.util.logging.*
  - Logger
  - Handler Classes
    - ConsoleHandler
    - FileHandler
    - SocketHandler
  - Formatter Classes
    - SimpleFormatter
    - XMLFormatter
Getting the Logger Object

- class Logger
  - public static Logger getLogger(String name)

- Creates a new Logger object if one does not already exist for *name*.

- If package type naming is used, then sub names inherit logging levels
  - For example, “net.hydru.test” would inherit the logging level setting from “net.hydru”
Configuring the Logger

... 

convLogger.setLevel(Level.INFO);
try {
    FileHandler logfile = new FileHandler("F:/Tomcat/logs/conv.log");
    logfile.setLevel(Level.INFO);
    logfile.setFormatter(new BasicFormatter());
    convLogger.addHandler(logfile);
    convLogger.setUseParentHandlers(false);
}
catch (IOException e) {
    convLogger.warning("Failed to set up logfile");
}

...
Logging Messages

- class Logger
  - public void severe(String msg)
  - public void warning(String msg)
  - public void info(String msg)
  - public void config(String msg)
  - public void fine(String msg)
  - public void finer(String msg)
  - public void finest(String msg)
Jakarta Libraries

- http://jakarta.apache.org/
- Cactus (unit testing)
  - http://jakarta.apache.org/cactus
- Apache XML Project
  - http://xml.apache.org/
- Regular Expressions (Regexp)
- Text Processing (ORO)
- Text Search Engine (Lucene)
LCO1 Considerations

- Be creative
- Midlet Considerations
  - built-in GUI
  - custom GUI
  - phone specific libraries
- Server Considerations
  - servlet
  - traditional server
  - database
LCO1 Reminders

- What is it?
- What does it do for us?
- How is it supposed to work?
- Is it possible?
  - What is needed?
  - How do you intend to go about making it?
- Who is it for? Are there support people involved in its functionality?
- Be sure to ask the questions throughout and clarify when in doubt of clarity.
Sneak Preview (Next Time)

- Bug Tracking
  - elementool.com
  - fogbugz.com
- Unit Testing
  - jUnit (junit.sourceforge.net)
  - Jakarta Cactus
- Other Tools...