Review

David Rabinowitz

Review

- What have we done during the course?
- Which topics we have not discussed?
- Where to learn more?
- What is for the exam?

In the course

- TDD - Test Driven Development
  - Reduces bugs
  - Use of mock objects
- Refactoring
  - Making the code smell better

Exceptions

- Common mistakes
- Correct exception handling
  - Exception neutrality
  - Weak exception safety
  - Strong exception safety
- *"A False Sense Of Security"*

Development Tools

- Static code analysis
  - Bug prone code
  - Dependencies in the code
- Profilers
  - Memory
  - CPU

Basic Design Principles

- The Open Closed Principle
- The Dependency Inversion Principle
- The Interface Segregation Principle
- The Acyclic Dependencies Principle
- The Law Of Demeter

Typing

- Static and dynamic typing
- Covariance
- Descendant Hiding
- The Liskov Substitution Principle

Generic Programming

- Write the code once, and worry about the type at compile time
- Used mainly in containers and algorithms
- C++ templates, Java generics

Dynamic Proxies

- Support for creating classes at runtime
- Used for
  - Aspect-Oriented Programming: standard error handling, log & debug for all objects
  - Creating dynamic event handlers

AOP & AspectWerkz

- Cross-cutting concerns
- Terminology
  - Advices
  - Pointcuts
  - Aspects

Technologies

- O/R Mapping
  - Problems
  - Hibernate
- Ant
  - The new build tool

Not covered in the course

Distributed Applications

- What happened when the application run on more than one computer?
  - Web server
  - Application server
  - Database
- SOA - Service Oriented Architecture

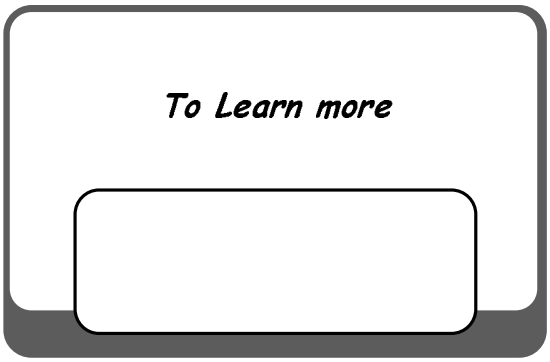
Web Applications

- Many applications are written now with web interface
  - Why?
- How to design scalable and maintainable web site?
  - MVC
  - Interception filters

SWT

- New GUI framework for Java
  - Instead of Swing
- Developed as the GUI framework for Eclipse
- Headed by Erich Gamma
  - Author of "Design Patterns"
- Use many of the patterns mentioned in the course

To Learn more



Java & J2EE

- http://www.java.net/
- http://www.onjava.com/
- http://www.javaworld.com/
- http://www-136.ibm.com/developerworks/java/
- http://www.theserverside.com/

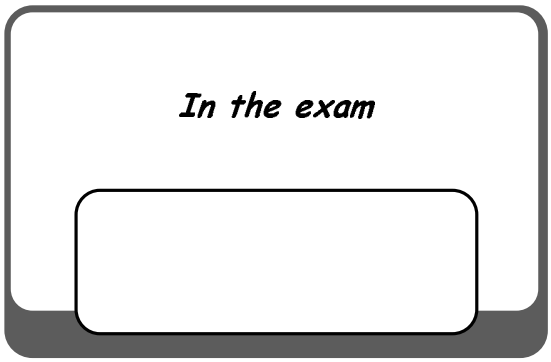
.NET & Microsoft

- http://msdn.microsoft.com
- http://msdn.microsoft.com/msdnmag

Look out for the weblogs

- http://www.jroller.com/
- http://weblogs.java.net/
- http://www.oreillynet.com/pub/q/webloggers
- http://weblogs.asp.net/

In the exam



Exam material

- Theoretical exercises
- All the articles marked as "required"
- All the exercise hour material
- NOT technologies
  - Eclipse
  - Ant
  - Hibernate