Advanced Java Programming

Administrivia

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Introduction

• Advanced ...
  ... not the basic stuff
  ... significant prior knowledge is expected
• Java ...
  ... well, J2EE really
  ... used to develop enterprise web applications
• Programming ...
  ... it’s a very practical subject
  ... mainly programming

Safety & Facilities

• This building is PIN access controlled
  – You have been allocated an individual PIN number
  • This only allows you in the main Jones St entrance
  • Sorry, the Wattle St entrance & lifts are closed on Sat.

• Fire exits are near the front & rear entrances of this room.

• Toilets are behind the lifts

• Tea & Coffee facilities
  – On level 2, room 10.2.260 (use your PIN to access)

Contacts

• Instructors:
  – Chris Wong (coordinator)
    (02) 9514 7938 (mon, wed, thu) chris.wong@uts.edu.au
  – Sverre Kvaale: sverre@kvaale.com
  – Kevin Lee: kevin.feit.uts@gmail.com

• Email is the preferred method of contact

Let’s introduce ourselves...

• Your Name?

• Experience with Java? Experience in IT?

• Why are you doing this course? Your objectives?

• Any special requests?
Objectives

• **Primary objective:**
  - “Implement a medium sized web application incorporating multiple data sources, transaction integrity, data and application security for more than one front-end delivery mechanism”

• **Other objectives:**
  - describe, conceptually, a full e-commerce application
  - describe components of multi-tier web application
  - describe robustness, availability, security features
  - explain transaction concepts
  - introduce security features
  - compare and contrast web application architectures
  - recommend solution for arbitrary web application

Pre-requisite knowledge

**Good Java programming skills !!**

- This subject will *not* teach you how to program in Java

- This subject *will* introduce you to various Java class libraries, but it will still be largely up to you to apply that knowledge in the context of a Java application

Pre-requisites (cont)

- Java skills should include using CLASSPATH and packages

- You should know how to write HTML and should be able to create a basic web site with a Form.

- You should know some basic Unix skills
  - Editing documents (vi or gedit etc)
  - Using bash shell, setting environment variables
  - We use RedHat Linux, Fedora Core.

Text book


- This book covers MORE than the course
  - J2EE 1.4 is covered
  - Web Services
  - Some Open source enterprise tools
    - Ant
    - JUnit/Cactus
    - Struts
    - Hibernate

Topics

- Web Application Design Issues & Principles
- Servlets
- Java Server Pages (JSP)
- Database Connectivity (JDBC)
- Java Persistence (JPA)
- Enterprise Java Beans (EJB) x 2
- XML and Web Services
- Security
- Transactions
- Dealing with Legacy Systems
- Design Practices in enterprise applications

Rough Schedule

- This schedule is flexible to suit the pace of the participants:

  07th May: Intro, Architecture, Servlets
  14th May: JSP, JDBC, JNDI
  21st May: EJB
  29th May: EJB (cont.), XML
  04th June: XML, Web Services
  11th June: Break for Queens Birthday Long Weekend
  18th June: Security, Transactions, Legacy
  25th June: Design & conclusion
How we will do it

- Each week will focus on a different aspect of building an enterprise system
- Lecture will highlight important features
  - Does NOT cover everything
  - Private reading/practise is essential!
- Labs → practical exercises ← do in class time
- Tutorials → (mostly) practical ← do in your own time

How we will do it

- Labs are where most of the learning will happen
- We use Oracle WebLogic Server on Linux
  - Some early labs to familiarise you with WebLogic & Eclipse
  - Later labs and assignments all use WebLogic
- We will use Eclipse to develop and deploy code
  - we use Oracle Enterprise Pack for Eclipse (OEPE)
- We use Oracle 10i database server
  - Oracle 10i client installed on the workstations

Lab arrangements

- Use Linux workstations in Room CB10.2.340
  - these are fast workstations, 4Gb memory
  - You need to login with the “Default session”
  - Windows XP can run in VMware
- You can use lab workstations remotely
  - for doing labs from home, etc.
- You can install WebLogic at home or laptop
  - (Windows & linux versions are available)

Our configuration

- Use the website
  - http://learn.it.uts.edu.au/aip
  - Announcements, news and questions/answers will be listed there.
  - See also the FAQ, software, machines menu items
  - Be aware that course notes and lab materials will be updated if necessary during the semester...

Acknowledgements

- Developed with the assistance of:
  - Dr Wayne Brookes UTS
  - Gavin Hughes, Java and Internet development consultant
- Development originally funded by Skillsearch Computing Pty Ltd
- Software supplied by BEA Systems under the BEA University Program