Software Reuse Lecture 01

Course Introduction

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Course Language

- Slides are in English
  - Speaking in Portuguese
- Exams are in Portuguese
  - You may answer in English if you wish
- Exercise, group work, final project, etc. might be in English or in Portuguese
  - You can answer either in English or in Portuguese as you wish

Bibliography (many)

- P. Clements, L. Northrop. **Software Product Lines: Practices and Patterns**. Addison-Wesley, 2001.
- I. Sommerville. **Software Engineering**, 9a. Ed., 2011.
- R. Laddad. **AspectJ in Action**. 2nd Ed. Manning, 2010.
- S. Mellor, K. Scott, A. Uhl, D. Weise. **MDA Distilled**. Addison-Wesley, 2004.
- K. Pohl, G. Bockle, F. Linden. **Software Product Line Engineering: Foundations, Principles and Techniques**. Springer, 2005.
- C. Szyperski, **Component Software: Beyond Object-Oriented Programming**, Addison-Wesley, 1998.
- Research papers... etc.

Assessment Criteria

- Undergraduate Students
  - 1st exam: 30 points
  - 2nd exam: 30 points
  - Group Work: 20 points
  - Exercises: 10 points
  - Participation in papers: 10 points

Assessment Criteria

- Graduate Students
  - 1st exam: 15 points
  - 2nd exam: 15 points
  - Group Work: 10 points
  - Exercises: 10 points
  - Paper presentation: 5points
  - Participation in papers: 5 points
  - Final Project: 40 points

Tentative Dates

- 1st Exam
  - 17 of September
- 2nd Exam
  - 12 of November
- Group Work (GW)
  - Oral Presentation: 20/10 and 22/10
  - Final delivery: 14 of November (by email)
- Final Project (Graduate Students)
  - Oral Presentation: 03/11 and 05/11
  - Final delivery: 30 of November (by email)

Dates may change

Group Work (GW)

- Groups of up to 4 members
  - No more than two graduate students
- Tasks
  - To implement a software system applying reuse strategies (we will see in the course)
  - To write a short report about the work
  - To present the results for your classmates

Final Project (Graduate only)

- Graduate students must do it alone
- Tasks
  - To investigate a topic related to software reuse (research)
  - To write a short report with up to 15 pages (similar to a paper; i.e., it does **no** need cover, table of contents, list of figures, etc.)
  - To present the results for your classmates

3rd Exam (optional)

- The 3rd exam is allowed to students with at least 40 points (sum of all activities)
  - It replaces 1st or 2nd exam
  - 15 pts (Graduate) or 30 pts (Under)
  - Expected Date: 19 of November
- Which lectures to study?
  - If it replaces 1st exam: Lectures 1 to 14
  - If it replaces 2nd exam: Lectures 15 to 28

Laboratory

- Sometimes, we may have lectures in laboratory
  - Booked: ICEx 2012
- The first time we expect to go to lab is in 25 of August
  - If you arrive in class and nobody shows up, go to the laboratory

Course Website

- All course material and agenda are available in the course website
  - Link “Teaching (pt)” in my webpage

http://www.dcc.ufmg.br/~figueiredo/disciplinas

- Email: **reuso.software@gmail.com**

Online Course at Udemy

- Some contents from last year
  - http://www.udemy.com/software-reuse-ufmg/
- Some video lectures available
  - Audio from another course (in Portuguese)
- Forum for reuse-related discussion
- Quizzes may help you to review the course contents

Topics for the 1st Exam

- Introduction to Software Reuse
- Patterns: Design, Architecture, and Idioms
- Software Product Lines (SPL)
- Aspect-Oriented Software Development (AOSD)

Topics for the 2nd Exam

- Component-based Software Engineering (CBSE)
- Feature-Oriented Programming (FOP)
- Model-driven Development (MDD)

Preliminary Agenda

1. Course Introduction
2. Techniques for Software Reuse
3. Reuse in POO and Design Patterns
4. Architectural Patterns
5. Programming Idioms
6. Software Product Lines
7. **Exercise**

Agenda Preliminar (Parte A)

8. GW: Software Engineering Education
9. **Exercise**
10. Aspect-Oriented Programming
11. **Paper Presentation**
12. **Exercise**
13. Review to 1st exam
14. **1st Exam**

Agenda Preliminar (Parte B)

15. **Exercise**
16. **Paper Presentation**
17. Component-based Software Engineering
18. **Exercise**
19. Feature-Oriented Programming
20. **Paper Presentation**
21. Feature-Oriented Programming
22. **Paper Presentation**

Agenda Preliminar (Parte B)

23. **Group Work: Oral Presentation**
24. **Group Work: Oral Presentation**
25. Model-driven Development
26. **Final Project: Oral Presentation**
27. **Final Project: Oral Presentation**
28. Review to 2nd exam
29. **2nd Exam**
30. **3rd Exam (optional)**

Next Lecture

- Introduction to Software Reuse
- Bibliography
  - Ian Sommerville. Software Engineering, 9th Edition. 2011. (Chapter 16)