

Software Engineering

General Information
v1.1

Uwe Gühl



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Administrative

219498: Software Engineering

- Lecturer

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- Lecture documentation:
 - <http://mike.cpe.ku.ac.th/~uwe>
 - Office hours: on demand



What we are talking about

- Software Engineering
- Topics
 - Software-Development Processes
 - Object oriented Software Development
 - UML
 - Design Patterns



What we are talking about

- Courses – Time Schedule
 - Class will take 15 weeks
 - begin on the 1st week of November 2007, and
 - ends beginning of March 2008
 - 3 hours a week
 - every Wednesday from 9:00 am to 12.00 am E203
 - Practice: 1 hour per week – free dates



Basic Literature

- Erich Gamma, Richard Helm, Ralph Johnson, John Vlissides, „Design Patterns - Elements of Reusable Object-Oriented Software“ [GHJV95]
- Eric Freeman, Elisabeth Freeman, “Head First Design Patterns” [FF04]
- Additional (German)
 - Bernd Oestereich: Analyse und Design mit der UML 2.1 - Objektorientierte Softwareentwicklung [Oes06]
 - URL: <http://www.oose.de>
 - Jeckle, Mario, Chris Rupp, Jürgen Hahn, Barbara Zengler, Stefan Queins: „UML 2 glasklar“ [JRH04]



Basic Literature

- The documentation is based on a collaboration between Volker Wurst, Florian Unger and me – we developed the basic lectures together for the Berufsakademie Stuttgart, Germany.
- Parts of their documentation are integrated in this course, original source (in German):
 - <http://www.ba-stuttgart.de/~vwurst/>
 - <http://www.ba-stuttgart.de/~funger/>



General idea

- Combining theory with practice – Working as a Study Group [Ker00]
- Establishing of Teams, each Team chooses Design Pattern to present
- Homework
 - 2 times each team: Presentation of a Design Pattern to all!
 - 5 times: Individual homework, e. g.
 - Creation of specification
 - Development of use cases
 - Clarification of terms



Scoring (1/2)

- The score of the course will be calculated like this:
 - 50 % Group work
One score will be given to each member of a group
Base for the score for the group work are
 - Presentations of a Design Pattern given to the course
 - Documentation covering the working results
 - 50 % Individual
Base:
 - Final examination at the end of the course (45 %)
 - Homework (5 %)



Scoring (2/2)

- That's why the **main goal** of each group is:
 - Presentations of a Design Pattern given to the course - Please keep in mind: We would like to learn!
A typical presentation should content:
 - Design Pattern description
 - Example – When where to use (including code!)
 - Task to the students – Prepare an exercise you like!
 - Discussion: Advantages, disadvantages, pitfalls, tricks, ...
 - Documentation covering the working results:
Should contain the Design Pattern description and all the stuff presented to the students



Literature (1/2)

- [AIS+77] Christopher Alexander, Sara Ishikawa, Murray Silverstein, Max Jacobson, Ingrid Fiksdahl-King, and Shlomo Angel. *A Pattern Language*. Oxford University Press, New York, 1977.
- [Che76] Chen, P. P.: *The Entity-Relationship Model: Toward a Unified View of Data*. ACM Trans. on Database Systems 1, Seiten 9–36, 1976.
- [Coc07] Cockburn, Alistair: URL: <http://www.usecases.org>, (verified 29/10/07)
- [Coo98] James W. Cooper: *The Design Patterns Java Companion*.
<http://www.patterndepot.com/put/8/JavaPatterns.htm>, 1998, (verified 29/10/07)
- [FF04] Eric Freeman, Elisabeth Freeman: *Head First Design Patterns*, O'Reilly, 2004
- [FPB95] Frederick P. Brooks, Jr.: *The Mythical Man-Month*. Addison-Wesley, 1995.
- [GHJV95] Erich Gamma, Richard Helm, Ralph Johnson, John Vlissides: *Design Patterns - Elements of Reusable Object-Oriented Software*, 1995
- [Hel94] Hellmuth, Thomas W.: *Datenmodellierung zur marktgerechten Führung der Produktionsbereiche*. B. G. Teubner Stuttgart, 1994.
- [Hes01] Wolfgang Hesse: *Dinosaur meets Archaeopteryx? Seven Theses on Rational's Unified Process (RUP)*. Proc. CAiSE'01/IFIP 8.1 Int. Workshop on Evaluation of Modeling Methods in System Analysis and Design (EMMSAD'01), Ch. VII, Interlaken 2001.



Literature (2/2)

- [JCJO92] Jacobsen, Ivar, Magnus Christerson, Patrik Jonsson und Gunnar Overgaard: *Object-Oriented Software Engineering. A Use Case Driven Approach*. Addison-Wesley, 1992.
- [JH02] Jerala, Slobodan; Holl, Matthias: *Use-Cases in der Praxis*, OBJEKTSpektrum, Seiten 29-33, Ausgabe 4, 2002
- [Joh92] Ralph Johnson. *Documenting frameworks using patterns*. In Object-Oriented Programming Systems, Languages, and Applications Conference Proceedings, pages 63-76, Vancouver, British Columbia, Canada, October 1992, ACM Press
- [JRH04] Jeckle, Mario, Chris Rupp, Jürgen Hahn, Barbara Zengler, Stefan Queins: *UML 2 glasklar*. Carl Hanser Verlag München Wien, 2004
- [Ker00] Joshua Kerievsky: *A Learning Guide To Design Patterns*,
<http://www.industriallogic.com/papers/learning.html>
- [Oes06] Bernd Oestereich: *Analyse und Design mit der UML 2.1 - Objektorientierte Softwareentwicklung*, 8. aktualisierte Auflage, 2006, 378 Seiten, Oldenbourg Wissenschaftsverlag
- [Pil96] Pillai, K.: *The Fountain Model and its Impact on Project Schedule*. ACM SIGSOFT Software Notes, 21(2): 32–38, March 1996.
- [Pol07] Pols Consulting: „Use Case Zone“, URL: <http://www.pols.co.uk/use-case-zone> (verified 29/10/07)
- [Rac95] Raccoon, L. B. S.: *The Chaos Model and the Chaos Life Cycle*. ACM SIGSOFT Software Notes, 20(1):55–66, January 1995.
- [Rat] Rational Software Corporation: *Rational Unified Process 5.5*
- [Rei06] Donald J. Reifer: *Software Management, Seventh Edition*, IEEE computer society, 2006
- [Roy70] Royce, Winston W.: *Managing the Development of Large Software Systems: Concepts and Techniques*. In: WESCON, Band 14, Seiten A/1–1 – A/1–9, 1970. Western Electronic Show and Convention, Los Angeles, Aug. 25-28, 1970.