Summer Semester 2015

Software Engineering Design & Construction

Dr. Michael Eichberg
Fachgebiet Softwaretechnik
Technische Universität Darmstadt

Organization

The goal of this lecture is to teach you fundamental software design principles that will foster your understanding of the intricacy when designing and developing software. It will help you to become a better software engineer.

Main Topics

- Understanding Software Design and Development
- Software Design Principles
- Software Design Patterns
- Advanced Programming Language Features

Goals of the Lecture

- To be able to produce “good” designs; i.e. to produce code that is – among others – reusable, maintainable, comprehensible.
- To learn to judge the design of existing pieces of software.
- To get familiar with advanced programming language features and to learn when to apply them.
- To get a deeper and thorough understanding of design patterns.
- To understand the relation between software design and programming languages/
  To understand why improvements of programming languages are important/
  To understand programming language concepts w.r.t. supporting high-level design.

After successfully completing this lecture you should be able to develop software that is well designed and which uses (advanced) programming language features to support the design.

Organization

Final Exam

- We will have a written exam at the end of July, 2015.
- The exam will take 90 minutes.
  The questions have to be answered in English.
- It will be an open-book exam.

Organization

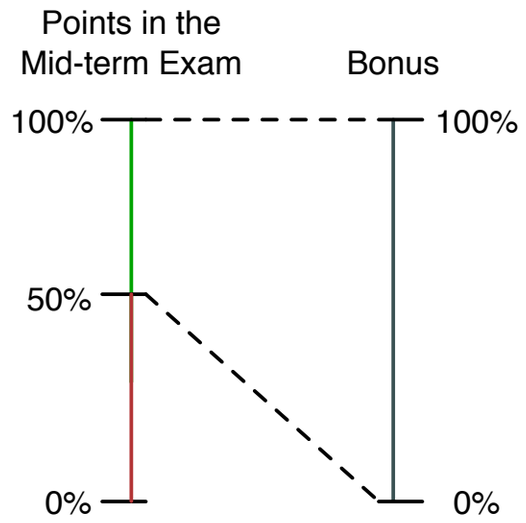
Exercises

- We will have approx. 10 exercises
- The exercises are not graded!
- We will discuss the solution to each exercise one or two weeks after presenting it.
- You are allowed to submit one exercise to get it corrected by a tutor. The tutors will have two office hours each to help you with the exercises.

Organization

Mid-term Exam

- The mid-term exam is optional.
- By passing the mid-term exam you will get a bonus for the final exam. The maximum bonus is equivalent to the number of exam points needed to get a full grade better (e.g., 2,0 → 1,0).
- The bonus cannot be used to pass the final exam.



Organization

Mid-term case study on reative programming

- We may have a mid-term case study on reactive programming that may be graded.
- If it is graded it may help you to improve the bonus you got as part of the mid-term exam.