

Lesson 1 Introduction

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(Slides by Andreas Sjögren)

Lesson overview

- Introduction
- Software Engineering and modeling
- UML
- Tools
- Lessons and assignments, detailed overview

Purpose and contents

- Purpose
 - Repetition and examples of concepts from the lectures
 - Basic UML knowledge
 - Preparation for the project
 - Method, notation and tool
- Contents
 - Modeling requirements, with UML
 - Modeling design (and architecture), with UML
 - Configuration management and tools
 - Project preparation (introduction to the project work)

Overview

- Lessons
 - Once a week, Tuesdays 13:15 v261
 - Approximately 40-60 minutes
- Assignments
 - Small assignments to provide training in modeling and different UML techniques (1 course point)
 - Groups of 1-2 students
 - Computer room v408 scheduled 8h on Fridays
 - Sorry, no assistant present

Assistants

- Different from week to week:
 - Rikard Land, room 373, rikard.land@mdh.se
 - Johan Fredriksson, room 373, johan.fredriksson@mdh.se
 - Frank Lüders, room 345, frank.luders@mdh.se
 - Mikael Åkerholm, room 372, mikael.akerholm@mdh.se

Course Material (Lessons/Assignments)

- These presentations
- Resources at the course page
 - [index.html](#)
- Optional books:
 - UML Distilled (2nd ed), M. Fowler, Addison-Wesley
 - Unified Modeling Language User Guide, Booch, Rumbaugh and Jacobson, Addison-Wesley

Software Engineering

- “An engineering discipline concerned with all aspects of developing high quality software, from early stages of ideas and specifications, through maintenance, and finally retirement of the software”
- The primary goal of software development is to produce high quality software, that satisfies evolving needs, everything else is secondary (but not irrelevant!)

Modeling

- Model
 - A simplification or an abstract description of the reality
- The purpose of models:
 - Communicate desired structure of software
 - Visualize and control architecture
 - Correctness
 - Exposing opportunities for simplifications and reuse
 - Manage risks

The Unified Modeling Language (UML)

- A mainly graphical modeling and specification language
- Developed from 1995, since 1997 a standard managed by OMG
- Object Oriented
- An industry standard
- Recently version 2.0
- See <http://www.uml.org>

UML

- Unified
 - Combination of different modeling languages, Booch, OMT, and OOSE
- Modeling
 - Visualization
 - Specification
 - Construction
 - Documentation
- Language
 - Common Vocabulary
 - Syntax and Semantics

Method, Process, Modeling language

- Software Development Method
 - Consists of a modeling language and a process
- Development Process (model)
 - Describes the major activities, as series of steps to take
- Modeling Language
 - A (graphical or textual) notation that a method uses to express requirements and design

Building blocks in a UML model

- Things
 - Main construct
 - Denoting physical or abstract elements, like classes, interfaces, etc
- Relationships
 - Connections between things
- Diagrams
 - Groups of interesting collections of things which captures different aspects of a model
 - Easy to overestimate the importance of the diagrams

Reporting of assignments

- Mail the lab assistant (see course page), with CC to me (Rikard)
- Name your files and mails properly (see course page)
- Every assignment should have a short additional textual description
 - On a higher level than the diagram, or explaining important details, not just a translation! Explain "why".
- Deadline: the day of the next lesson (for A2: 27 Jan, 23.59)
 - You have opportunity to get help by me after that lesson
- Assignments and more instructions available from the course page: www.idt.mdh.se/kurser/cd5360/04/labs

Assignment 1

- [se04-a1.html](#)