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IT4490 - SOFTWARE DESIGN AND CONSTRUCTION

0. INTRODUCTION TO COURSE



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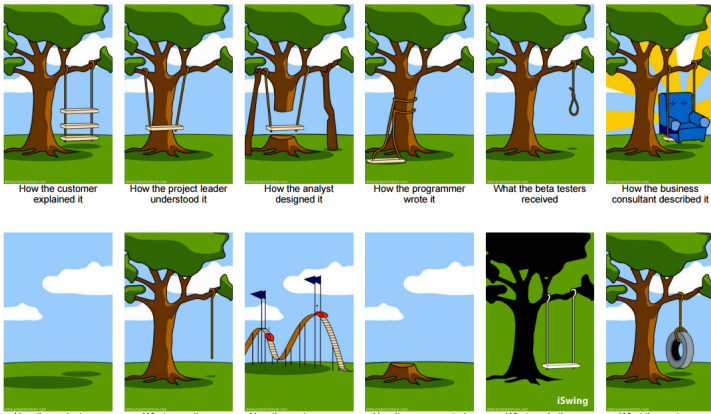
Lecturer

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What is the real software to be built?



How the customer explained it

How the project leader understood it

How the analyst designed it

How the programmer wrote it

What the beta testers received

How the business consultant described it

How the project was documented

What operations installed

How the customer was billed



How it was supported

What marketing advertised

What the customer really needed

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Alan Perlis  Epigrams 

- It is easier write an incorrect program than understand a correct one.
- Most people find the concept of programming obvious, but the doing impossible.
- To understand a program you must become both the machine and the program.
- There are two ways to write error-free programs; only the third one works.

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Course objectives

- Design effective program structures with
 - appropriate modularity
 - separation of abstraction and implementation concerns
 - use of standard design patterns
 - use of standard libraries/frameworks
- Use modern programming languages effectively
 - type systems, objects and classes, modularity
 - identity and equality, exceptions and assertions
- Gain experience with contemporary software tools
 - integrated development environments (IDE)
 - test frameworks, debuggers, version control
 - documentation processing tools

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Programming language/tools

- Software design tool: Astah
 - Free for students
- Programming language: Java
- IDE: Eclipse
- Version control: Bitbucket
- Test framework: JUnit



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Assessment

- Mid-term score:
 - Homework
 - Final Project
 - Work in groups, but individual score
- Final score
 - Final Project
 - Exam

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Text books

- [SW-Design] D. Budgen. *Software Design, 2nd Edition*. Addison-Wesley. 2004.
- [OO-Design] Cay Horstmann. *Object-Oriented Design and Patterns*. John Wiley & Sons, Inc. 2006
- [PRAG-Prog] Andrew Hunt and David Thomas. *The Pragmatic Programmer*. Addison-Wesley, 2000.
- [JAVA-Eff] Joshua Bloch. *Effective Java, 2nd ed.* Addison-Wesley, 2008
- [TESTING] Boris Beizer. *Software Testing Techniques, 2nd Edition*. International Thomson Computer Press

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Course Materials

- Lecture notes for students (pdf): Slides in 4-page handouts
- Assignments
- Project descriptions
- Announcements...
- Interaction channels:
 - Facebook group
- <https://bitbucket.org/account>
 - Add to your project member: dattt-student (dattt.student@gmail.com)

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Naming convention

- Naming your project and description
 - TKXDPM-KHMT-K62C-01
 - TKXDPM-KHMT-K62C-02
 - TKXDPM-KHMT-K62C-03
- ICT1.K62S.20201-01
- ICT1.K62S.20201-02
- ICT1.K62S.20201-03

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Introduce yourselves

- Full name
- Experience in Computer Science
 - Operating System
 - Programming Languages
 - (Mini-)Projects
 - ...
- Strength and Weakness
- A course you like best and hate
- Desire to study in this course



About Me

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