

Paper Sessions

Software Evolution

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Writing

- Why do we write papers? masters theses?
- Who likes to write?
- Why is writing hard?
- How can it be interesting and fun?
- How can you write better?

Exercising your skills

- These sessions are about exercising
- Making mistakes! Learning.
- Feedback from us and yourselves
- Step-by-step towards a paper draft

Four sessions

- Today is Session 0
- Session 1:
 - writing paragraphs
 - short annotated bibliography
- Session 2:
 - argumentation schemes
 - argumentation fallacies
- Session 3:
 - writing the argumentation
 - composing a draft

Grading

- You bring work to each session
- You improve the work during this session
- You get a sufficient/insufficient +/- feedback
- After Session 3, a paper is “composed” from the previous results with grade 7
 - +/- 1 point for readability of paragraphs
 - +/- 1 point for convincing argumentation
 - + 1 optional point for creativity, new insights, new facts
- Bandwidth 5-10, 1/3 of your Evolution grade

Prepare for next session

- Just read (don't memorize) from Blackboard:
 - Ch 4 from “Academic Writing in English”
 - Ch 1,3,4,5,6 “Spring into Technical Writing”
- Choose a topic (see next slides)
- Write a motivation for the topic (max 1/2 page)
- Less is more! but minimum = 5 sentences.

Paragraphs

- What is the difference between a good and a bad paragraph?

Paragraphs

- Does it matter what kind of text you are writing?

Quality aspects

- Language: has to be correct, and simple.
- Logic: does it make sense?
- Structure: is it well organized?
- Flow: is it easy to digest?

Topics!

- Choose from:
 - Metrics
 - Clones
 - Design patterns

Metrics

- “The McCabe Cyclomatic Complexity metric does [not] measure understandability of source code”
- Argue either for or against
 - stay to the truth and logic
 - understand context, circumstances
 - use literature

Metrics: literature

- McCabe. A Complexity Measure. IEEE Transactions on Software Engineering Vol. 2, No. 4, p. 308, 1976
- Jurgen J. Vinju and Michael W. Godfrey. What Does Control Flow Really Look Like? Eyeballing the Cyclomatic Complexity Metric. International Working Conference on Source Code Analysis and Manipulation. 2012
- A.J. Albrecht. Software Function, Source Lines of Code, and Development Effort Prediction: A Software Science Validation. IEEE Transactions on Software Engineering. Volume 9,6. 1983
- J. Rosenberg. Some Misconceptions About Lines of Code. METRICS '97 Proceedings of the 4th International Symposium on Software Metrics

Clones

- “Code clones are harmful for maintainability”
- Is this really true? Pick a position!
- Literature:
 - C. Capser, M. W. Godfrey. "Cloning Considered Harmful" Considered Harmful. WCRE '06 Proceedings of the 13th Working Conference on Reverse Engineering. 2006.
 - DiPenta et al. An empirical study on the maintenance of source code clones. Journal of Empirical Software Engineering 2010.
 - Inoue et al. CCFinder: a multilinguistic token-based code clone detection system for large scale source co

Design patterns

- “The Visitor design pattern is better for maintainability than the Interpreter design pattern.”
- Understand out precisely what these patterns are and why they are inter-changeable
- Choose which way you want to argue, come to a balanced conclusion at the end (under which circumstances which may be true).

Literature

- Mark Hills, Paul Klint, and Jurgen J. Vinju. A case of visitor versus interpreter pattern. In Proceedings of the 49th International Conference on Objects, Models, Components and Patterns, TOOLS, 2011.
- Jeanmart et al. Impact of the visitor pattern on program comprehension and maintenance
- L. Prechelt, B. Unger, W. F. Tichy, P. Brossler, and L. G. Votta. A Controlled Experiment in Maintenance Comparing Design Patterns to Simpler Solutions. IEEE Transactions on Software Engineering, 27(12):1134–1144, 2001.

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Announcement Lab

- Who has started Series I?
- Lab is designed with presence in mind.
- Subscribe to advanced track if you want to learn more

Announcement Thesis Fair

- Important preparation sessions
 - November 16 13:00-16:00
 - November 23 13:00-16:00
- First steps to choosing a masters thesis project