

Presentation & brief discussion of information retrieval

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Växjö, 29 August 2007

Goals of this talk

- ⇒ Short overview about experimental setup as basis for discussion
- ⇒ Discussion of related questions

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Distinguish

- ⇒ Practical project contributions:
 - Contiguous monitoring of quality using model metrics
 - Allowing trend analysis of quality
 - Goal directed quality improvements
- ⇒ Scientific project contributions:
 - Validation of a Quality Model implemented in the Quality Monitor (model metrics) using accepted quality indicators (validation metrics)
 - Scientific experiment

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Experimental setup

- ⇒ Measuring software quality in two different ways and finding correlation
 - **Model metrics:** derived from source/binary code using Software Metrics and a Software Quality Model (QM – VizzAnalyzer)
 - **Validation metrics:** derived from bug, test, cost information
- ⇒ Following up on measurements over time and looking back into project history

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Correlation

- ⇒ of High Software Quality indicators in:
 - **Model Metrics**, e.g. good structure, documentation, etc.
 - **Validation Metrics**, e.g. few bugs, many passed test cases, few failed test cases and low costs etc.
- ⇒ of Low Software Quality indicators in:
 - **Model Metrics**, e.g. bad structure, documentation, etc.
 - **Validation Metrics**, e.g. many bugs, few passed test cases, many failed test cases and high costs etc.

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Ideal Scenario

- ⇒ Partners record (have recorded) validation metrics
 - bug information (bug tracker)
 - test information (unit and integration test results)
 - cost information (time for a package, how many developers etc.)
- ⇒ Correlated to code (may be in a version control system)

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Questions - discussion

- ⇒ What kind of information is available?
 - Bugs
 - Test data
 - Development costs
- ⇒ What format has this information?
- ⇒ How can the information be accessed?
- ⇒ Can we restore/derive this information from others?
- ⇒ What relevance does it have for the partners?

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Challenge

- ⇒ Model metrics measure the quality for program elements having equivalence classes often in logical components (per class, package, sub-system, system)
- ⇒ Validation metrics measure bugs/tests having possibly other equivalence classes (one test case involves many classes and sub-systems)
- ⇒ Creating a relationship between the two

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