



Assignment 7

RE Tools

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I. Tasks

Individual Tasks

- Read the mandatory items in the reading list
- Prepare two questions about each paper to ask your classmates. These questions can, for example, be about aspects of the paper that are not clear to you, or about your classmate's opinion on interesting aspects.
- Be prepared to give a short summary of each paper in class. This summary should address the following questions:
 - What is the main message of the paper?
 - What are the expected benefits of the proposed method or the paper in general?
 - What are weaknesses of the paper in your opinion?
- Be prepared to answer the questions given below in class

Group Tasks

- Prepare a 15 minutes presentation (5-10 slides) on the theme assigned to your course group and choose two persons from your group to present it.
 - At the beginning of your presentation, relate your topic to the session's topic (as represented by the mandatory reading)
 - Browse/read additional papers and/or web pages where necessary.
- Assume you are a requirements engineering process engineer of a large organization that wants to support their requirements management processes with a tool. Prepare a Focal Point database that allows you to generate the requirements-to-stakeholder traceability matrix produced in Assignment 3 (Traceability and Requirements Evolution).
 1. Define a requirements and a viewpoint module that link together.
 2. Populate the modules with the information you have been working with in assignment 1.
 3. Display the traceability matrix.
 4. Continue exploring the tool. So far you just touched the very surface...
You receive your Focal Point credentials from the assistant. Please try immediately whether you can access Focal Point with your installed Java version by opening your workspace, clicking on Modules -> Elements in the menu, and see whether Focal Point correctly shows a navigation view (one entry Elements (1/0)). If you have Java 1.7 installed, this may cause problems. If nobody in your group can access Focal Point, contact Anne immediately. Focal Point is introduced in [IBM 2009a] and [IBM 2009b]. See also some tips below. Your hand-in is a screenshot of the traceability matrix from step 3.

II. Reading List

Mandatory reading

[Kitchenham 1997] describes and validates a method for systematic tool evaluation. [Farmer 2006] describes a checklist for introducing a new tool to an organization. [Bruckhaus 1996] has evaluated the impact of requirements management tools on productivity.

Theme-specific reading

[Sinha 2006], [Decker 2007]: Tools for Requirements-Centered Collaboration
[Luisa 2004], [Campos 2007]: Tools for Requirements Elicitation and Analysis
[Hoffmann 2004], [Beuche 2007]: Tools for Requirements Management

III. Questions

- What techniques can be employed for evaluating RE tools? How do these techniques compare with respect to efficiency, rigor, and situational fit?
- What are important pitfalls for successful RE tool adoption in a development organization?
- How do requirements management tools affect work efficiency? In which situations do they bring improvements, when not?

IV. Themes for Presentation

Themes will be assigned by the assistant who tutors this course; your group can apply for a theme.

A. Tools for Requirements-Centered Collaboration

How can requirements management tools support collaboration in a software project? How does Wiki-based support differ from support by traditional requirements management tools?

B. Tools for Requirements Elicitation and Analysis

What are the most important tools for the design of graphical user interfaces? What is the influence of the development process on tool choice? What are possible applications of natural language processing in RE? According to [Luisa 2004], is there a market for a CASE (computer-aided software engineering) tool supporting natural language processing? In this market study, which software activities have been perceived as crucial?

C. Tools for Requirements Management

What are requirements for requirements management tools? How does Focal Point satisfy these requirements? What are tool requirements specific for product line requirements management?

References

- Beuche, D., A. Birk, H. Dreier, A. Fleischmann, H. Galle, G. Heller, D. Janzen, I. John, R. Kolagari, T. von der Massen, A. Wolfram (2007). Using Requirements Management Tools in Software Product Line Engineering: The State of the Practice. *11th International Software Product Line Conference (SPLC 2007)*. Kyoto, Japan.
- Bruckhaus, T., N. Madhavji, I. Janssen, J. Henshaw (1996). The Impact of Tools on Software Productivity. *IEEE Software* **13**, 5 (Sep 1996). 29-38.
- Campos, P., N. Nunes (2007). Practitioner Tools and Workstyles for User-Interface Design. *IEEE Software* **24**, 1 (Jan/Feb 2007). 73-80.

Decker, B., E. Ras, J. Rech, P. Jaubert, M. Rieth (2007). Wiki-Based Stakeholder Participation in Requirements Engineering. *IEEE Software* **24**, 2 (March/April 2007). 28-35.

Farmer, E (2006). The Gatekeeper's Guide, or How to Kill a Tool. *IEEE Software* **23**, 6 (Nov/Dec 2006). 12-13.

Hoffmann, M., N. Kuhn, M. Weber, M. Bittner (2004). Requirements for Requirements Management Tools. *12th International Requirements Engineering Conference (RE'04)*. Kyoto, Japan.

IBM (2009a). Rational Focal Point Release 6.4: Technical Overview. *IBM Product Documentation*.

Also available at

http://publib.boulder.ibm.com/infocenter/rsdp/v1r0m0/index.jsp?topic=/com.ibm.help.download.FocalPoint.doc/topics/FocalPoint_63.html. Alternatively, you can use the Help link in Focal Point.

IBM (2009b). Rational Focal Point Release 6.4: Getting started with IBM Rational Focal Point. *IBM Product Documentation*. Also available at

http://publib.boulder.ibm.com/infocenter/rsdp/v1r0m0/index.jsp?topic=/com.ibm.help.download.FocalPoint.doc/topics/FocalPoint_63.html. Alternatively, you can use the Help link in Focal Point.

Kitchenham, B., S. Linkman, D. Law (1997). DESMET: a methodology for evaluating software engineering methods and tools. *Computing & Control Engineering Journal* **8**, 3 (June 1997). 120-126.

Luisa, M., F. Mariangela, P. Inverardi (2004). Market research for requirements analysis using linguistic tools. *Requirements Engineering* **9**, 1 (Feb. 2004). 40-56.

Sinha, V., B. Sengupta, S. Chandra (2006). Enabling Collaboration in Distributed Requirements Management. *IEEE Software* **23**, 5 (Sept/Oct 2006). 52-61.

V. Tips for Focal Point

If you do not see any modules, check whether your Java installation is working properly on java.com/en/download/help/testvm.xml

Tips how to proceed

- Create modules for stakeholders and requirements.
- Create a new attribute for a Requirement that links to the related stakeholders.
- Populate the requirements and stakeholders modules with your data.
- Create a view for each module like described in the Getting Started documentation, , then open one of the views, click the traceability matrix button, and configure the traceability matrix for one view to show the other view as columns (controls at the bottom of the page).