University of Zurich

Requirements Engineering II

Assignment 7

RE Tools

Prof. Dr. Martin Glinz, Prof. Dr. Norbert Seyff, Dr. Eya Ben Charrada, Dr. Emitzá Guzmán

I.   Tasks

Individual Tasks
- Read the mandatory items in the reading list
- Prepare a critique of each mandatory paper. For each paper, we will select a student to present her or his critique orally in class (3-5 minutes). Particular questions to be addressed are:
    - What is the main message of the paper?
    - What are the expected practical benefits?
    - What are the strengths and weaknesses of the paper?
    - What questions do you have about the paper? (prepare at least two questions)
    - What is your personal opinion about the paper? Do you agree or disagree with its findings?
- Be prepared to answer the questions given in Sect. III below in class

Group Tasks
- Prepare a 10-12 minutes presentation (plus 6-8 minutes of discussion) on the theme assigned to your course group (cf. Sect. IV) and choose two students 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.
    - Send your presentation to Norbert after the session to share it with others.

II.   Reading List

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

Theme-specific reading
[Sinha et al. 2006], [Decker et al. 2007]: Tools for Requirements-Centered Collaboration
[Mich et al. 2004], [Campos and Nunes 2007]: Tools for Requirements Elicitation and Analysis
[Hoffmann et al. 2004], [Beuche et al. 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 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 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 [Mich et al. 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? What are tool requirements specific for product line requirements management?

References

D. Beuche, 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.

T. Bruckhaus, N. Madhavji, I. Janssen, J. Henshaw (1996). The Impact of Tools on Software Productivity. *IEEE Software* **13**, 5 (Sep 1996). 29-38.

P. Campos, N. Nunes (2007). Practitioner Tools and Workstyles for User-Interface Design. *IEEE Software* **24**, 1 (Jan/Feb 2007). 73-80.

B. Decker, 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.

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

M. Hoffmann, N. Kühn, M. Weber, M. Bittner (2004). Requirements for Requirements Management Tools. *12th International Requirements Engineering Conference (RE'04)*. 301-308.

B. Kitchenham, 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.

L. Mich, M. Franch, P.L. Novi Inverardi (2004). Market Research for Requirements Analysis Using Linguistic Tools. *Requirements Engineering* **9**, 1 (Feb. 2004). 40-56.

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