SMaRT – Scenario Management and Requirements Tool

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1. Introduction

Requirements elicitation, derivation, refinement, and specification are all very time and effort intensive activities. With effective tool support, the time and effort required for these activities can be significantly reduced. The right tool will also reduce the learning curve for individuals new to Requirements Engineering by simplifying the requirements phase in its entirety. To this end, we will demonstrate the Scenario Management and Requirements Tool (SMaRT). It provides an intuitive web-based interface that supports analysts as they input, manage, view, analyze, and work with scenarios and their associated episodes, requirements, goals, obstacles, and pre- and postconditions. The tool also supports project management functions, and over the course of the next few years it will grow to encompass greater functionality through the implementation of: similarity measures to aid in the automatic identification of probable duplication, syntactic indicators of scenario dependencies, notifiers of probable coverage gaps, procedural guidance for analysts, as well as revision and evolution tracking mechanisms.

2. Demonstration Details

We will exhibit the various features of SMaRT to the Requirements Engineering community through live access to actual SMaRT-generated data as well as by providing hands-on access to the tool to those interested in trying it out for themselves. The tool has been successfully employed in several case studies to date, including the ABB Euronet System [1], a software project management system, and the BellSouth Enhanced Messaging System. Additionally, the system is currently in use in the undergraduate Software Engineering course at North Carolina State University.

This "real-world" data from our studies will make our demonstration not only interesting, but also more realistic and understandable as the presentation of features will be grounded in their use in actual projects.

Our demonstration will engage users by showing them how to use SMaRT to:

- Create project spaces and analyst accounts, and perform other administrative tasks;
- Create Scenarios, Episodes, Goals, etc;
- Create Pre- and Postconditions, Obstacles, etc., and relate them to the appropriate project elements.
- Convert scenarios to episodes and vice versa to better support reuse;
- Specify and edit scenarios, episodes, events, etc. to support reuse, saving analysts precious time;
- View and print scenarios, episodes, and other project data in ways that allow the analysts to comprehend the project specification more fully; and
- Review data from several "real-world" research projects that have used the tool.

In addition to the demonstration of the tool, we will discuss future directions planned for SMaRT development.

3. Relevance

SMaRT has strong theoretical underpinnings based upon years of RE research. There is obvious need for tools that support scenario management [2]. SMaRT is a valuable addition to any RE practitioner's toolbox.

References

[1] T. A. Alspaugh and A. I. Antón. Contrasting use case, goal, and scenario analysis of the euronet system. In *11th IEEE International Requirements Engineering Conference Submitted*, 2003.

[2] K. Weidenhaupt, K. Pohl, M. Jarke, and P. Haumer. Scenarios in system development: current practice. *IEEE Software*, 15(2):34–45, Mar/Apr 1998.

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