Helping Students Learn Requirements Engineering

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Many software engineering courses (and methods) begin with an assumption that software requirements are presented to software engineers in a complete, consistent, feasible, testable, and traceable form, and that the software engineer's main job is to correctly transform the requirements into code. This is generally an unhealthy approach, as the requirements for virtually all significant software products are to some degrees unknown, unknowable, or the results of compromises requiring the software engineer's participation and expertise.

In USC's first-semester MS level software engineering core course, we have been experimenting with case-study and role-playing approaches to learning about software requirements engineering. The role-playing approach involves a Theory W (win-win) interpretation of software requirements as negotiated stakeholder win conditions. Students form three-person teams to role-play as the users, customers, and developers of a software application system (e.g., a library information system or an urban fire dispatching system). They use an experimental groupware requirements engineering support system called WinWin being developed at USC.

The presentation will summarize our experiences in using the approach to-date.

Biographical Data

Barry Boehm, TRW Professor of Software Engineering, Computer Science Department, and Director of the USC Center for Software Engineering.


He worked at TRW from 1973 to 1989, culminating as Chief Scientist of the Defense Systems Group, and at the Rand Corporation from 1959 to 1973, culminating as Head of the Information Sciences Department. He is currently Director of the USC Center for Software Engineering.
Barry's current research interests include software process modeling, software requirements engineering, software architectures, software metrics and cost models, software engineering environments, and knowledge-based software engineering. His contributions to the field include the Constructive Cost Model (COCOMO), the Spiral Model of the software process, and two advanced software engineering environments: the TRW Software Productivity System and the Quantum Leap Environment.

He has served on the editorial boards of several scientific journals, including the IEEE Transactions of Software Engineering, IEEE Computer, IEEE Software, ACM Computing Reviews, and Information and Software Technology. He has served as chair of the AIAA Technical Committee on Computer Systems, Chair of the IEEE Technical Council on Software Engineering, and as a member of the Governing Board of the IEEE Computer Society. His honors and awards include Guest Lecturer of the USSR Academy of Sciences (1970), the AIAA Information Systems Award (1979), the J.D. Warnier Price for Excellence in Information Sciences (1984), the ISPA Freeman Award for Parametric Analysis (1988), and the NSIA Grace Murray Hopper Award (1989). He is an AIAA Fellow and an IEEE Fellow.

Selected publications:

