PRINCETON ACM / IEEE-CS CHAPTERS
MAY 2006 DINNER MEETING

Trustworthy Software Systems

Larry Bernstein

Much software engineering focuses on cost and schedule, especially schedule. This talk will describe how a shift is needed. The software engineer must make judgments or tradeoffs among the features the software provides, the time it will take to produce the software, the cost of producing the software, how easy it is to use and how reliable it is. Not only must software designers consider how the software will perform – they must account for consequences of failures.

Trustworthy software is stable software. It is sufficiently fault-tolerant that it does not crash at minor flaws and will shut down in an orderly way in the face of major trauma. Trustworthy software does what it is supposed to do and can repeat that action time after time, always producing the same kind of output from the same kind of input.

This talk presents principles of requirements engineering for trustworthy software intensive systems-of-systems. A process for getting to a quantitative and feasible set of software feature requirements is the theme. The approach is to deduce a Measurable Operational Value from a customer prospectus, establish feature sets, set priorities using a simplified quality function deployment approach, validate the feature packages with prototypes, and extending the prototypes to models. The talk draws from techniques described in the recently published book, *Trustworthy Systems through Quantitative Software Engineering* (Wiley-IEEE Computer Society Press, 2005).

Larry Bernstein is a recognized expert in network architecture, network management, software technology, project management, and technology conversion. He is Professor of Computer Networks and Software Engineering at Stevens Institute of Technology in Hoboken, NJ. Larry had a 35-year distinguished career at Bell Laboratories in managing large software projects and since retirement heads his own consulting firm. At Bell Labs he became a Chief Technical Officer of the Operations Systems Business Unit and an Executive Director. In parallel with these Bell Labs positions he was the Operations Systems Vice President of AT&T Network Systems from 1992-1996. He is a Fellow of the IEEE and a Fellow of ACM.

The May dinner meeting will be the final ACM/IEEE-CS meeting of the 2005-2006 season. Monthly meetings will resume again in October 2006.

Date:	Thursday, May 11, 2006, 7:00 pm
Place:	Charlie Brown's Steakhouse (formerly Good Time Charley's) 4591 Rt. 27, Kingston, NJ (restaurant phone number (609) 924-7400)
Information:	Rebecca Mercuri (609) 587-1886, Dennis Mancl (908) 582-7086
On-line info:	**http://www.acm.org/chapters/princetonacm**

ADVANCE RESERVATIONS REQUIRED – please fill out and return the form below with your check:

Make my reservation for the annual ACM Dinner Meeting on May 11:

Name: _____ Phone number: _____

Specify menu choice:

- ❑ Prime Rib
- ❑ Chicken Francaise
- ❑ Roasted Red Pepper Basil Ravioli

Dinner includes salad, potato, vegetable, dessert, and coffee/tea

Please make your reservation by May 5.

Send your check for $25 per person and this form to:

PRINCETON CHAPTER OF ACM
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