Lecture 17: Course Retrospective and the Path to Lifelong Learning (Part I)



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CSE403, Summer'05, Lecture 17



Outline

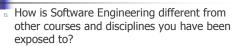
- How this course differs from others
- What this course did not offer
- n My version of the main take-away points

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How Software Engineering Differs from Other Courses



n (List the most important difference in your mind.)

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How Software Engineers Differs ... – My View

- Holistic nature of the discipline
- Making high-level decisions beyond the technical ones - but at least as important
- Few clear-cut answers; mostly good practices
- Larger teams
- Opportunity to propose and work on your own ideas
- n Instructors in the coach role
- n Mistakes along the way are encouraged, not penalized
- n Plans (always) change
- Content topics: software design, testing, project management, etc.

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What Software Engineering Encompasses (revisited)



In contrast to many CS disciplines you have been exposed to,

- this one involves aspects of:

 Computer science (incl. algorithms, data structures, programming languages, tools)
- Business and management (incl. project management, scheduling,
- Economics/marketing (incl. what makes a product sell, niche markets, monopolies)
- Communication (incl. managing relations with stakeholders customers, management, developers, testers, sales)

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 Law (incl. patents, licenses, copyrights, reverse engineering)

 Sociology (incl. modern trends in societies, localization, ethics)

 Political science (incl. topics at the intersection of law, economics, and global societal trends; (public) safety)

 Psychology (incl. personalities, styles, usability, what makes things fun)

 Art (incl. Gut design, what makes things appealing)

 ... more?!

- Hence, the flavor of the discipline is necessarily "softer" and there are fewer clearly right/wrong answers.

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What I Think You Have Gotten out of the Course



- Get exposure to some of the best software development practices in use today
- Learn how to more effectively collaborate with others toward a common goal
- Understand how software is produced from conception to shipping and subsequent maintenance
- Have experience working in a larger team toward a common goal
- Be able to lead an intelligent conversation with expert practitioners in the field of software engineering
- Understand the issues and tradeoffs involved in making decisions as software engineers and project managers

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How This Course Differs from the "Real World" of Software

- What aspects of "real world" software development has this course *not* exposed you to?
 - List the main thing that comes to mind.)

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How This Course Differs from the "Real World" of Software

- Aspects of "real world" software development that this course has not exposed you to
 - Changing requirements
 - Real outside customers
 - Morking full-time on a major software project
 - Working on an existing project with its constraints (i.e., not starting from scratch)
 - People leaving and joining the team partway into a project
 - Monetary compensation

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Effect of the Above Distinctions on Success in the "Real World"

- Solid, tried-out processes become even more important when more unknowns enter the picture.
 - n Otherwise, there is a real chance of chaos.

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The Main Take-Away Points in a Nutshell – My View

- It is all about *risk management*.
 - Requirements gathering, designing, prototyping, incremental releases, testing, code reviewing, refactoring, scheduling, prioritizing, etc.
- The notion that you provide value to your customers
- In all interactions, ask yourself who your audience is and what their expectations are.
- Solid management and communication are crucial to success.
 - n It sounds easy until one experiences it first-hand.
 - Software development is an inherently human activity.
- n Frequent, incremental releases are invaluable.

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One-minute Feedback

- What one or two ideas discussed today captured your attention and thinking the most?
- List any ideas / concepts that you would like to hear more about. Be specific.

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