### CSE403 Section 1:

The Fate of Software Projects
Learning = Practice + Feedback
Desirable Qualities in Teammates
Team-Building Conversations

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#### First, Let's Try the Technology

- <sup>n</sup> In the space below, please write the first name of the person you're sharing a machine with:
- n Now, let them do the same:
- When done, submit using 'Select All' and then 'Send Selection'.

# The Fate of Software Projects in Industry: Question

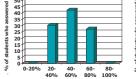
Under some reasonable definition of a "project" (you make it up), what would you guess is the percentage of software projects that fail (i.e., that don't accomplish their goals)?

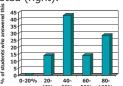
Choose the nearest approximation:

- q 0-20%
- q 20-40%
- **q** 40-60%
- q 60-80%
- q 80-100%

## The Fate of Software Projects in Industry: Answers

Here is how undergraduate students in software engineering (CSE403) voted (left) vs. how graduate students (in CSE590ET) voted (right):





Historically, 85% of software projects fail.

## Chief Reasons for Software Project Failures: Question

What might be the main reasons behind such a large percentage of software project failures?

State one reason that you and the person next to you think is prevalent.

# Chief Reasons for Software Project Failures: Student Answers

- n Other CSE403 students said:
  - Doing something without a clear customer base
  - <sub>n</sub> Competition
  - Changes in the context (funding, priorities)
  - Lack of planning: poor module decomposition, poor risk analysis, lack of knowledge, lack of motivation
  - Entrepreneurial nature of software (unlike other engineering disciplines)
  - Too "rosy" assumptions (about future technology, etc.)
  - Poor communication



#### Chief Reasons for Software Project Failures: Student Answers

- Graduate students (in CSE590ET) stated:
  - Changing of requirements
  - Misunderstanding of requirements
  - Lack of clear specification
  - Over-ambitious goals
  - Original goals were unrealistic
  - Poor understanding of goals
  - Lack of a reasonable & structured software/feature plan
  - Lack of planning
  - Poor planning/research
  - Cost overruns
  - No commercial market for end product
  - Complexity of software



#### Chief Reasons for Software Project Failures: What Professionals Say

- According to most professionals, the majority of software projects fail...
  - **not** because of technical deficiencies or problems
  - but because of underestimating or sometimes even completely ignoring the human aspect, including:
    - <sub>n</sub> the relationship with the customers
    - regular and explicit communication between all stakeholders – managers, developers, testers, marketing, sales, customers
  - Examples:
    - Building a product that no one wants to buy
    - Sabotaging a product (for political reasons) that otherwise may have succeeded



#### Learning = Practice + Feedback



n Feedback:



#### Learning = Practice + Feedback

#### Practice:

- Project work
  - Planning, communication
  - Design, testing, documentation, coding
- Reflective writings
- Providing constructive comments to others

#### Feedback:

- From us
- On project milestones
- On reflective writings During in-class discussions
- From student peers continually + as part of peer reviews
- From programming tools
- From guest lecturers (if you choose to ask them)



### Desirable Qualities in **Teammates**

Mhat would you like your teammates to be?



#### Desirable Qualities in **Teammates**

- Students in previous CSE403 classes said they prefer teammates who were:
  - Motivated
  - <sub>n</sub> Reliable
  - Putting team agenda before personal goals
  - <sub>n</sub> Open-minded
  - <sub>n</sub> Explicit and concise communication
  - <sup>n</sup> Active, showing initiative
  - Flexible (not stuck into original expectations)
  - Organized (good time management)
  - Not necessarily "stars"



### Personal Qualities that Managers Look for in Employees

- <sub>n</sub> Dependable
- <sub>n</sub> Trainable
- <sub>n</sub> Proactive

"Star players" are a red flag!



#### **Team Conversations**

- Necessary to establish shared understanding among teammates.
  - See handout
- <sub>n</sub> What are your team's success criteria?



#### One-minute Feedback

Mhat one or two ideas discussed today captured your attention and thinking the most?



### Questions?

- <sub>n</sub> On homework
- <sub>n</sub> On project
- n On course
- n ...