CS 105: Accountability Game, Security

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Week 5
Logistics

Assignment 1
Spring 2016 Grades: Mean=85, Median=86

Reading

- For today: Ch 8 (software reliability)
- This week and next: Quinn Ch. 7 All (security)
- Online security readings for next week (on schedule)

Goals Today

- Accountability game
- Wrap accountability (whistleblowing)
- Start Computer Crime/Security
Quick Review

Therac-6 vs Therac-20 vs Therac-25

► All bug free?
► Demonstrated one problem with Therac-25: what was it?
► What other problems existed in the machine?
► What should have been done to prevent those problems?
► How should the reports of problems been handled?
Preface

Developing complex systems is risky

**Developers**  How much time should we spend testing X

**Customers**  How much $ should we spend to build X done

Related problems

- Both decisions involve $ and time
- Decisions affect one another

Today, we simulate that situation...
Phase 1 - Self Study (10 Minutes)

- Groups of 4 - Face Value
- Read a scenario
- Become Experts - responsible for this
  - Someone from the group may have to answer Qs on scenario
  - Correct will earn you stars
  - Correct will earn others stars
  - Take notes

Groups of 4

2 8 DRE Voting Machines (p 374)
3 9 Patriot Missile (p 368)
4 10 AT&T Network (p 370)
5 J Tokyo Stock Exchange (p 373)
6 Q Mars Missions (p 371)
7 K Ariane Rockets (p 369)

- 5 minutes of study (open book)
- 5 minutes of discussion (closed book)
Phase 2 - Companies

Company by Suit, Partner Companies by Color

▶ Red Partners
  Heart Health Providers  Hospital
  Diamond Development  Software

▶ Black Partners
  Club Medical  Hospital
  Spade Systems  Software

Sit with you company
I will ask you questions about a scenario

- Within 10 seconds, someone must answer
- Answer all questions right, product passes
- Answer any wrong, product fails

Choose a Strategy

- **Risky** Questions from 6 categories, 2 star reward
- **Safe** Questions from 4 categories, 1 star reward

Simulates: Hire extra expert testers to take care of 2 categories
Phase 2 Hospital (Hearts and Clubs)

Hospitals do not answer questions/write software.

- Rely on partner company

Choose service level - how many questions

- **High**  Software asked 3 questions, 2 star reward
- **Low**   Software asked 2 questions, 1 star reward

Simulates: Demand more/less functionality from software
Rewards

Payout based on whether software passes or fails

**Passes: All Questions Right**

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<tr>
<th></th>
<th>Hosp. Low</th>
<th>Hosp. High</th>
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<tbody>
<tr>
<td>Soft.</td>
<td>Soft: 1 star</td>
<td>Soft: 1 star</td>
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<tr>
<td>Safe</td>
<td>Hosp: 1 star</td>
<td>Hosp: 2 stars</td>
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<td>2 questions</td>
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<td>4 categories</td>
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<tr>
<td>Soft.</td>
<td>Soft: 2 stars</td>
<td>Soft: 2 stars</td>
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<tr>
<td>Risky</td>
<td>Hosp: 1 star</td>
<td>Hosp: 2 stars</td>
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<td></td>
<td>6 categories</td>
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Any question wrong **FAILS**

0 points for both Soft. and Hosp.
Phase 2 - Pick Strategy

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| Soft: 2 stars | Soft: 2 stars |
| Hosp: 1 star  | Hosp: 2 stars |
| 2 questions  | 3 questions |
| 6 categories | 6 categories |

Take 5 minutes, decide as a company

- **Write** company strategy on one paper and hand it to me
- **Include** your company name/suit
- **Do not** reveal your strategy to your partner group
Phase 3 - Testing and Payout

CK asks software firms questions

Black  Spade Systems
Red   Diamond Development
Why did we do this?

What relation did it have to Therac-25?
Participation

Answer me these questions 3

1. Instructions were Clear or Confusing
2. Game was Informative or Useless
3. One sentence describing your impressions

Include your name/NetID on the sheet
Whistleblowing

Personal Ethical Code ≠ Corporate Ethical Code

- What are the costs?
- What responsibility do engineers bear?

Who’s the most famous whistleblower of our day?
Pivot to Security

Issues we want to address in 1-credit class

- Basic idea of how much is visible online
- Identifying fraudulent sites/messages
- Good passwords
- Sensible practices
How does the internet work?

- For web visits
- For mail
- For buying stuff
- From your home wireless
- From a coffee shop wireless
Communication Over an Open Channel

- Has always been hard
- Caesar had a cipher
- Two methods of note today
  - Symmetric encryption
  - Asymmetric encryption
- Demonstrate Symmetric v. Asymmetric
I needed an example of a phishing email.

good day chris . candice explained me this web page --> socialipad3 . com <<<--
is giving away an ipad three to people which are usually at face book for free...almost all these people need is your own opinion about it and u can keep it forever. however u should hurry up just before they close it
The Nigerian Widow scam is not new. The same fraud, known as the Spanish Prisoner scam, was used extensively in the 1920s. The story was that an extremely wealthy man was locked in a Spanish jail, and his family promised riches in gratitude to anyone who helped him escape. Of course, the helper would pay for one failed attempt after another.

– Lawrence Snyder, in Fluency 5, pg 334