ECE/CS 541
Computer System Analysis:
Probability Review I

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ECE/CS 541: Computer System Analysis. Fall 2018. Based on slides provided by Prof. William H. Sanders and Prof. David Nicol.

Slide 1

Learning Objectives

- Or what is this course about?

- At the start of the semester, you should have
    - Basic programming skills (C++, Python, etc.)
    - Basic understanding of probability theory (ECE313 or equivalent)

- At the end of the semester, you should be able to
    - Understand different system modeling approaches
        - Combinatorial methods, state-space methods, etc.
    - Understand different model analysis methods
        - Analytic/numeric methods, simulation
    - Understand the basics of discrete event simulation
    - Design simulation experiments and analyze their results
    - Gain hands-on experience with different modeling and analysis tools

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Slide 2

Announcements and Reminders

- HW0 is posted
  - It is due on **September 04, 2018 @ 11:59 pm**
  - Submit a single pdf to compass2g
- HW1 will be out next Tuesday
  - Covers the probability review
  - Prepare you for the probability quiz
  - Due in ~ 2 weeks

- Probability quiz on **September 20, 2018**
  - First 30 minutes of class

- Project Proposals due near the first week of October
  - Start forming groups and thinking about your projects
  - Come to office hours for discussions

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Slide 3

Collaboration on Homework

- General discussions and ideas regarding homework assignments are encouraged
  - **The work handed in must be your own**

- If you're stuck on something, we have 4 office hours every week
  - Guided discussions
  - Learn how to approach solution
  - No risk of plagiarism

- Cheating and copying will not be tolerated!

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Slide 4

Today's Lecture

- Review of the basic concepts of probability theory

  1. Outcomes of experiments and events

  2. The sample space

  3. Refresher on set algebra

  4. Definition of a probability measure & the probability space

  5. Independence

  6. Conditional probability & Bayes' rule

  7. Example

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Slide 5

Mandatory xkcd
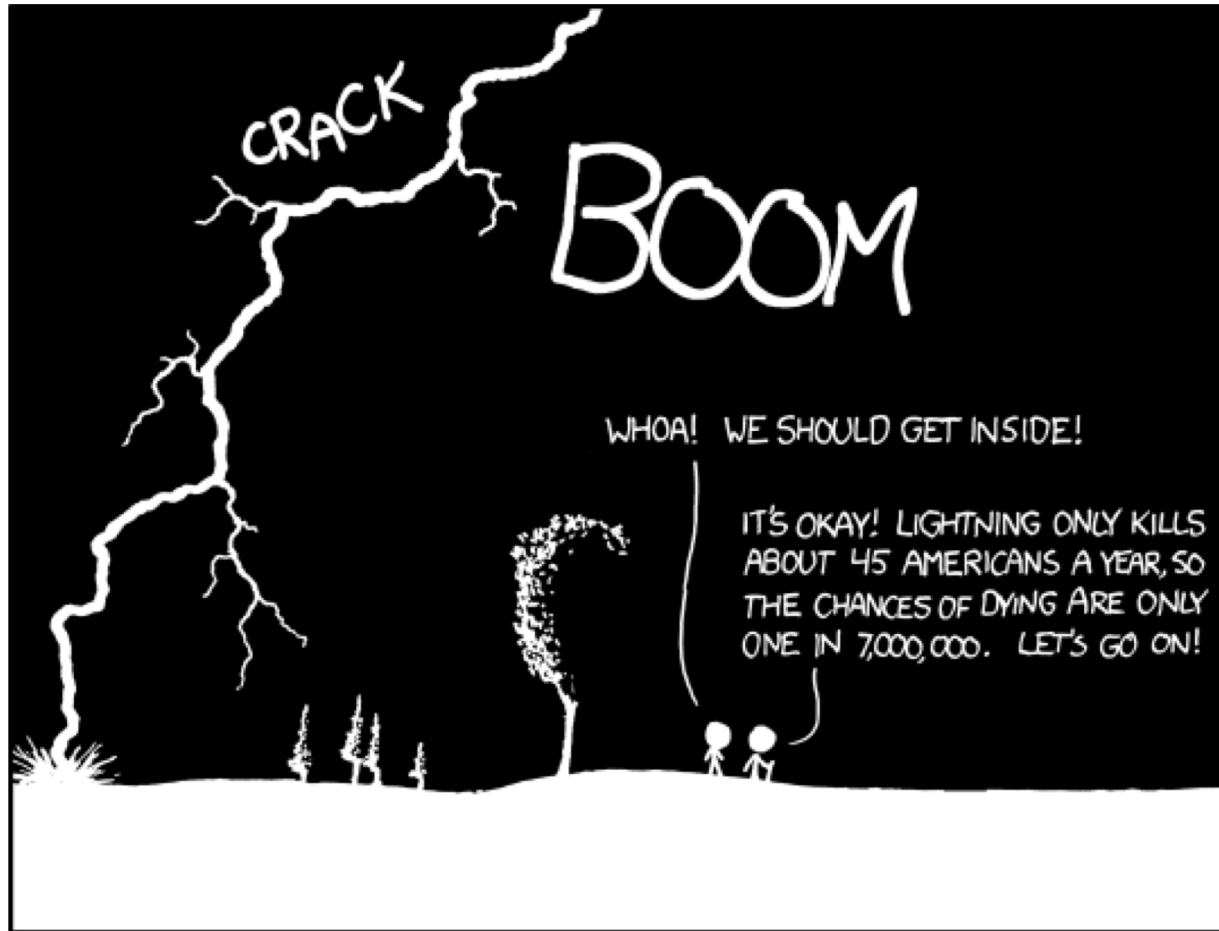
- Title text: "Dude, wait – I'm not American! So my risk is basically zero!"

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Slide 6