Announcements

• Monday, 3/6: Last day of lecture (side channels)
• Wednesday, 3/8: Informal conversation about security, research, industry, etc (meeting in CSE2, smaller room)
• Friday, 3/10: Charlie Reis (Google, Chrome, Site Isolation)
Announcements

• Extra Credit Homework 3 online
  – Part 1: Read (short!) fiction and do security analyses
  – Part 2: Use the “fiction writing process” to explore security + society + people

• Final Project Deadline
  – Was told official final time was Monday, 3/13, 8:30-10:20
  – But I think a Monday morning deadline is difficult
  – Deadline: Wednesday, 3/15, 10:20am
Physical Security

- Relate **physical security** to **computer security**
  - Locks, safes, etc.
- Why?
  - More similar than you might think!
  - Lots to learn:
    - Computer security issues are often abstract; hard to relate to
    - But physical security issues are often easier to understand
- Hypothesis:
  - Thinking about the “physical world” in new (security) ways will help you further develop the “security mindset”
  - You can then apply this mindset to computer systems, ...
Remember This Example?

![Image of a chain and lock](image-url)
Remember This Example?
Physical Security: Adversarial Goals

- **Confidentiality:** adversary should not be able to enter and steal information (e.g., see spy movies, or think about bank computer screens facing windows)

- **Integrity:** adversary should not be able to enter property and remove items, damage items, or place new items (e.g., installing spy device)

- **Availability:** adversary should no be able to deny legitimate entry (denial of service) into an environment (e.g., put superglue in a lock, or gum, or break a wrong key in lock)
Physical Security: Approaches to Security

• Prevention
  – Stop an attack
  – E.g., door locks and fences and bars on windows in physical world environment

• Detection
  – Detect an ongoing or past attack
  – E.g., video camera in physical world environment

• Response
  – Respond to attacks
  – E.g., home alarm system that calls police when entry is detected
Physical Security is Part of Digital Security

- Securing a system involves a **whole-system view**
  - Cryptography
  - Implementation
  - People
  - **Physical security**
  - Everything in between

- This is because “security is only as strong as the weakest link,” and security can fail in many places
  - No reason to attack the strongest part of a system if you can walk right around it.
Brief (Related) Tangent: Social Engineering

- Art or science of **skillfully maneuvering human beings to take action** in some aspect of their lives
  - See, e.g.: “The Art of Deception: Controlling the Human Element of Security” by Kevin Mitnick and William Simon

- Used by:

https://www.smbc-comics.com/?id=2526
Lockpicking

• The following slides will not be online.

• But if you’re interested in the subject, we recommend:
  – Blaze, “Cryptology and Physical Security: Rights Amplification in Master-Keyed Mechanical Locks”
  – Blaze, “Safecracking for the Computer Scientist”
  – Tobias, “Opening Locks by Bumping in Five Seconds or Less”

• Careful: our understanding is that, under current law, possessing lock picks is legal in Washington State, but not everywhere!