CS161 Computer Security Overview
What is Computer Security?
Personal Data & Files
Banking Funds
Personal Privacy
Location Privacy
What is Computer Security?

• Allow intended use of computer systems

• Prevent unintended use that may cause harm
Why Should You Care?

• It impacts your day-to-day life

1.35 billion monthly active users as of Sept. 30, 2014
Why Should You Care?

• It impacts everybody’s day-to-day life
  – Millions of computers compromised
  – Millions of passwords stolen
What Is This Class About?

Learn About Security

Make a Difference
How Can You Make a Difference?

• Be a more security-aware user
  – Make better security decisions

• Be a more security-aware developer
  – Design & build more secure systems

• Be a security practitioner & researcher
  – Identify security issues
  – Propose new security solutions
What Will You Learn in This Class?

• Security vulnerabilities
• How to exploit them & defend against attacks
• Fundamental security concepts & principles
• How to architect secure systems
• Security problems & solutions in application areas
Topics Covered in Class

• Secure coding
• Secure architecture concepts & principles
• Web security
• Cryptography
• Network security & malware
• Mobile security
Course Format
Course Format

Monday

10:00  Discussion 102 LATIMER
10:30  Office Hour (Bill) 411 SODA
11:00  Discussion 185 BARROWS
11:30  Discussion 3111 ETCHEVERRY
12:00  Discussion 102 LATIMER
12:30  Office Hour (Neil) 411 SODA
13:00  Office Hour (Kevin) 651 SODA
13:30  Discussion 102 LATIMER
14:00  Discussion LATIMER
14:30  Office Hour (Arjun) 611 SODA
15:00  Office Hour (Alec) 651 SODA
15:30  Office Hour (Dawn) 675 SODA
16:00  Discussion 102 LATIMER
16:30  Discussion 102 LATIMER
17:00  Discussion 245 LI KA SHING
17:30  Discussion 245 LI KA SHING
18:00  Lecture 245 LI KA SHING
18:30  Lecture 245 LI KA SHING
19:00  Discussion 245 LI KA SHING
19:30  Discussion 245 LI KA SHING
Projects

• 3 Projects
• Hands-on experience for material covered in class
• Done in groups of two
  – Pick partners soon!
Project Schedule

• Project 1: Software Security
  – Out: 2/3, Due: 2/24

• Project 2: Web Security
  – Out: 3/10, Due: 3/31

• Project 3: Network Security
  – Out: 4/14, Due: 5/8
Homeworks

• 3 Homeworks
• Very similar to the problems in the exams
• Done individually
Homework Schedule

• HW 1: Software Security
  – Out: 2/17, Due: 2/26

• HW 2: Security Architecture Principles & Web Security
  – Out: 3/19, Due: 4/7

• HW 3: Crypto & Network Security
  – Out: 4/9, Due: 4/21
Grading

• Homework: 15% (5% each)
• Projects: 45% (15% each)
• Midterm 1 (3/4): 20%
• Midterm 2 (4/29): 20%
• No Final
Other Notes

• Piazza – Primary point of contact
• Course text book – None!
Next Steps

• [http://inst.eecs.berkeley.edu/~cs161/sp15/](http://inst.eecs.berkeley.edu/~cs161/sp15/)

• Identify group partners

• Discussion sections start 1/27

• First project 2/3