

Computer & Network Security

Lecture 9-1

Computers & Society (CPSC 430)

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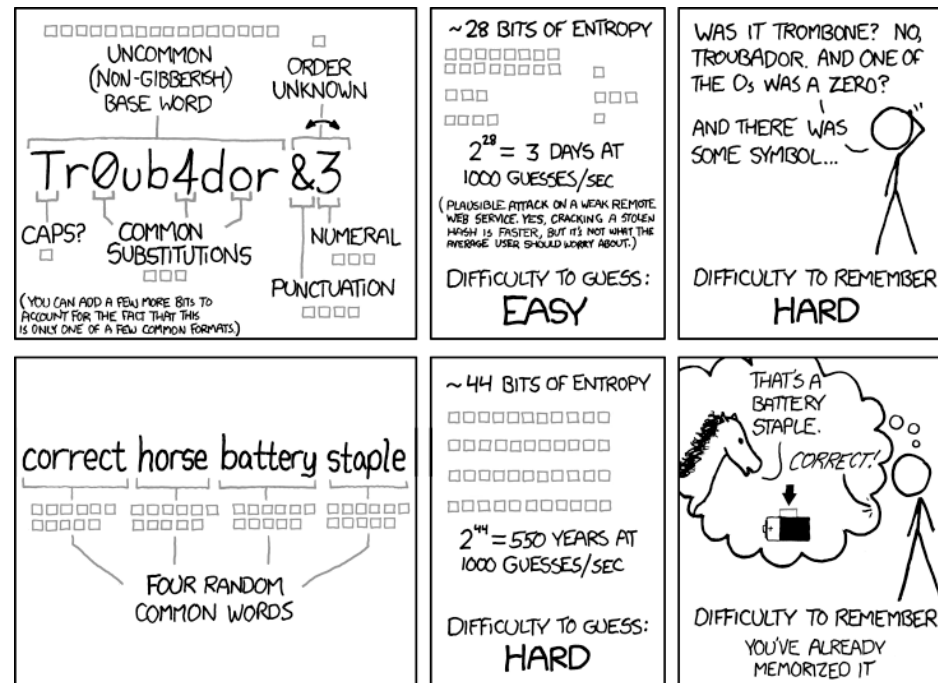
<https://www.students.cs.ubc.ca/~cs-430/>

Original slides by Kevin Leyton-Brown.

Announcements

- Midterm 2 will be next Tuesday in class (no exam at testing center)
- No essay deadline on the day of the midterm exam

Password Strength



THROUGH 20 YEARS OF EFFORT, WE'VE SUCCESSFULLY TRAINED EVERYONE TO USE PASSWORDS THAT ARE HARD FOR HUMANS TO REMEMBER, BUT EASY FOR COMPUTERS TO GUESS.

Hackers

- **Hacker (original meaning):**
 - Explorer, risk-taker, technical virtuoso
 - Values free exchange of information; mistrusts authority; values technical skill; holds an optimistic view of technology
- **Hacker (ultimate meaning):**
 - Teenagers accessing corporate or government computers
 - Stealing and/or destroying confidential information
- What hasn't changed: hackers' public image



Ethics of Hacking

- Parallels between hackers/phreaks & MP3 downloaders
 - Establishment overvalues intellectual property
 - Use of technology as a “joy ride”
 - Breaking certain laws considered not that big a deal
 - (Guess what the police, RIAA thinks about these arguments?)
- *Have you ever hacked anything?*
- *Which, if any, forms of hacking do you consider ethical?*
- *Is it wrong to learn hacking or phreaking skills, if these skills are never put to use?*

Social hacking: Firesheep

- In October 2010, Eric Butler released Firesheep extension to Firefox browser
- Firesheep made it possible for ordinary computer users to easily sidejack other users connected to the same unsecured wireless network
- More than 500,000 downloads in first week
- Big splash and media attention, but no serious harm done (?)
- Early 2011: Facebook and Twitter fixed the vulnerability exploited by Firesheep

Malware: Evil Code that can Run on Your Computer

- **Viruses**

- What is a virus?
- *Have you ever (knowingly) gotten one?*

- **Worms**

- What is a worm? How is it different from a virus?
- *Is it wrong to distribute a virus or worm that doesn't harm anyone?*

- **Trojan Horses**

- What is a Trojan horse? How is it different from the first two?

- *Do the victims of a virus/worm/Trojan horse share responsibility for being attacked if their system is not up to date?*

Malware II: More Evil Code

- **Spyware/Adware**

- What is spyware? What is adware?
- *Is it ever moral to install spyware/adware on a user's computer without their consent?*

- **Drive-by Downloads**

- What is a drive-by download?

- **General-purpose Defensive Measures**

- security patches
- anti-malware tools
- firewalls
- *Anything else?*

Attacks: how mean computers hurt nice computers

- **How:**

- [Spear] Phishing
 - *Have you been targeted? Has an attack been successful?*
- [Distributed] Denial of Service
- Ransomware attacks

- **Why:**

- Cybercrime: professionalization of malware
 - renting botnets (DDoS; spam)
 - stealing credit card numbers, passwords