



# Lecture 18

## Computer and Network Security

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# Participation Quiz

12. Dear Darcy,

My boyfriend only loves himself. He only thinks about himself. He stops and looks at himself when he passes by a store window. He doesn't buy me a gift on my birthday, and he never brings me flowers. And that's not all! He's also very selfish with his things. For example, he never lets me use his cell phone. He says that it is his and he doesn't want me to use it. What should I do?

Q34: What is the woman in this story looking for?

- a. admission
- b. advice
- c. advertising
- d. shame

Q35: Why is the girl's situation strange?

- a. because she is asking for help
- b. because she stays with her selfish boyfriend
- c. because she is selfish, too
- d. because she doesn't have her own cell phone

# 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

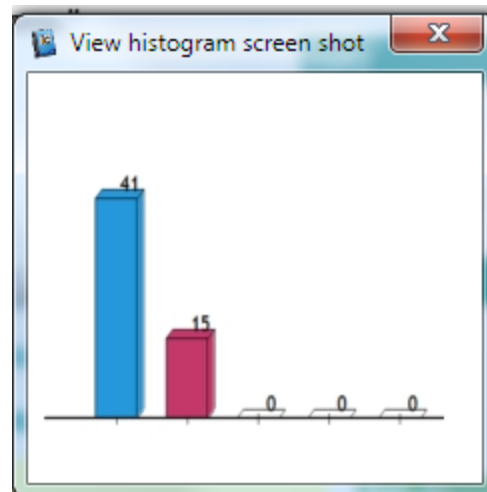
- **Spyware/Adware**
  - What is spyware? What is adware?
  - *Is it ever moral to install spyware/adware on a user's computer without their consent?*
- **Drive-by Downloads**
  - What is a drive-by download?
  - *What do you think the best defenses are against them?*
- **General-purpose Defensive Measures**
  - security patches
  - anti-malware tools
  - firewalls
  - *Anything else?*

# Attacks: how mean computers hurt nice computers

- **How:**
  - **Phishing**
    - *Have you been targeted? Has an attack been successful?*
  - **[Distributed] Denial of Service**
- **Why:**
  - **Cybercrime: professionalization of malware**
    - renting botnets (DDoS; spam)
    - stealing credit card numbers, passwords
  - **Cyberwarfare: states as actors or targets**
    - North Korea vs USA gov, corporate sites (2009)
    - Russia vs Georgia during and after South Ossetia war (2008)
    - Stuxnet (2009-)
    - A variety of government, activist sites during Arab Spring (2011)
    - Anonymous

# Computer and Network Security

“Canadians should have the right to vote online in federal, provincial and municipal elections.”



# Online Voting

- Motivation:
  - More people would vote
  - Votes would be counted more quickly
  - Cost less money
  - Avoid disputed elections like Florida 2000
  - Eliminate ballot box tampering
  - Software can prevent accidental over-, under-voting
- Risks:
  - Gives unfair advantage to those with home computers
  - More difficult to preserve voter privacy
  - More opportunities for vote selling
  - Obvious target for a DDoS attack
  - Security of election depends on security of home computers
  - Susceptible to phony vote servers
  - No paper copies of ballots for auditing or recounts