

Computer & Network Security

Lecture 9-2

Computers & Society (CPSC 430)

Giulia Toti

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

Original slides by Kevin Leyton-Brown.

Electronic Money

- Financial transactions are increasingly moving online
- Advantages
 - easier transactions
 - easier access to credit
 - discourages black market economy
 - prevents businesses from having to carry cash floats
- Disadvantages
 - empowers a few corporations
 - less anonymity
 - security risks
- *Other advantages/disadvantages? What do you think?*

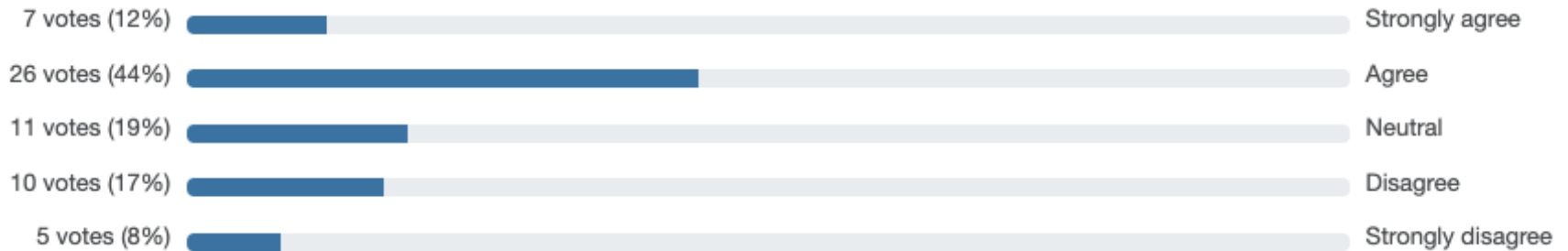
Blockchain

- Distributed ledgers offer an alternative approach to electronic money that works more like cash
- What is:
 - blockchain?
 - mining?
 - what stops someone from spending the same digital money twice?
 - what's an NFT
- But, the currency is incredibly volatile (and, not everyone even agrees that it makes sense to think of it as money)

What do you think? Should governments encourage blockchain-based currencies? Do you use them?

Computer and Network Security

“Canadians should be able to vote online in federal, provincial and municipal elections.”



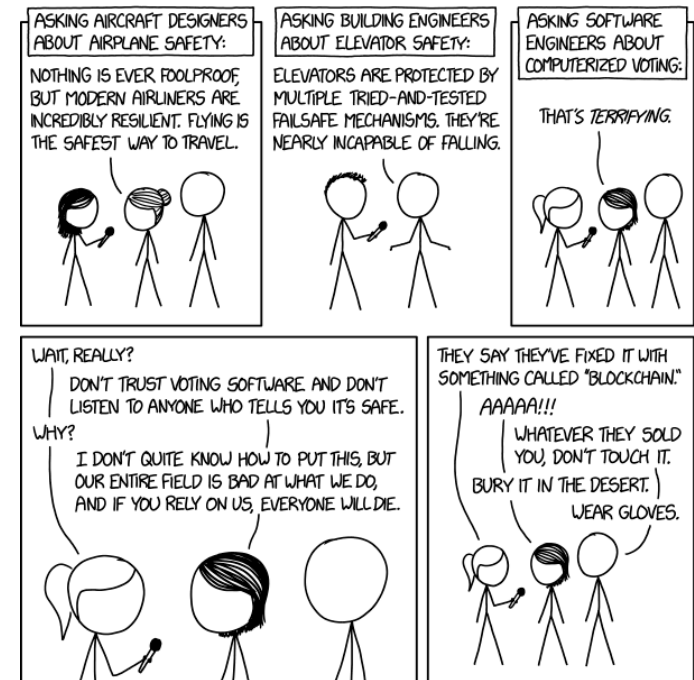
Online Voting

- **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 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, manipulation by foreign governments
- No paper copies of ballots for auditing or recounts
- Reduction in perceived legitimacy of elections even if everything works



Hacking as a means of warfare/foreign policy

- **Cyberwarfare: states as actors or targets**

- North Korea vs USA gov, corporate sites (2009+)
- Russia vs Georgia, Baltic states, Ukraine (2008+)
- Stuxnet (2009+)
- A variety of government, activist sites during Arab Spring (2011)

What hacking/cyberwarfare activities are ethical?

Which are unethical?

What such capabilities should Canada attempt to develop?

What should Canada do to attempt to discourage and/or insulate itself from unethical attacks?