CSE 303:
Concepts and Tools for Software Development

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Lecture 14— Societal Implications: Software Quality, Licensing, Patents, ...

The Big Questions

Is software any good? Could society make it better?

Who should be allowed to write software? Is "real" software different?

What responsiblity to software writers, users, and sellers have?

Should you be able to restrict software's use? How?

Quality Issues

"Kinds" of software??

- Mission-critical: nuclear-missile, hospital equipment, air-traffic control, ...

- Business-critical: Online retailer, stock market, your database, ...

- Computer-critical: operating system, browser, ...

- Get what you pay for: freeware, CSE homework, ...

How do we know what is what?

Bug Issues

- How often is it triggered?

- Can an adversary make it trigger?

- What damage does it do?

- What is a complex piece of software *supposed* to do?

Contrast with cars, buildings, etc.?

Who is to blame?

- A writes some C code that has an array-bounds error in it that can be triggered if a function is called with certain arguments.

- B uses A's code to develop an application such as a web browser.

- C uses the web browser B develops.

- D sets up a website that C visits. The contents of the website trigger the array-bounds error.

- As a result of the error, C's computer connects to E's computer and deletes all the files there.

Programmers

Would software be better if "public" code required licensed humans?

Who would do the licensing?

What would you test?

Who would you blame?

Would you still allow "as is" code?

Would anyone use software that cost more?

Software Licenses

What can a software provider require a user to do/not-do/allow?

What about software-library writers?

And then there's patents: What is a software idea? What if code is stolen? What if it's rewritten?

Beyond ethics/law

If you're a business, how high-quality do you want your software?

Worth delaying the product?

Worth slowing down the product?

Worth having fewer features?

Worth charging more?

How do you feel as a customer? Can you determine quality?

The Plan

Choose 1 of 4 groups (bug pragmatics, people-licensing, software-licensing, business-customer perspective).

Choose 1 or 2 *theses*.

Choose 3-4 arguments for *each side*.

Report on the group's conclusion from weighing the arguments.

Participate!