

# CSE 303: Concepts and Tools for Software Development

## Ethical and Societal Implications of Bad Software

18 April 2005

### Scenario for Discussion

Consider this purposely-vague scenario:

- *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.

Questions:

1. Can we distinguish between faulty code and misused code?
  - What if *A* wrote the code for a CSE303 homework assignment and did not even know *B* was using it?
  - What if *A* sold the code to *B* but had a comment in the code saying “fix this, potential bug”?
  - Does it matter if *A* is a student or a multinational corporation?
  - Can *C* argue that *B* provided a faulty product? What is a web browser supposed to do anyway?
2. Does intent or negligence matter?
  - What if *A* purposely put the bug in the code?
  - What if *D* purposely set up an “evil” website?
  - What if *D* did not purposely provide bad data, but did a sloppy job setting up the website?
3. Does expertise matter?
  - Does it matter if *C* is a student, a professor, a professor's grandmother, the government, a corporation, ...
4. Does the use of *E*'s computer matter?
  - Should *E* be to blame for being on a network if the computer stores a bunch of music files?
  - What if *E*'s computer has unbacked-up photographs of personal value?
  - What if *E*'s computer has information essential to a large business?
  - What if *E*'s computer is a medical device keeping a patient alive?
5. Are there useful analogies beyond software?
  - Am I to blame if I build a dangerous car and leave it on the street unlocked with keys in the ignition?
  - Can I sell a dangerous car as long as the buyer signs that they understand its danger?
  - If it's illegal for non-doctors to perform surgery, should it be illegal for high-school programmers to write code for the devices used in surgery?
  - If we cannot write correct software, should we simply not rely on computers to protect things of value?
  - Is running buggy code on a networked computer like not having a security guard? leaving your front door unlocked? leaving a \$1000 bill in the middle of the street?