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?