Information Technology & Society

CSE 100

Computers and networks like all technologies are socially neutral in that they can be used beneficially, harmfully, or in ways that have no social consequences at all.

CSE 100 Viruses

- ❖ A virus is software that replicates itself
- ❖ Replicating programs have been a curiosity in computing for years, but their deliberate use to "infect" other computers motivated the name
- ❖ Replication is not inherently harmful, but viruses usually have unintended or deliberate side effects that do cause harm
- ❖ New viruses "spontaneously generate" all the time, so it is not possible to be permanently protected

CSE 100 Spreading Viruses

❖ Viruses spread most commonly from an infected floppy, email attachment or downloaded file from the Internet, though it is possible for viruses to infect networked computers and be hidden in commercial software

❖ What happens …

> The virus arrives at a computer as a piece of program text such as a macro in an attached document or in the "boot sector" code of a floppy, etc. The virus is "latent" until the computer runs the code. When the code is run the virus replicates itself, e.g. sets itself up to become part of other attachments, and possibly does something harmful

Note, a virus that says its doing something harmful could be joking

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CSE 100 Melissa … A Recent Virus

❖ Melissa was widely reported in the press

❖ The virus is spread in email attachments as a macro

❖ When it runs, it accesses the user's email address book and sends an email to the first 100 people on the list telling them to check the attachment

❖ For many, the tip-off of a possible virus was that the email content wasn't characteristic of the sender

❖ A suspect has been accused of creating the Melissa virus, *having been tracked down by telltale "signature" information that was propagated in the document …* is this good news?

CSE 100 Practice "Safe" Computing

❖ What Can Be Done?
  ✜ Install a virus checker and sweep your computer … (Dr. Solomon's Anti-Virus application is available on UWICK)
  ✜ Be cautious about using other people's floppy disks, and scan them first with a virus checker
  ✜ If you accidentally boot your machine with a non-system floppy, immediately turn it off before inserting the correct disk
  ✜ Be cautious about opening email attachments from unknown sources

> Be realistic about viruses … there are other, more likely ways to lose data

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CSE 100 A Final Word On Viruses

❖ Virus scares, i.e. people warning of fictitious viruses, are almost as prevalent as viruses … be skeptical but cautious

❖ Other stuff affects computers
  ✜ Trojan horses … like viruses but nonreplicating
  ✜ Bombs … Trojan horses that are triggered by program variables, dates/times, etc.

CSE 100 Your Information Profile

- ❖ What do others know about you?
  - ✤ Details of the car you drive is available from the Department of Licensing
  - ✤ The hotel you stayed in last week is known to American Express
  - ✤ Land's End knows your measurements
  - ✤ MCI knows who you call, and from where
  - ✤ FTD knows who you send flowers to
  - ✤ If you pay by plastic the grocery store knows all about your preferences and tastes
  - ✤ Visa and Master Card know where most of your disposable income is spent

In principle, nothing is new here … businesses and agencies have (necessarily) always known this stuff

CSE 100 Data Mining

- ❖ The new feature is that computers can correlate this data and identify patterns, which would have been infeasible in the past
- ❖ On-line availability allows one to correlate information from multiple sources
- ❖ Data mining -- processing data to draw inferences
- ❖ There are benefits and liabilities
  - + Identify credit card fraud
    Target advertising to your interests
  - - Identify owners of specific vehicles for purpose of theft
- ❖ The potential (benefits and harm) of data mining increase when multiple sources are combined

CSE 100 | Information Access

❖ Who "owns" information?
  ✛ Is the "current temperature in Seattle owned?"
  ✛ Is Seattle's weather forecast owned?
  ✛ Is the current stock quote for Amazon.Com owned?
  ✛ Do you own your web page?
  ✛ Do you own your face?

❖ US and Europe differ on who owns personal information

❖ Copyright law covers the ownership of much information, but many aspects have not been decided

Who owns this lecture???

CSE 100 | Copyright

❖ There are several "rights" conveyed in copyright: right to copy, right to transfer copyright, right to change or extend it, …

❖ Using information, e.g. on a web page, requires that you honor the copyright, i.e. you must receive permission from the owner to use it
  ✛ Abuse seems to be rampant
  ✛ "Everyone else does it" is not defense
  ✛ Many presume "fair use" saves them
  ✛ Owners do prosecute violators

❖ Software is protected … read the fine print

CSE 100 Free Speech Forum Or Utility?

- ❖ Should the Internet be regulated?
  - ✦ Pornography, bomb making plans, stalking, …
  - ✦ Vengeance towards companies/people
  - ✦ Spamming, viruses, copyright infringement, …
  - ✦ Jurisdictional variations
- ❖ Communication's Decency Act
- ❖ Technical protections analogous to "V chips" are difficult

CSE 100 And Then, There's Y2K

- ❖ What's the problem?
- ❖ Computer system with a date not equal to disaster
- ❖ Real consequences …
  - ✦ Banking, billing, business systems …
  - ✦ Utilities -- power, cable, ISPs, ...
  - ✦ Aircraft, air traffic control, defense systems, …
  - ✦ ,,,
- ❖ What's the solution