Privacy and Security

What is privacy?
Do you have a right to it-online or elsewhere?
What can others discover about you online?
Why should you care?


Who are you?

- On a piece of paper write down…
  - ☐ Your UW NetID (we won't use names!)
  - ☐ The last 3 purchases you made (anywhere) that were for yourself
  - ☐ A medical condition from your past
    - Broken arm, pneumonia, etc. something you are willing to reveal
  - ☐ The last gift you bought for someone
  - ☐ The last controversial book you bought
    - And the reason why
 - ☐ The last web site you visited that your parents wouldn't approve of.

Monday, we talked about Encryption…

- A method to securely send messages between 2 parties
  - ☐ Meant to ensure privacy, integrity and security

- But what happens if the party you send the information to reveals it to others?

- What if government dictates that for National Security purposes, security now means less privacy?

- You want information kept private, others feel they have a right to know-either to protect or to do business

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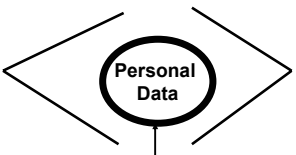
Who's Tracking Whom?

Personal Data

Big Business

Big Government

Others?

You

What is Privacy?

- Privacy is difficult to pin down and define.
  □ Roots of privacy are deep in history
  □ Hebrew culture, Classical Greece, Ancient China all reference it

- One definition:
  □ **Privacy:** the right of people to choose freely under what circumstances and to what extent they will reveal themselves, their attitudes, and their behavior to others

- Privacy protection is frequently seen as a way of drawing the line at how far society can intrude into a person's affairs

- Do you have a right to it at all times?
  □ To what degree?

What does Privacy mean in the IT World, specifically online?

- Many people think they move across the Internet anonymously
  □ WRONG!

- Do you expect that your interactions online should have some measure of privacy?

- Should transactions be tracked?

- How about just browsing?

- Let's look at web-based interaction....

What can a Web server learn about you?

- How much information is available about you when you use a Web browser?

- Have a look at http://www.privacy.net

Cookies

- A cookie is a small text file placed on your computer by Web sites that you visit
  □ RMID80a9929c1c6a3bcbae99f6c3nytimes.com/1024 9228908802952109545594968029447670*NYT-S10j…

- The cookie can contain any information the Web site chooses to put there:
  □ a code identifying you which connects you with a list of items purchased (shopping cart)
  □ how many times you've visited the site in the past, and when

- Strictly speaking, a Web site is only supposed to be able to see information about your visit to that particular site. But there are various ways around this . . .

Collecting information across sites

- Banner ad networks, like DoubleClick, track users across multiple sites

- The banner ad (at the top of a page) is a Trojan horse, which allows the Web site producing the banner ad to place a cookie on your machine

- There are even ways to get your email address!

See
http://www.privacy.net/track/

Collecting information across sites

Web Sites Visited for Cookie id=8676721453666

128.208.100.91 - 5/15/01 - 7:48:04 PM - /test.asp?visited=fine-art-center.com
128.208.100.91 - 5/15/01 - 7:48:19 PM - /test.asp?visited=buy.amerishop.com
128.208.100.91 - 5/15/01 - 7:48:22 PM - /test.asp?visited=nma.cop.net
128.208.100.91 - 5/15/01 - 7:48:26 PM - /test.asp?visited=bambi.funchick.com
128.208.100.91 - 5/15/01 - 7:48:30 PM - /test.asp?visited=nma.coffee-lover.com
128.208.100.91 - 5/15/01 - 7:48:34 PM - /test.asp?visited=fan.ballgame.net
128.208.100.91 - 5/15/01 - 7:50:31 PM - /Email_Opened.asp?lapetitefleur@hotmail.com, E-mail Client: Mozilla/4.0 (compatible; MSIE
128.208.100.91 - 5/22/01 - 12:21:30 PM - /Email_Opened.asp?lapetitefleur@hotmail.com, E-mail Client: Mozilla/4.0 (compatible; MSIE
128.208.100.91 - 5/22/01 - 6:06:46 PM - /test.asp?visited=gamble.atlantic-city.org
128.208.100.91 - 5/22/01 - 6:06:57 PM - /test.asp?visited=credit.approvals.net
128.208.100.91 - 5/22/01 - 6:07:01 PM - /test.asp?visited=investments.bankfunds.com
128.208.100.91 - 5/22/01 - 6:08:08 PM - /test.asp?visited=inthe.dietzone.com
128.208.100.91 - 5/22/01 - 6:08:36 PM - /test.asp?user=Grace&site=register.kiddies.net
We now have your identity from register.kiddies.net - user name: Grace
128.208.100.91 - 5/22/01 - 6:10:17 PM - /Email_Opened.asp?gbwhit23@u.washingtonedu, E-mail Client: Mozilla/4.0 (compatible; MS

Back to Step 2 | Back to Step 3 | Back to Step 4 | Step 5

- The result: a complex database identifying you and your habits!

Collating online and offline data

Web Sites Visited for Cookie id=8676721453666

128.208.100.91 - 5/15/01 - 7:48:04 PM - /test.asp?visited=fine-art-center.com
128.208.100.91 - 5/15/01 - 7:48:19 PM - /test.asp?visited=buy.amerishop.com
128.208.100.91 - 5/15/01 - 7:48:22 PM - /test.asp?visited=nma.cop.net
128.208.100.91 - 5/15/01 - 7:48:26 PM - /test.asp?visited=bambi.funchick.com
128.208.100.91 - 5/15/01 - 7:48:30 PM - /test.asp?visited=nma.coffee-lover.com
128.208.100.91 - 5/15/01 - 7:48:34 PM - /test.asp?visited=fan.ballgame.net
128.208.100.91 - 5/15/01 - 7:50:31 PM - /Email_Opened.asp?lapetitefleur@hotmail.com, E-mail Client: Mozilla/4.0 (compatible; MSIE
128.208.100.91 - 5/22/01 - 12:21:30 PM - /Email_Opened.asp?lapetitefleur@hotmail.com, E-mail Client: Mozilla/4.0 (compatible; MSIE
128.208.100.91 - 5/22/01 - 6:06:46 PM - /test.asp?visited=gamble.atlantic-city.org
128.208.100.91 - 5/22/01 - 6:06:57 PM - /test.asp?visited=credit.approvals.net
128.208.100.91 - 5/22/01 - 6:07:01 PM - /test.asp?visited=investments.bankfunds.com
128.208.100.91 - 5/22/01 - 6:08:08 PM - /test.asp?visited=inthe.dietzone.com
128.208.100.91 - 5/22/01 - 6:08:36 PM - /test.asp?user=Grace&site=register.kiddies.net
We now have your identity from register.kiddies.net - user name: Grace
128.208.100.91 - 5/22/01 - 6:10:17 PM - /Email_Opened.asp?gbwhit23@u.washingtonedu, E-mail Client: Mozilla/4.0 (compatible; MS

- Online and offline data can be combined
- "When [transactional information is] correlated with other sources of personal information, including marketing databases, phone books, voter registration lists, etc, a detailed profile of your online activities can be created without your knowledge or consent." (CDT Privacy Demonstration Page, Center for Democracy and Technology, March 18, 1998)

No Cookies

- There are ways to prevent cookies from being put on your computer

- Most browsers give you a way to say "no thanks" – to accept no cookies at all or to accept them selectively

No Cookies

- But Web sites can collect information on you even without the use of cookies

- How can they do that?

- Web sites store information about the requests they receive in log files. These files contain detailed information about every single request the site receives, including where the request came from, what time the visitor showed up, and what pages he or she looked at.

Anonymity

- Users can prevent their IP address from being known

- What place should the legal system play vs. technology?

Let's profile a few of you….

Stored Information and Data Mining

- What others know about you….
  - Details of the car you drive (from the DOL)
  - American Express knows the hotel you stayed at for prom
  - Old Navy knows your measurements
  - Qwest know who you call, and from where
  - If you pay for groceries with plastic, the grocery store knows your tastes and preferences
  - Visa and MasterCard know where most of you disposable income is spent

- Nothing is new here…businesses and other agencies have always known these things

- The potential threat to privacy is in the correlation of all this data to draw meaning/inferences
  - Data Mining

What Are Our Strongest Privacy Protections?

- Historically, they have not been legal protections

- It was simply the fact that it took too much time, effort, and resources to collect and manipulate information that was otherwise "publicly" available

- With new technologies continually decreasing the amount of time, effort, and resources needed to collect and manipulate information, we see a corresponding increase in the public's concern with privacy and the need for legal protections. At the same time, since 9/11 there has been a bit of a reversal in privacy concerns
  - □ Many misconceptions about what information really is private and what is public
  - □ What laws protect the privacy of your medical information?

Challenges to Privacy from IT

- Privacy Protections for information in the public domain that are based on the difficulty and expense of collecting and manipulating information are diminished

- Data collected for one purpose is readily available and can be used for other purposes
  - □ Student computer use to "identify" student effort

- Data collection can occur "invisibly", without the person's knowledge
  - □ Cookies, video cameras, web logs of pages visited, etc.

- Information flows readily across cultural and international boundaries; cultural understanding about privacy and privacy protections from one cultural environment may not carry over to others.

Who has the right to what information?

- When should you have the right to keep information to yourself?
  - □ Do you own information about yourself?
  - □ Do you have full control over access to that information?

- When should business or others have a right to know and use information about you?
  - □ Do they have a right to conduct business at any cost?

- How much control should the government have in obtaining your personal information as a way to "ensure" your security?

To think about for Monday….

- Should the Internet be regulated?
  - □ Pornography, bomb making plans, stalking….
  - □ Spamming, viruses, copyright violations….
  - □ Ability to learn many things about you without your knowledge…

  - □ But also…..new ideas, new knowledge, new trends

- Do people need to be protected from themselves (and others)?
  - □ Or will the solution be worse than the problem?