ECE458/ECE750T27: Computer Security
Privacy

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TULiPS
Technology Usability Lab in Privacy and Security

First, the news...

- First 5 minutes we talk about something interesting and recent

- You will not be tested on the news part of lecture

- You may use news as an example on tests

- Why do this?

  1. Some students show up late for various good reasons

  2. Reward students who show up on time

  3. Important to see real world examples

CBC

NEWS   **Top Stories**   **Local**   **Climate**   **World**   **Canada**   **Politics**   **Indigenous**

Calgary

Alberta wastewater unlocked key information about COVID-19. Could it help with measles too?

Researchers at the University of Alberta began looking for the virus in early April

Jennifer Lee · CBC News · Posted: Jul 16, 2025 8:00 AM EDT | Last Updated: 2 hours ago

A man collects sewage samples from the dorms at Utah State University Wednesday, Sept. 2, 2020, in Logan, Utah. (Rick Bowmer/The Associated Press)

As Alberta's measles outbreaks grow, researchers are now watching the province's wastewater for the highly contagious virus and hoping to determine if the technology could eventually serve as an early detection tool.

The magnitude of Alberta's outbreaks and the speed at which cases are climbing has sparked widespread concern. As of midday Tuesday, 1,323 cases had been confirmed since the outbreaks began in March.

Piggybacking off weekly wastewater samples, collected through the provincial COVID-19 surveillance program, the team has designed a test that can identify both the wild type measles virus (indicating actual infection) and vaccine-related shedding in the wastewater.

Remaining Lectures:

- Monday 21 July - there are two lectures, one at the normal 10am and one at 4pm

- Friday 25 July – we will be going over 2 hacking cases in depth. These will appear on the exam.

- Monday 28 July – Revision lecture

Think-pair-share

- Think about a software-mediated interaction you have had recently where an aspect of the software caused an awkward situation or straight-up violated privacy.

- Over the next few slides I will be talking about what privacy is from a human level.

- We will then do a think-pair-share where you try and apply the concepts to your privacy-problematic situation. It is ok if you want to change which situation by then.

PRIVACY DEFINITION

Defining privacy
- The Cambridge Dictionary

- Someone's right to keep their personal matters and relationships secret

  - Right to control the disclosure and use of personal data

  - Right to not disclose information

- Be alone and control access to themselves

  - Right to be let alone

  - Right to control access to themselves

  - Right to have a space (physical, digital, mental) that is inaccessible to others

Controlling who has personal information

Flicker @ElizaC3

Controlling access to self

Security expects specifications

- There is no such thing as a fully secure system that is protected from everything.

- Systems can be protected against specified threats, allow specified actions, and accept specified risks.

- Security expects someone to specify who is authorized and how to verify them.

- Issue of who should have access can be complex – Privacy.

- **Confidential**: only authorized entities can read data or infer information

- **Integral**: only authorized entities can alter data.

- **Available**: authorized entities can access the data

- **Accountable**: all actions are recorded and traceable to who/what did it

- **Authenticated**: all entities have had their identities or credentials verified

Security is also different from privacy time-wise

- Access control requires the reference monitor to make a decision at the time of access

- Privacy focuses more on purpose or what will be done with the access rights, which is not known at time of access

Cannot be proven at time of access because it is about a future state.

- Subject – Person, computer, entity doing the accessing

- Object – resource being accessed

- Action – action that will be done on the data (rwx)

- Conditions – conditions that must be met to gain access (e.g. quiz results only visible if subject has already completed the quiz)

- Obligations – Requirements post-access such as filling out a log file, or only using the data for XX purpose.

Security is also different from privacy time-wise

- The access-control matrix for files and resources does support some aspects of privacy
  - Controlling who has personal information
  - Controlling access to self (which app can push notifications)
- Access-control matrix on a computer rarely supports conditions
- Access-control matrix has no control over obligations

- Subject – Person, computer, entity doing the accessing
- Object – resource being accessed
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- Conditions – conditions that must be met to gain access (e.g. quiz results only visible if subject has already completed the quiz)
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HUMAN BOUNDARY MANAGEMENT

Humans are constantly managing their image based on context

Human Boundary Management

- Humans constantly adjust how they present themselves, their "boundaries" based on context

- Because
  - Show of respect to others
  - Managing information flow
  - Demonstrate being part of a group

- Difference between "hiding" something and not actively providing it

Signaling: providing information using non-verbal cues

- Humans sign information all the time that helps others interpret situations

  o Physical body position

  o Clothing choices

  o Tone of voice

  o Facial expression
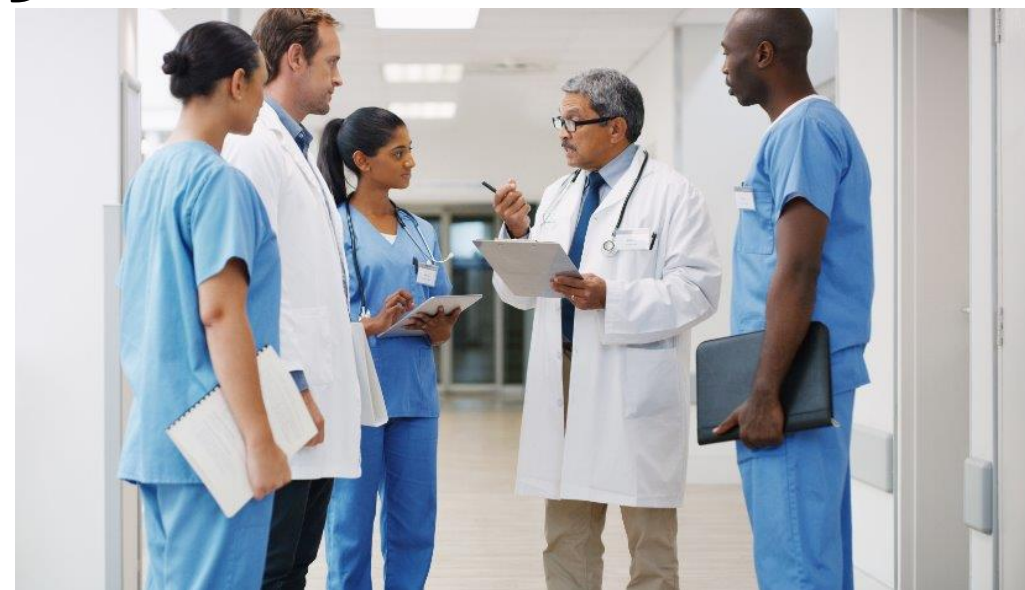
A study I once conducted on Messenger "seen by" feature

Normally my students view phones vertically.

Suddenly all of them are looking at phones horizontally.

Study inspiration
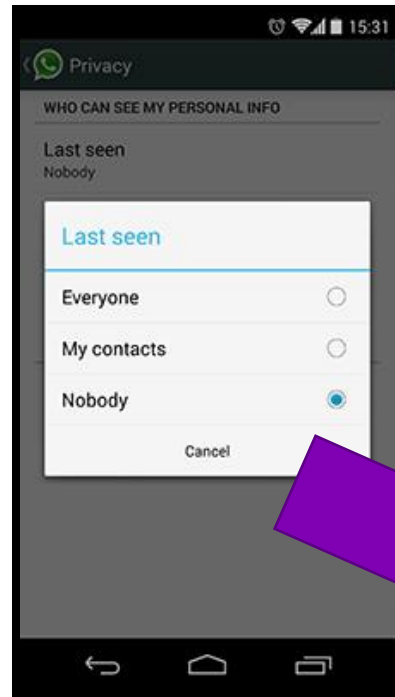
What happened?

Facebook Messenger introduced a "seen by" feature.

"Seen" visibility in social networks

LinkedIn
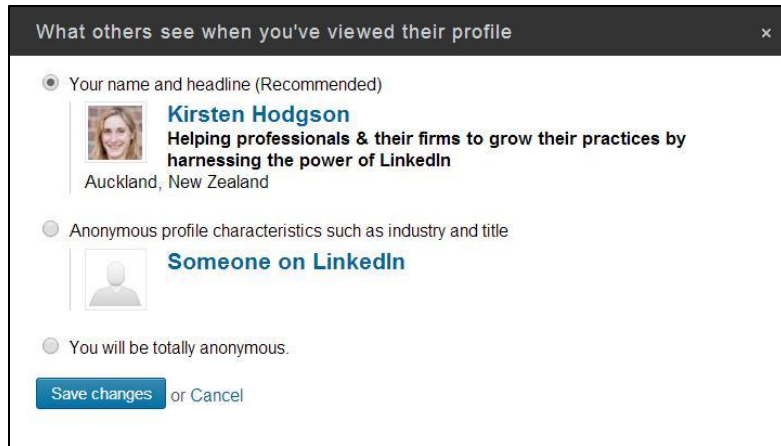
WhatsApp

Facebook Messenger

R. Hoyle, S. Das, A. Kapadia, A.J. Lee, K. Vaniea. Was my message read? Privacy and signaling on Facebook messenger. In CHI 2017.
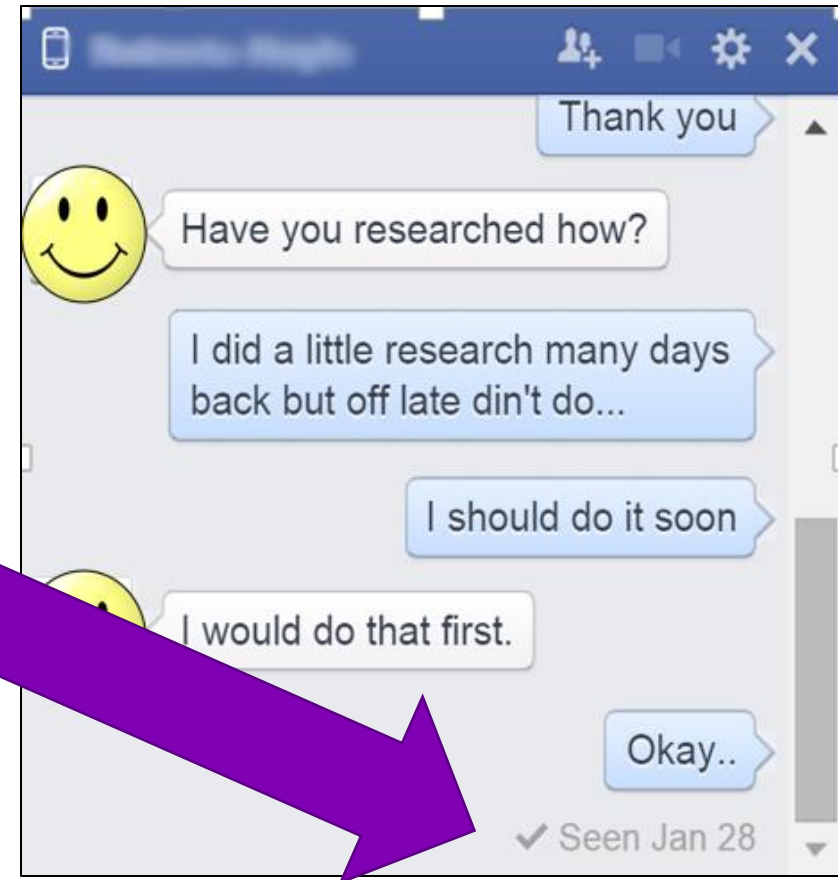
Signaling

- Situational information solves technical problems

  o Has the message gotten to the phone ok?

- Also "should I wait for response, or go do something else" problem

  o Are they actively responding?

- People use these small indicators to signal other information

- Binary signal expanded into a wide range of meanings

R. Hoyle, S. Das, A. Kapadia, A.J. Lee, K. Vaniea. Was my message read? Privacy and signaling on Facebook messenger. In CHI 2017.

68.4% avoided viewing a message because of "seen" feature

Reason	Frequency
I wanted to pretend I never saw the message	68.2%
I was too busy with other work and had no time to view the message	45.8%
I hadn't responded to a correspondence from this person and didn't want to let them know I had logged into Facebook	41.3%
I didn't want people to know I am checking Facebook messages at that time of day or day of week	17.9%
I wanted the other person to know I am ignoring them	8.0%
Other	4.0%

R. Hoyle, S. Das, A. Kapadia, A.J. Lee, K. Vaniea. Was my message read? Privacy and signaling on Facebook messenger. In CHI 2017.

Guessed reason for not read/reply	Did not read	Did not reply
Busy	24.1%	11.7%
Pointedly ignoring me	15.4%	27.9%
May be in trouble	5.7%	1.2%
Having technical issues	3.2%	0.5%
May have misinterpreted message	1.0%	10.0%
Is formulating a response	0.0%	2.0%

R. Hoyle, S. Das, A. Kapadia, A.J. Lee, K. Vaniea. Was my message read? Privacy and signaling on Facebook messenger. In CHI 2017.

Implications for design

- Settings
  - Some social media applications allow control and some do not.
  - Assumptions around setting existence impact signal interpretation.
- Access to self
  - Want to control interruptions.
  - Once message is read there is pressure to respond.
- Controlling expectations
  - Letting others assume you are busy.

R. Hoyle, S. Das, A. Kapadia, A.J. Lee, K. Vaniea. Was my message read? Privacy and signaling on Facebook messenger. In CHI 2017.

CONTEXT COLLAPSE

Context Collapse: two previously separate contexts collide

Example: your grandmother decides to visit you at work.
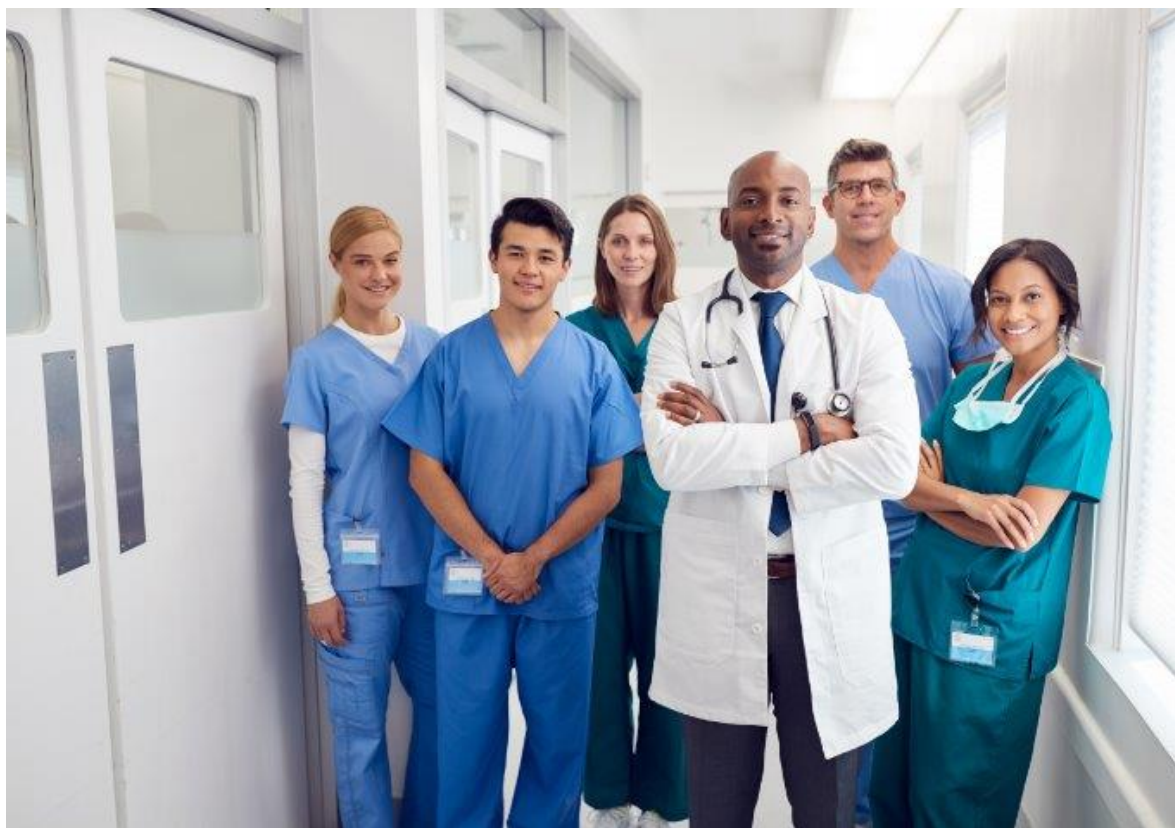
Context Collapse

You join great new social media app everyone is using

Then your mom joins and wants to be your friend...

Context Collapse

- Physically

  - Boundary management is done with people physically near us

  - Know who is present and can adjust to them

  - Privacy can be managed in relation to the context and people present

- Unexpected person

  - Teacher turns out to be in church group

- Context intrusion into a space

  - Radio is an early example, anything could be broadcast into the home

- Data copied between contexts

  - Photographs are an early example. Photo taken in one context can easily move to another.

- Data visible to many contexts at once

  - Social media

Coldplay concert embrace

- Couple was in a very public location

- Sometimes at concerts the camera is pointed at the audience and shown on the "big screen"

- Unfortunately, this couple panicked when put on the big screen causing everyone to wonder who they were

- Result was a CEO resigning his job

BBC

US tech CEO resigns after Coldplay concert embrace goes viral

2 days ago   Share ⌇   Save 🔖

Madeline Halpert
BBC News

A US tech company says its chief executive has quit after he was apparently caught on a big screen at a Coldplay concert embracing a female co-worker, in a clip that went viral.

Astronomer said in a statement: "Andy Byron has tendered his resignation, and the Board of Directors has accepted."

The clip showed a man and a woman hugging on a jumbo screen at the arena in Foxborough, Massachusetts, before they abruptly ducked and hid from the camera.

The pair were identified in US media as Mr Byron, a married chief executive of Astronomer, and Kristin Cabot, the firm's chief people officer. The BBC has been unable to independently confirm the identities of either person in the video.

The company statement said on Saturday: "As stated previously, Astronomer is committed to the values and culture that have guided us since our founding.

"Our leaders are expected to set the standard in both conduct and accountability, and recently, that standard was not met."

The New York-based firm said its board would begin a search for the next leader and their chief product officer would keep serving as interim CEO.

Teacher denied degree

- Teaching student posted a photo on MySpace entitled "drunken pirate" showing her drinking from a yellow cup.

- School refused to give her a degree citing "unprofessional behavior".

abcNEWS

Stream on hulu

Teachers' Virtual Lives Conflict With Classroom

Teacher-to-be says she was denied credential because of online photos.

By ABC News
May 5, 2008, 4:48 PM

May 6, 2008— -- Stacy Snyder was weeks away from getting her teaching degree when she said her career was derailed by an activity common among many young teachers: posting personal photos on a MySpace page.

Snyder, then 27, claimed in a federal lawsuit scheduled to go to trial Tuesday that Millersville University refused to give her a teaching credential after school administrators learned of a photo on her MySpace page labeled "drunken pirate." She said school officials accused her of promoting underage drinking after seeing the photo, which showed Snyder wearing a pirate hat and drinking out of a yellow cup.

"I don't think it's fair," Snyder's father said. "She could have been a great teacher."

Snyder's lawyer, Mark Voigt, said he and Snyder would not comment until after the trial.

Millersville University claimed it would have refused to give Snyder a teaching degree even without the Web page, alleging unsatisfactory performance and unprofessional behavior.

Smart speakers

- Personal assistants that have microphones, speakers, and a connection to the internet

- Interact with users via voice controls

- Can be programmed with a range of functions to perform various tasks

  - Access internet data like the weather

  - Interact with IoT devices, like light switches

  - Initiate third party services like Spotify

  - Be a speaker or microphone for other devices

Think-pair-share

- Think about a software-mediated interaction you have had recently where an aspect of the software caused an awkward situation or straight-up violated privacy.

- Consider: privacy definition, boundary management, signaling and context collapse.

- Why did the situation make you feel uncomfortable or that your (or another person's) privacy had not been upheld?

KATZ TEST

Katz vs US (1967)

An example of how boundary management and context collapse appear in law

Katz vs. United States (aka FBI)

- Katz was a gambler

- Used a payphone to place bets

- FBI placed a recording device inside the payphone booth he used and recorded his calls

- Katz claimed he had the right to privacy in the payphone booth, FBI claimed it was a public space

Unreasonable search and seizure

"For the Fourth Amendment protects people, not places. What a person knowingly exposes to the public, even in his own home or office, is not a subject of Fourth Amendment protection. But what he seeks to preserve as private, even in an area accessible to the public, may be constitutionally protected."

-- Katz vs. United States, 1967

US Fourth Amendment:

"The **right of the people to be secure** in their persons, houses, papers, and effects, against **unreasonable searches and seizures**, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized."

Katz test

Two part test

1. "A person have exhibited an actual (subjective) expectation of privacy"

   o   They did something to attempt to protect their privacy. Such as shut a door.

2. "The expectation be one that society is prepared to recognize as "reasonable."

   o   Other people would agree that shutting a door is a privacy statement.

"Thus a man's home is, for most purposes, a place where he expects privacy, but objects, activities, or statements that he exposes to the "plain view" of outsiders are not "protected" because no intention to keep them to himself has been exhibited. On the other hand, conversations in the open would not be protected against being overheard, for the expectation of privacy under the circumstances would be unreasonable."

—Katz, 389 U.S. at 361 (Harlan, J., concurring)
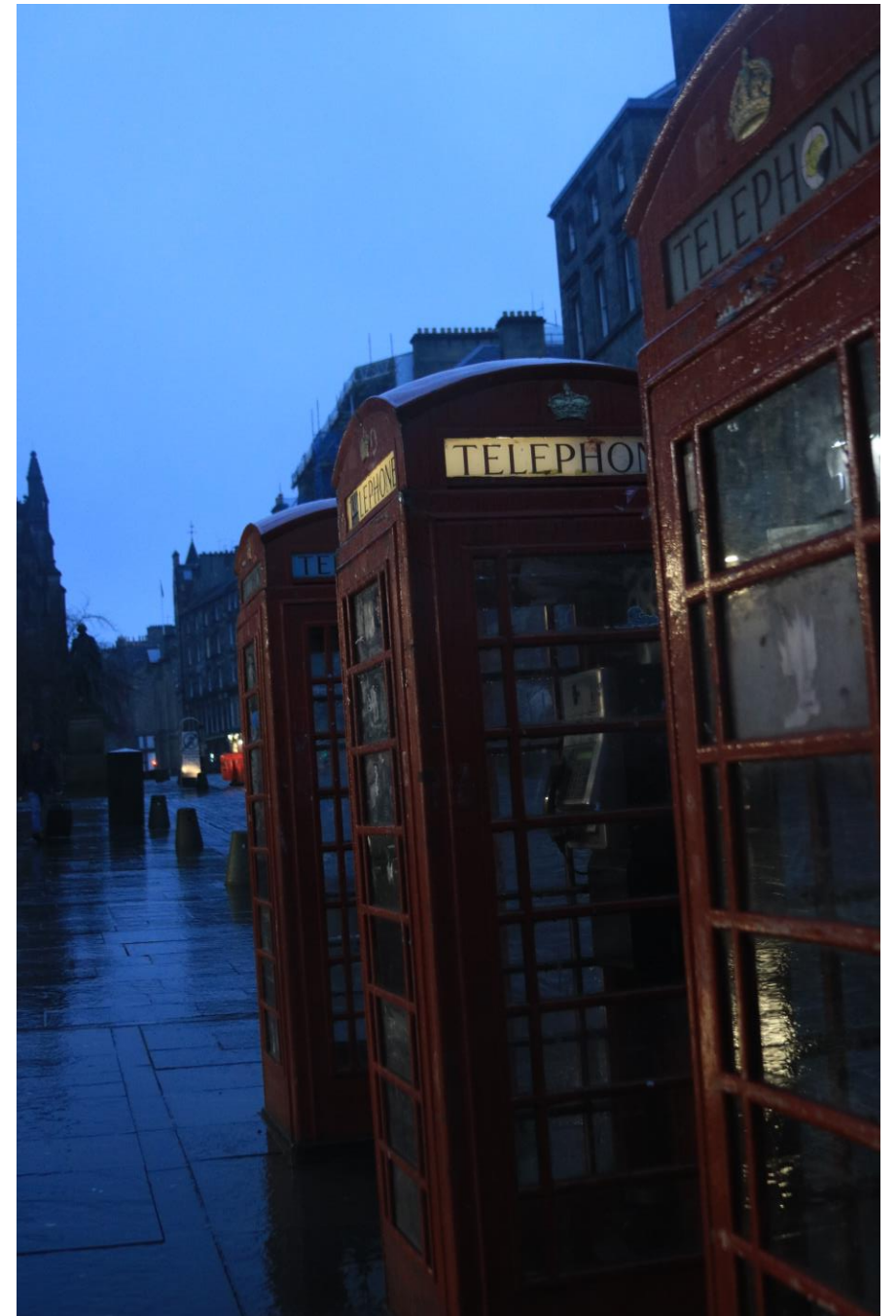
DEVELOPERS AND PRIVACY

Research Motivation

- Developers decisions impact software's efficiency, maintainability, and privacy.

- Not all developers have access to dedicated staff for security and privacy aspects.

- Privacy can be challenging for small organizations where their income depends privacy-unfriendly monetization methods such as ad networks.

- While prior work shows developer's poor practices for security, little is known about their privacy practices.
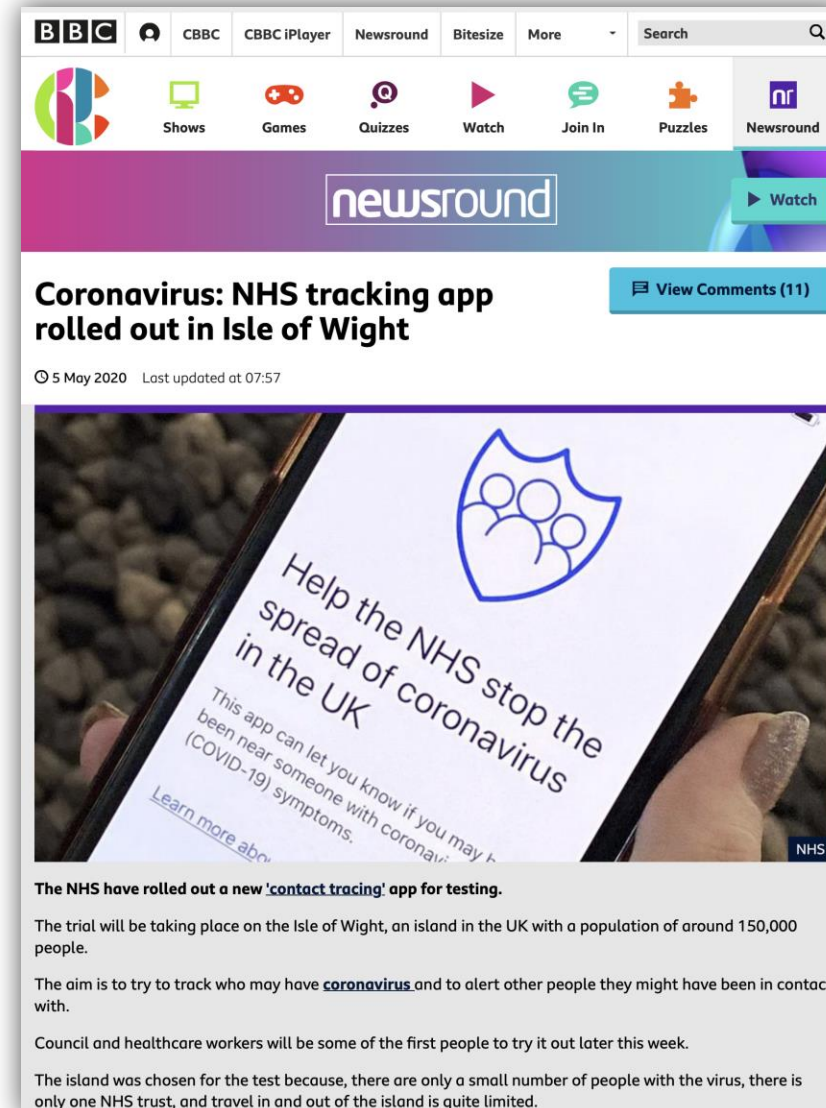
Static analysis:
Break an app up into a flow diagram

Often permissions are not used by developers directly, instead they include libraries or APIs that use the permissions.

Flashlight App

The Flashlight

Advertising
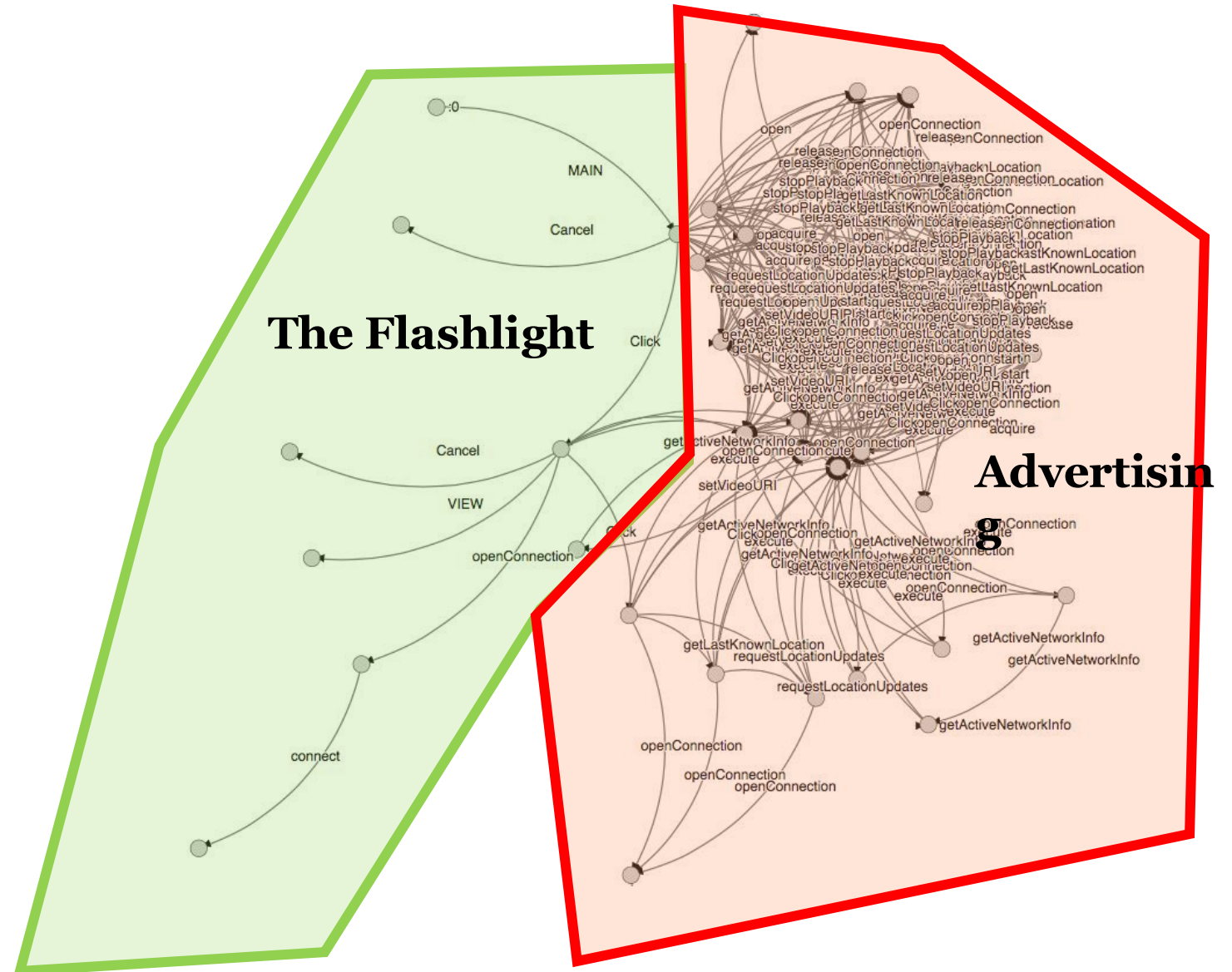
Stack Overflow (SO)

Has more than 50 million unique visitors every month

Developers build knowledge around SO (Lopez'19)

Ranks 43 in Alexa top sites

"An open community for anyone that codes"

Questions range from programming to security and data management (Yang'16)

One of the largest Q&A platforms for developers

Impacts software security (Acar'16, Ragkhitwetsagul'19, Wu'19)

Stack Overflow

- "Watering hole" where many people go to learn from, so potential source of information spread

  - Sample code with security problems on StackOverflow found in production code

- Q&A produces "shadow documentation" where documentation for code-related tools ends up copied to the site

  - Good StackOverflow answers often link back to the main documentation

Research questions

What topics do Stack Overflow users associate with the word "privacy"?

What or who is pushing Stack Overflow users to engage with privacy-related topics?

How to disable Google asking permission to regularly check installed apps on my phone?

Asked 5 years, 11 months

▲

83

▼

I'm developing a
couple days I ge

Google may re
Settings > Veri

★

13

I get the option t
policy to keep or

So my question:
installed apps or

🤖 android   permissions   privacy   policy

edited May 9 '14 at 6:54   asked Oct 9 '13 at 7:35

kramer65
11.4k   68   205   352

How To mask personal identification information using any language like java?

Asked 5 years, 10 months ago   Active 3 years, 1 month ago   Viewed 6k times

▲

1

▼

I want to mask PII(personal Identification Information) like Name. Birth Date, SSN, Credit card Number, Phone Number, etc. It should remain same formate , means it looks like real data. And shouldn't be reversible.And it should take less time to mask. Any one please help me.

java   encryption   privacy   data-masking

★

🕘

share edit flag

edited Nov 26 '16 at 18:53   asked Mar 13 '14 at 18:22

Hadi   Brijesh Patel
30.7k ●8 ●38 ●86   23 ●1 ●5

How to disable Google asking permission to regularly check installed apps on my phone?

Asked 5 years

83

13

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Can I trust react-devtools not to breach my privacy?

Asked 11 months ago   Active 11 months ago   Viewed 141 times

1

I am starting to develop webapps in React, and I have found out that the Chrome extension react-devtools is almost a defacto requirement for coding react applications.

The tool (and react) is made by Facebook, a company infamously known for their complete lack of moral when it comes to data gathering and creepy surveilance of us all. And it requires the ability to access everything you are browsing (which is probably needed to work it's magic), in order to be installed.

react-devtools have almost 1,5 million users (and they are probably all developers). Am I supposed to believe that Facebook will not exploit this obvious opportunity to follow every single thing we developers do in Chrome?

Does anybody in here know anything about react-devtools, and have anybody tried to analyse what data react-devtools sends in what directions? Because frankly I don't have this amount of trust for Facebook anymore, but is seems like react-devtools is inevitable, if I want to make React apps? :-(

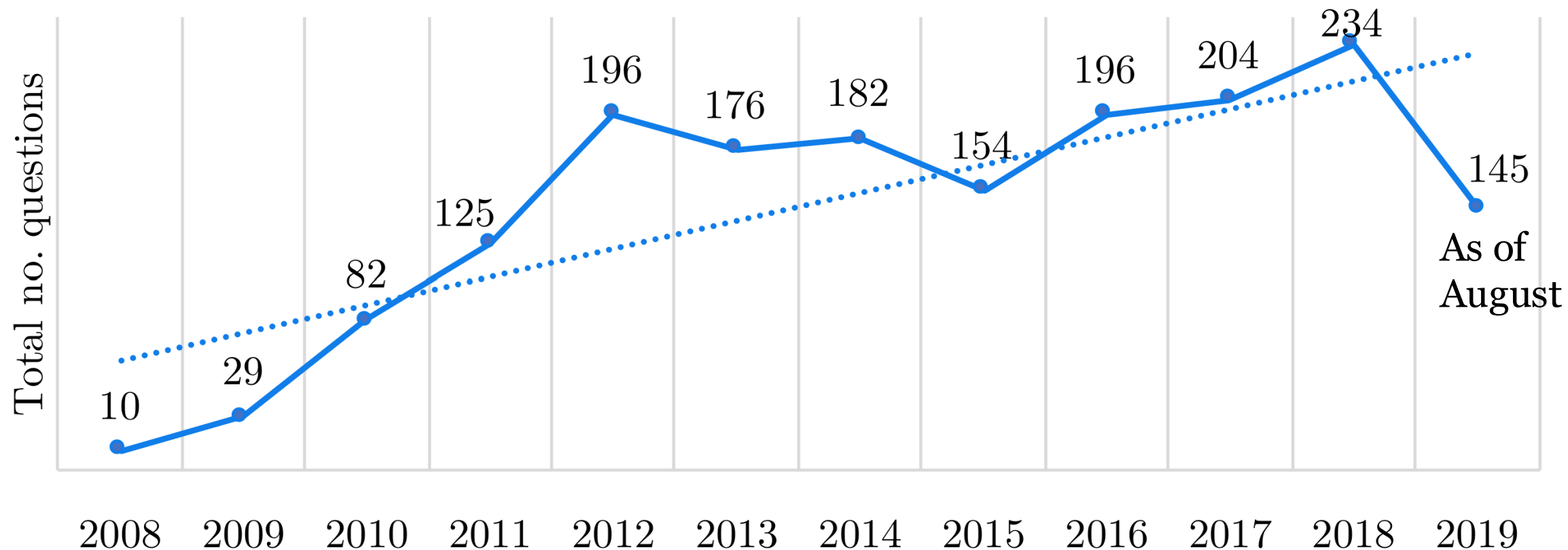reactjs   facebook   security   privacy

share edit flag

asked Feb 6 '19 at 8:58

hasse
804 ● 1 ● 7 ● 20

Use of "privacy" in SO tags and titles (1,733)

Total no. questions

10
29
82
125
196
176
182
154
196
204
234
145

As of August

2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019

amazon-web-services **android** api asp browser **cookies** database

database-design email **encryption** **facebook** facebook-fql

facebook-graph-api firebase firefox git github google-

analytics google-chrome **google-play** html **iOS** iphone java

javascript jquery js macos **mysql** net node **objective-c**

permissions **php** plist policy **privacy** **privacy-**

policy python **ruby-on-rails** **security** swift vimeo web

windows wordpress xcode xmpp youtube youtube-api

Kami Vaniea -- Understanding privacy-related questions on Stack Overflow -- CHI2020

Qualitative coding

- 315 randomly selected questions

  - 21 questions excluded for being vague or not about privacy

- 2 coders

- Looked at three aspects:

  - Question type

  - Driver

  - Privacy aspect

TULiPS

Question type

63% **How: instructions, solutions**

I've used my personal address for [git] commits and I'm trying to set it to another one before I make the repository public."

16% **Errors**

"I still get privacy error with 'NET::ERR_CERT_AUTHORITY_ INVALID' in the browser when I hit the ELB url using https"

17% **Abstract or conceptual**

"What is the hidden cost of using these CDN services? If the script is not cached by the browser and it loads the script from google what could google potentially do with this information?"

7% **Unexpected behavior**

"I set microphone permission in info.plist file so record audion permission alert displaying in iOS 10.3.2 but its not appearing in IOS 10.3.3 devices."

Drivers to post

- 49% Personal or unstated drivers
  - Clients requesting a feature
  - Users wanting something
  - The developer themselves thinking that something should be done
- 46% Platform (e.g. Apple app store, Google Play...)
  - Requirements for posting
  - UI elements added by platforms
- 2% Laws and regulations (e.g. GDPR)
  - Speculation if a behavior is allowed or legal

■ **Platforms**

*"I am submitting my app on App Store Connect\My App page and when I submit for review, it shows **error** on App Information: "**You must provide a Privacy Policy URL**." even I have pasted the link to the website show the privacy policy there. I have checked the link using https://developers.facebook.com/tools /debug/sharing/ and they show no error. Do you know what could be the reason and how to fix it ?"* [53097654 - 2018].

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Kami Vaniea -- Understanding privacy-related questions on Stack Overflow -- CHI2020

Play Console Help

📄 Advertising ID

📄 **Provide information for Google Play's Data safety section**

📄 Create and set up your app

📄 Use Play App Signing

📄 Use of All files access (MANAGE_EXTERNAL_STORAGE) permission

📄 Prepare your app for review

📄 Set up an open, closed, or internal test

📄 How to get started with Play Console

📄 Add preview assets to showcase your app

📄 Target API level requirements for Google Play apps

Get started guides are not necessarily helpful for privacy

Developers need help doing security and privacy right.

Unfortunately existing tools and guides are filled with dark patterns.

```java
public void loadForm(){
    UserMessagingPlatform.loadConsentForm(
        this,
        new UserMessagingPlatform.OnConsentFormLoadSuccessListener() {
            @Override
            public void onConsentFormLoadSuccess(ConsentForm consentForm) {
                MainActivity.this.consentForm = consentForm;
                if(consentInformation.getConsentStatus() == ConsentInformation.ConsentStatus.REQUIRED) {
                    consentForm.show(
                        MainActivity.this,
                        new ConsentForm.OnConsentFormDismissedListener() {
                            @Override
                            public void onConsentFormDismissed(@Nullable FormError formError) {
                                // Handle dismissal by reloading form.
                                loadForm();
                            }
                        });
                }
            }
        },
        new UserMessagingPlatform.OnConsentFormLoadFailureListener() {
            @Override
            public void onConsentFormLoadFailure(FormError formError) {
                /// Handle Error.
            }
        }
    );
}
```

> **Infinite loop till user consents.**

Google Ad Mob getting started guide

Get started guides are not necessarily helpful for privacy

Ask for precise location data to be collected, but no opt-out button provided to user.

```java
protected void presentConsentOverlay(Context context) {
  new AlertDialog.Builder(context)
      .setTitle("Location data")
      .setMessage("We may use your location, " +
          "and share it with third parties, " +
          "for the purposes of personalized advertising, " +
          "analytics, and attribution. " +
          "To learn more, visit our privacy policy " +
          "at https://myapp.com/privacy.")
    .setNeutralButton("OK", new DialogInterface.OnClickListener() {
      @Override
      public void onClick(DialogInterface dialog, int which) {
        dialog.cancel();
        // TODO: replace the below log statement with code that specifies how
        // you want to handle the user's acknowledgement.
        Log.d("MyApp", "Got consent.");
      }
    })
    .show();
}

// To use the above method:
presentConsentOverlay(this);
```

Google Ad Mob getting started guide

TULiPS
Technology Usability Lab in Privacy and Security

55

Privacy aspects

Theme	No. Questions	Total views	Sub-themes (separated by ";")
Access control	119 (40%)	103,654	Dealing with privacy settings; I'd like to do it, but how?; UI elements; Browsers.
Privacy policies	39 (13%)	127,225	How to do it?; I got an error while trying to implement it; I have got an error in usage descriptions; Do I need a privacy policy? Why?
Encryption	10 (3%)	11,100	How do I achieve it?; Tell me more about it.
Privacy and code issues	5 (2%)	2,523	-
Versions and updates	11 (4%)	22,269	Device and OS versions cause unexpected results; Updates cause unexpected results.
Developers with privacy concerns	71 (24%)	57,136	How to implement privacy?; Can I trust this service or company?; Tell me about it.
Developers ignoring PbD principles	18 (6%)	9,681	-
Developers as end-users	21 (7%)	89,279	How do I protect my data?; Privacy in version control systems (Git); I have privacy concerns, thoughts?

Summary of Stack Overflow Questions

- Platforms are major drivers, developers are learning from platforms what privacy is

- Developers need help making privacy and security judgements of the tools and libraries they use

- Issues are being found at time of app upload rather than by the IDE or compiler

- Minimal support for neighboring issues:

    - How to write a good privacy policy

    - Where to host a privacy policy

PRIVACY: LITTLE BLUE BOOK
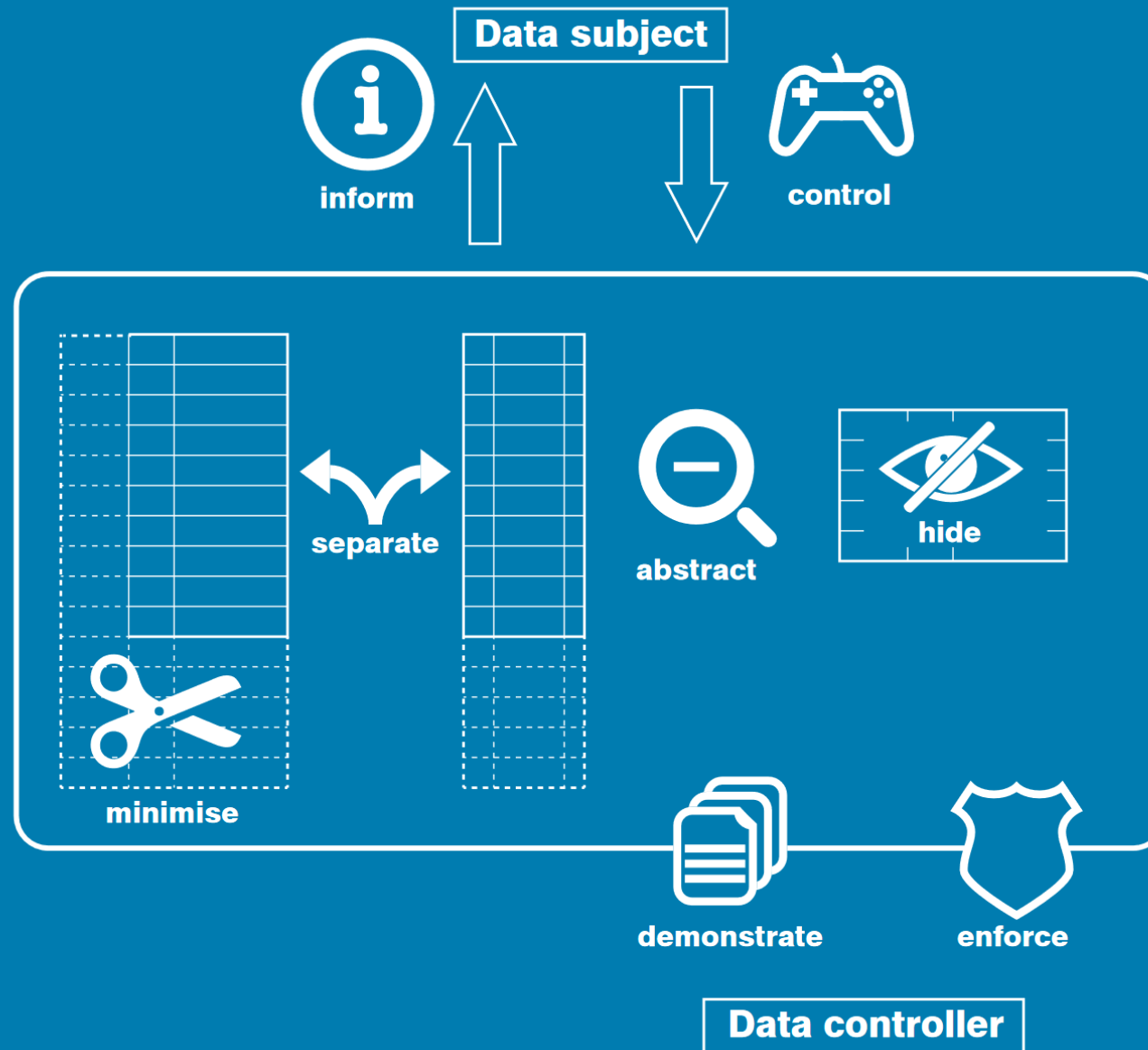
Think-pair-share

- Think about a software project you have worked on as part of University or a co-op

- Think about the structure of any data you had access to

- Did it exhibit any of the privacy practices you see on the right?
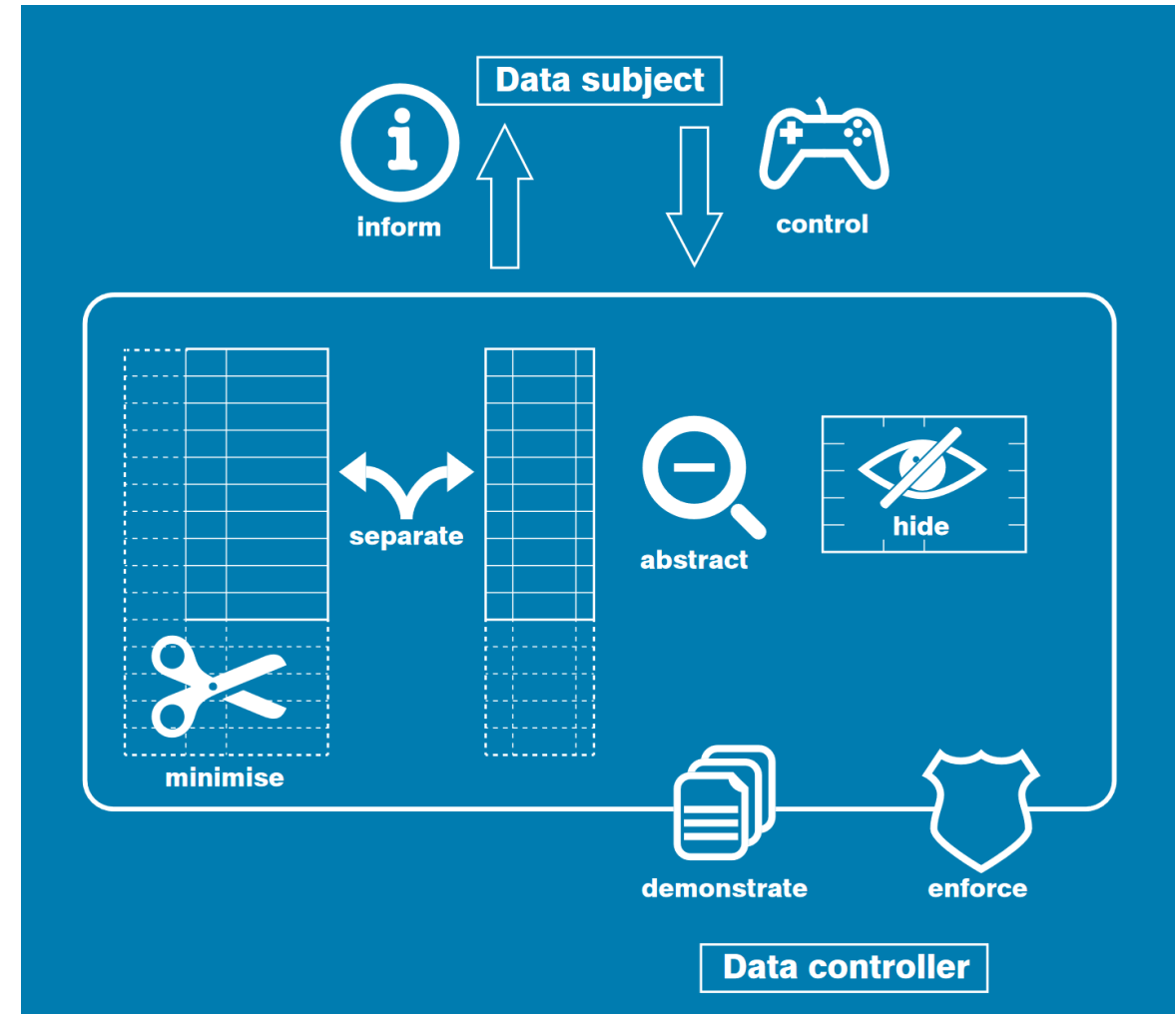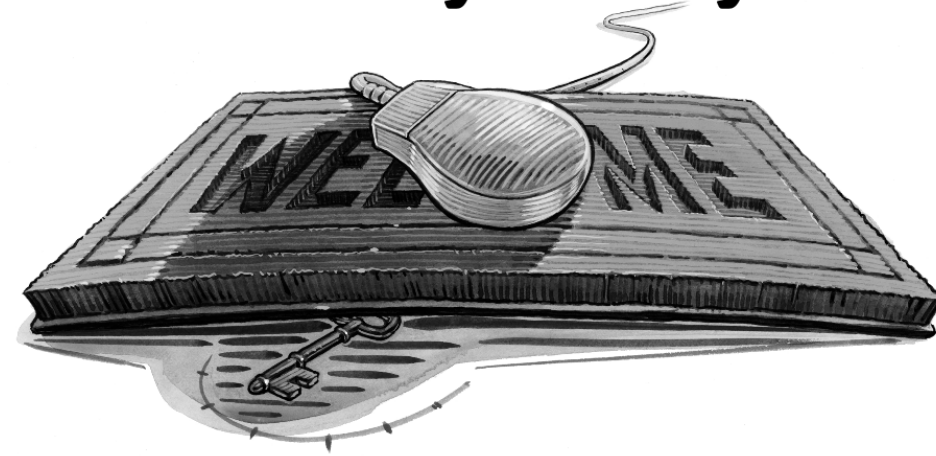
TRUST AND E-COMMERCE

Roll back time to the early 2000's

"In the rush to build Internet businesses, many executives concentrate all their attention on attracting customers rather than retaining them. That was a mistake. The unique economics of e-business make customer loyalty more important than ever."

E-Loyalty

Your Secret Weapon on the Web

In the rush to build Internet businesses, many executives concentrate all their attention on attracting customers rather than retaining them. That's a mistake. The unique economics of e-business make customer loyalty more important than ever.

by Frederick F. Reichheld and Phil Schefter

LOYALTY MAY NOT BE THE FIRST idea that pops into your head when you think about electronic commerce. After all, what relevance could such a quaint, old-fashioned notion hold for a world in which customers defect at the click of a mouse and impersonal shopping bots scour databases for ever better deals? What good is a small-town virtue amid the faceless anonymity of the Internet's global marketplace? Loyalty must be on a fast track toward extinction, right?
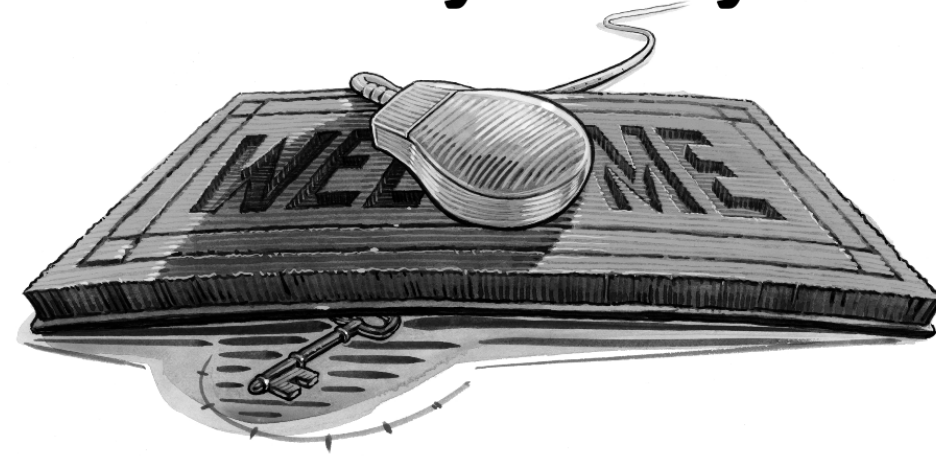
Not at all. Chief executives at the cutting edge of e-commerce—from Dell Computer's Michael Dell to eBay's Meg Whitman, from Vanguard's Jack Brennan to Grainger's Richard Keyser—care deeply about customer retention and consider it vital to the success of their on-line operations. They know that loyalty

"On the Web … business is conducted at a distance and risks and uncertainties are magnified… Customers can't look a salesclerk in the eye, can't size up the physical space of a store or office, and can't see and touch products. They have to rely on images and promises, and if they don't trust the company presenting those images and promises, they'll shop elsewhere."

E-Loyalty

Your Secret Weapon on the Web

In the rush to build Internet businesses, many executives concentrate all their attention on attracting customers rather than retaining them. That's a mistake. The unique economics of e-business make customer loyalty more important than ever.

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ILLUSTRATION BY DOUGLAS JONES

Problem: How can we make people feel safe spending money online?

Trust transfer

- Inexperienced shoppers tend to transfer trust. One thing worked, so they look for something else that looks similarly trustworthy.

- Collective approaches

  - TRUSTe seal

  - Being part of a more trusted retail group

  - "well they would say that, wouldn't they"...

- Individual site approaches

  - Hard to build trust on just one site.

  - Things like customer testimonials first require trust in the company that they are true

Riegelsberger, Jens, and M. Angela Sasse. "Trustbuilders and trustbusters." *Towards the E-Society*. Springer, Boston, MA, 2001. 17-30.

Problem: We need a trusted cross-site signal that users can trust.

Answer: Privacy policies

Federal Trade Commission Act of 1914 (USA)

The FTC is empowered, among other things, to:

▪ prevent unfair methods of competition, and unfair or deceptive acts or practices in or affecting commerce;

▪ seek monetary redress and other relief for conduct injurious to consumers;

▪ prescribe trade regulation rules defining with specificity acts or practices that are unfair or deceptive, and establishing requirements designed to prevent such acts or practices;

▪ conduct investigations relating to the organization, business, practices, and management of entities engaged in commerce

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Federal Trade Commission (FTC)

- Unfair practices
  - Injure consumer
  - Violate established policy
  - Unethical
- Deceptive practices
  - Mislead consumer
  - Differ from reasonable consumer expectations

Roughly: The FTC declared that if an organization said it did X in its privacy policy, but then was shown to not be doing X, then the FTC could levy a large fine.

Also if it had no privacy policy, that was unfair, and the organization could be fined.

Morning Lecture Stopped Here

QUESTIONS