



Computer Science Virtual Learning

Computer Science Principles

May 20, 2020

Lesson: May 20, 2020

The Cost of 'Free'

Learning Target:

Students will be able to:

- **Explain how and why personal data is exchanged for use of free software.**
- **Explain some of the privacy and economic tradeoffs involved in the collection and use of personal data.**
- **Describe the ways and reasons organizations collect information about individuals.**
- **Read and critically evaluate a data privacy policy.**



Introduction

Previously, we looked at ways that data we willingly give away could be lost and used to compromise our security.

What we often don't think about, however, is just how much data is being collected about us without us even knowing it.

Especially as computers become ever more powerful and ubiquitous, it is becoming easier for vast amounts of data about us to be collected and for it to be used for a variety of purposes.

Introduction

Watch this Video and learn just how that data is being used





Introduction

The video mentions how your phone and websites you use track certain things about you. Today we're going to find out a little bit more about it. Here are the primary questions we're interested in:

- **Why is this tracking necessary? What are the benefits and drawbacks?**
- **How can you find out what kind of data is tracked about you and by whom?**

In Your Computer Science Notebook, write down your thoughts. Share your thoughts with your family and friends.

Practice: The Cost of 'Free'

Thinking Prompt: What do you know about data collected about you every day?

- ❖ **In your Computer Science Notebook, write down 2 or 3 websites, web services, or apps that you use the most or rely on the most to stay connected to friends and family, or use for “productivity” like school work.**
- ❖ **For each website / service / app, fill in the following information - just what you know off the top of your head from your own experience or memory**
 - ❖ **Name of Website / Service**
 - ❖ **Do you have an account, or need to login?**
 - ❖ **What kinds of data does (or could) this site potentially collect about you?**
 - ❖ **Do you know if this data is shared with other people, companies or organizations? (If so, which ones?)**
 - ❖ **Do you know how you would find out what data is collected or how it's shared?**



Practice: The Cost of 'Free'

Quick Poll and Recap of Findings:

How many of the apps that you chose were free?

It's likely that all or almost all the apps.

Name one piece of data the app you chose that could potentially collect or know about you.

In your notebook, write down as many different types as possible and share your thoughts with your family and friends.

Wow, that's a lot of data! If this stuff is "free," but these companies make a lot of money, then it stands to reason that we are "paying" for these services with our data, because that's the only thing we're giving them in return for a service.

What is the monetary value of your personal data?

How is it used to make money? What are the tradeoffs? Let's learn a little bit more.

Practice: The Cost of 'Free'

Part 1 - Read: [Wall Street Journal: Users Get as Much as They Give](#)

As you read and annotate the article, consider the following questions and take notes in your Computer science Notebook:

- **Right now, which way are you leaning? Too little privacy? Right amount?**
- **Are you willing to give up some privacy (and potentially some security) to have free access to modern innovative tools - do you trust companies to be good stewards of your data?**
- **Are you concerned? Do you think too much of your data is out of your control? Do you think too much personally identifiable data is given over to someone else?**
- **What other questions do you have?**

Practice: The Cost of 'Free'

Part 2 - Read a real data privacy policy

Open the [Student Activity Guide](#) and make a copy.

Pick one of the apps / [websites that you chose at the beginning of class](#), and go find and read through that site's privacy policy. On the Activity Guide, you are asked to note what information the site says they collect, how they are using it, and (hopefully) how they are protecting it. The activity guide provides guidance about how to find answers to these questions.

1. Choose a Website and Find the Data Privacy Policy
2. What kinds of data are being collected? How many different kinds of data?
3. What service or feature is enabled by the data they are collecting? Why are they collecting it in the first place?
4. Who else is given access to that data? How are they using it?
5. Can you get access to your own data? Can you modify what is collected or used, or delete your data if you wish?

Practice: The Cost of 'Free'

On a scale of 1-4, rate how comfortable you are with this company's data policy?

1 - very uncomfortable 4-very comfortable

Now consider the Data policies that you just reviewed and report 4 things about each policy:

- 1. The names of the companies / organizations / websites reviewed**
- 2. Notable similarities and differences in the kinds of data collected**
- 3. Just the number: How many privacy policies let you access, modify or delete your personal data?**
- 4. Just the number(s): How did you rate the policies on how comfortable you were?**





Practice: Wrap up

Where do you stand?

- **This lesson is entitled The Cost of ‘Free.’ What does that mean to you now?"**
- **How would you explain The Cost of ‘Free’ to a family member, or person you just met, if you had only 60 seconds?"**

Would you install a “free app”?

What questions do you have?

- **What would you want to know?**
- **What would you do to find that out?**
- **Bottom line: Would you install this app?**



Extended Learning

Articles in the news: You may choose to use the following articles to help deepen your understanding of the pros and cons of the utility vs. privacy dilemmas that arise thanks to the massive amounts of data generated by modern technologies:

Wall Street Journal: It's Modern Trade: Web Users Get as Much as They Give

Business News Daily: How Businesses Are Collecting Data (And What They're Doing With It)

ZDNet: A case against online privacy

U.S. News: The Case for Internet Surveillance



Extended Learning

Apple: A Message to Our Customers (Apple challenges order to give government data about terrorist shooter)

The Guardian: How Taylor Swift showed us the scary future of facial recognition

CNN: Google knows too much about you

TechRepublic: Why "Nothing to Hide" misrepresents online privacy

NPR: Facebook, Google Draw Scrutiny Over Apps That Collected Data From Teens

Politico: We Are All Big Brother Now

Tech Times: Google Play Store contains over 3000 Android apps for kids that improperly collect data



Extended Learning

BBC: Is Privacy Dead in an Online World?

Wired: App Permissions Don't Tell Us Nearly Enough About Our Apps

Blown to Bits - Chapter 2 - Naked in the Sunlight: Privacy Lost, Privacy Abandoned

Program or Be Programmed - Chapter 7: Social - Do Not Sell Your Friends

Kaspersky: 10 Cool Big Data Projects

Fortune: Boston is using big data to solve traffic jams

Maclean's: The real reason crime is falling so fast

U.S. News: Relax and Learn to Love Big Data

LinkedIn: The Ethics of Privacy: The Benefits of Data Gathering