

Lesson 8: The Internet Is for Everyone

So Far...

- ▣ You have solved a few problems by creating and using small protocols for transmitting data over a wire to one other person
- ▣ But the Internet is obviously much bigger than a single wire connecting two people. It connects billions of people and even more billions of machines
- ▣ In the next several lessons, we're going to look at some of the technical issues involved with having lots of machines trying to communicate at the same time.
- ▣ In other words, we're going to take a deep dive into the inner-workings of the Internet

Questions:

- ▣ How does a web page come back to you and not to someone else?
- ▣ Is a web page one big message? Or multiple messages?
- ▣ How does a website remember who you are?
- ▣ Who is in charge of the Internet?
- ▣ Who pays for the Internet?
- ▣ Where/how might someone spy on you?
- ▣ Who controls what you are allowed to see?
- ▣ Where/how would a hacker steal your identity?

KWL – Think, Pair, Share

- When you enter a web address in a browser and hit enter, what happens? At some point you see the web pages in the browser, but what happens in between? What are all the steps?
- Write down the series of things that you think (or have heard) happen right after you hit Enter. What happens first, second, third, etc.?
- Don't worry if you don't know all the pieces, just write what you know so far...

Video

- ▣ Vint Cerf is widely regarded as one of the fathers of the modern Internet. We'll see him in a few videos in the next few lessons.

Discussion on Video

- ▣ In the video Vint Cerf says that nobody and everybody is in charge of making the internet work but the reason it all works together is because everyone uses the same protocols
- ▣ It's amazing that no single person, government, or corporation is in charge.
- ▣ Rather, it is a collection of citizens and volunteers interested in defining the standards who formed a volunteer organization called the **Internet Engineering Task Force** to develop and promote voluntary internet standards IETF.

“The Internet is for Everyone”

- “After the terrorist attacks of Sept. 11, 2001, Vint Cerf was concerned about maintaining some of the principles of openness and access upon which the Internet was built and founded
- He wrote this memo as a plea to the people who write and define standards (the IETF) to make sure the way the Internet is engineered maintained the philosophy that the Internet should be available and useable by everyone in the world, regardless of race, gender, creed, location, or wealth.”

Activity:

- With a partner, skim the document and look at the 9 “Internet is for everyone – but it won’t be if...” challenges laid out at the end.
- With your partner pick one or two of the challenges that are the most meaningful to you, or relate to some experience you’ve had in your life.
- Be prepared to:
 - Read the statement you chose and explain in your own words what it means
 - Explain why that particular challenge is meaningful to you or relates to some experience you’ve had

Share Out

- I want to hear from each group

Wrap-up

- “You can’t escape from contact with the Internet. So why not get to know it?” –Vint Cerf
- Some of the largest issues facing society hinge on an understanding of how the Internet functions
- At the end of this unit you will do a Practice PT about one of these societal issues. You will research one of these modern issues and prepare a flash talk (a 2 minute presentation) that explains the technical aspects of the Internet that underlie that issue.

Two major issues to think about:

- ▣ **Net Neutrality** is a raging legal debate about the principles that Internet service providers should enable access to all content and applications regardless of the source, and without favoring or blocking particular products or websites.
- ▣ **Internet Censorship** is the attempt to control or suppress what can be accessed, published, or viewed on the Internet by certain people. This can be used to protect people, but can also be used to limit free speech.

More examples and reasons to learn how the Internet functions:

- ▣ The people who propose the laws, or judge them often don't really know how the Internet works, what makes sense and what doesn't.
- ▣ Citizens don't know how to protect themselves from cybercrime, of often live in a cloud of fear and uncertainty not only about the law, but their rights, and about what's actually technically possible.
- ▣ Hackers take advantage of unknowing unsuspecting people.
- ▣ Corporations who provide Internet service need to balance profitability with providing access to everyone.
- ▣ Countries restrict access to the internet or monitor activity – how is that technically possible? What is it they are actually doing?

Assessment:

- ▣ Answer the questions on Code Studio for Stage 8
- ▣ Read Chapter 1 pages 4-17 by Thursday
 - ▣ Pick one of the Koans (1, 2, 3, 6, 7) and respond to these two prompts:
 - ▣ Argue if you agree that it is a “truth” and if it will always be a “truth”
 - ▣ How does this koan intersect with your life as a student?
- ▣ <http://www.bitsbook.com/wp-content/uploads/2008/12/chapter1.pdf>