Computer Science Principles
Lesson: April 10, 2020

Learning Target:

In this lesson, the goal is to build student understanding of the Internet as a set of computers exchanging bits in the form of packets, and for students to identify the components of their digital footprint.

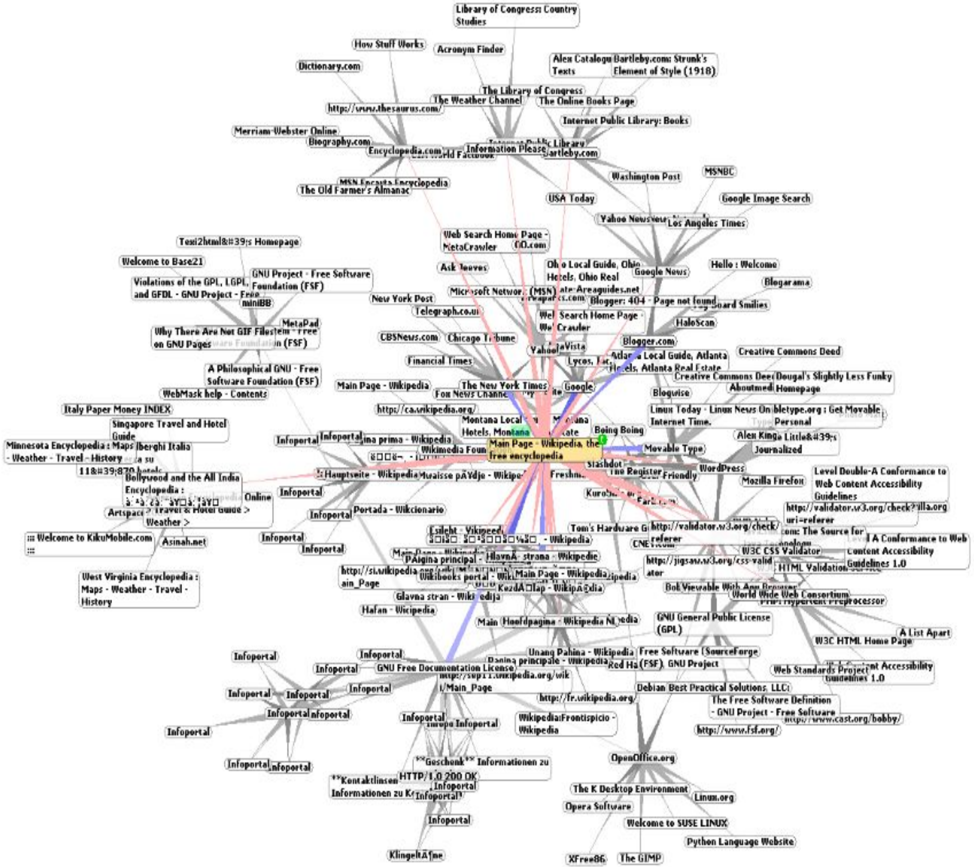
Watch This Video:

The Internet: HTTP & HTML

Practice:

What is the world wide web?

When most of us talk about using the "Internet", we're typically talking about a very specific part of the Internet: the World Wide Web (WWW, or simply "web").The web is a massive network of webpages and media, connected to each other through links, and accessible via URLs.We call it a web because of its vast interconnectedness. Starting from one URL, like wikipedia.org, we can follow links to eventually reach millions of webpages from across the globe.Here's a tiny portion of that web from 2004:



Library of Congress: Country Studies
How Stuff Works
Acronym Finder
Dictionary.com
Alex Catalogue Texts
Bartleby.com: Strunk's Element of Style (1918)
The Library of Congress
The Weather Channel
The Online Books Page
http://www.thesaurus.com/
Internet Public Library: Books
Merriam-Webster Online
Biography.com
Encyclopedia.com
Information Please
MSN Encarta Encyclopedia
The Old Farmer's Almanac
Washington Post
MSNBC
USA Today
Google Image Search
Yahoo News
Los Angeles Times
Text2html&#39;s Homepage
Web Search Home Page - MetaCrawler
GO.com
Welcome to Base21
Violations of the GPL, LGPL, and GFDL - GNU Project - Free
GNU Project - Free Software Foundation (FSF)
Ask Jeeves
Google News
Hello : Welcome
Blogarama
New York Post
Telegraph.co.uk
Blogger: 404 - Page not found
HaloScan
Why There Are No GIF Files on GNU Pages
MetaPad
CBSNews.com
Chicago Tribune
Blogger.com
Financial Times
AltaVista
Creative Commons Deed
A Philosophical GNU - Free Software Foundation (FSF)
WebMask help - Contents
Main Page - Wikipedia
The New York Times
Fox News Channel
Google
Dougal's Slightly Less Funky Homepage
Blogwise
Italy Paper Money INDEX
Singapore Travel and Hotel Guide
http://ca.wikipedia.org/
Montana Local Hotels, Montana
Linux Today - Linux News On Internet Time.
bletype.org : Get Movable Personal
Minnesota Encyclopedia : Maps - Weather - Travel - History
Infoportal
Boing Boing
Alex King
Journalized
Main Page - Wikipedia, the free encyclopedia
Movable Type
Wikimedia Foundation
Slashdot
WordPress
Bollywood and the All India Encyclopedia
Hauptseite - Wikipedia
The Register
Level Double-A Conformance to Web Content Accessibility Guidelines
Mozilla Firefox
Portada - Wikcionario
http://validator.w3.org/check?uri=referer
Welcome to KikuMobile.com
Asinah.net
Tom's Hardware Guide
http://validator.w3.org/check/referer
W3C CSS Validator
HTML Validation Service
West Virginia Encyclopedia : Maps - Weather - Travel - History
http://jigsaw.w3.org/css-validator
Glavna stran - Wikipedija
Hafan - Wicipedia
World Wide Web Consortium
GNU General Public License (GPL)
A List Apart
W3C HTML Home Page
Free Software (SourceForge)
GNU Project
Web Standards Project
GNU Free Documentation License
Debian Best Practical Solutions, LLC
The Free Software Definition - GNU Project - Free Software
http://fr.wikipedia.org/
Wikipedia:Frontispicio - Wikipedia
http://www.fsf.org/
OpenOffice.org
The K Desktop Environment
Linux.org
Opera Software
Welcome to SUSE LINUX
Python Language Website
XFree86
The GIMP
HTTP/1.0 200 OK
Infoportal

Image source: Chris 73, Wikipedia

Practice:

What is the world wide web?

There are more than 2 billion websites accessible on the Internet today. Every website is written in **HTML**, and our personal computers can view those websites thanks to **HTTP**.open networks.

- For a deep dive into **Hypertext Transfer Protocol**, Click Here. Remember to Take Notes in your Notebook!
- For added Practice, click here
- For a deep dive into **Hypertext Transfer Protocol Secure**, Click Here. Remember to Take Notes in your Notebook!
- For added Practice, click here

Privacy on the web:

- You are not alone on the. Always remember, if you are on the WWW, you are Leaving Footprints!

  Click the above link and take notes on the presentation and video. Discuss your digital footprints with a friend or a family member. What sort of digital footprints are you leaving?

Privacy on the web:

The web is not private by default. Websites can use **cookies** to track user actions on their site and even across other sites. Browsers can track the **browsing history** of a user, their search queries, and even their form inputs.

Cookies

An **HTTP cookie** is a small amount of text that helps a website track information about a user across multiple pages of the website, and personalize the user's experience on the website. If you've ever logged into a website, a cookie kept you logged in across multiple pages. If you ever added items to an online shopping cart, a cookie remembered the cart contents during your shopping session.

Let's walk through how a cookie is actually set. *(If you're feeling fuzzy on the HTTP protocol, this is a good time to review HTTP & HTML.) Click Here for a Deep Dive*

Privacy on the web:

Let’s Stop and

Practice what you

have learned so far.

Clock on the Stop

Sign for Added

practice!

Quiz 2

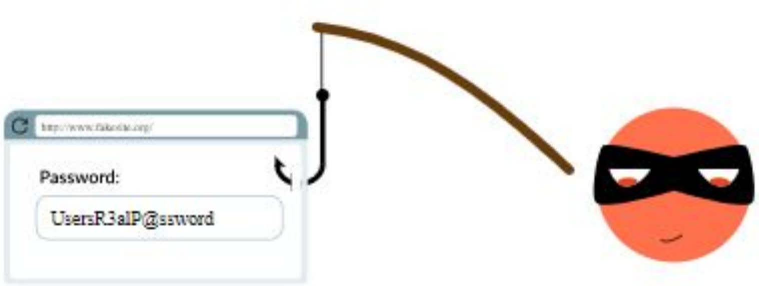
Click here and quiz yourself over what you have learned about the World Wide Web and Privacy on the Web.

How does cyber crime happen?

A global network of computers is an amazing thing for communication and collaboration. Unfortunately, it's also a very tempting thing for cyber criminals.Computers can be attacked in many ways, and the Internet makes attacks much easier. Cyber criminals can find ways to install malware into machines, and if that malware is a virus or worm, it can quickly spread to many more files or machines. Once malware is on a machine, it can steal data or use up valuable resources.The users of computers—all of us!—are also vulnerable to attack. Cyber criminals can use phishing attacks to trick us into installing malware on our machines or giving access to our private data.

How does cyber crime happen?

In the next video , engineers show some of the ways that cyber criminals attack the vulnerabilities of computers and humans. After that, we'll dive deeper into the attack vectors and protection mechanisms.



How does cyber crime happen?

- Click here for a deep dive into Computer Malware and Attacks
- Click here for added practice
- Click here for a deep dive into Phishing and password attacks
- Click here for added practice

The Internet Unit Test

Click here and Test yourself. Great Job, you’ve mastered the Internet!!

The Pledge

To safely use the tools and knowledge that you will acquire in your study of computer science requires good judgement and a commitment to do the right thing.

Read and write the following contract in your notebook. By signing below, you are indicating that you have read, understood, and agreed to all of the following statements. If you choose to sign the form, return the form to your teacher.

1. I will never use my knowledge of programming and computer science to access data or computing resources that I am not authorized to access.
2. I understand that accessing computing resources without permission can be a felony-level crime under the Computer Fraud and Abuse Act and other federal and state laws.
3. I understand that penalties even for minors have included felony conviction, prison, and large fines to pay computing professionals to attend to a company's entire computing network on the basis of small interruptions in the company's service.
4. I understand that a single instance of penetration testing without permission is sufficient for a lifetime ban from professional cybersecurity positions.