



Computer Science Virtual Learning

PLTW Computer Science Principles

April 29, 2020



Lesson: April 29, 2020

Learning Target:

The goal of this lesson is for students to personally invest in maintaining online security and to improve their personal cybersecurity hygiene. Students focus on cybersecurity from the perspectives of the user, the software developer, businesses, the nation, and the citizen.



Introduction

With current health crisis, now like no other time in history, our nation has a dire need for people – as employees, citizens, and consumers—to practice good hygiene, hand washing, etc. But what does cyber-hygiene that mean? Why is it so important? What are the worst-case consequences of not practicing good cyber-hygiene?

Write your thoughts in your notebook and discuss your ideas with your family and friends.

Watch this Video: What is Cyber-Hygiene?





Practice: Cyber-Ethics

Consider the following two scenarios. In each scenario, decide if Rob has behaved unethically. If his action was unethical, explain why and describe what you think the consequences might be. If his action was ethical, describe what additional actions would have crossed the line into unethical behavior.

Write your thoughts for each scenario in your notebook. Compare your answers with the links provided



Practice: Cyber-Ethics

Scenario 1

Rob is sitting next to Tanya, who is entering a password on a website. Rob watches her type and memorizes her password. He uses it once to see if it really was her password and immediately logs out. He never uses it again.

[Compare your answers here](#)



Practice: Cyber-Ethics

Scenario 2

Rob is given access to a computing network. He discovers that the computing system allows him to look at directory listings of other users' files. He wonders if he'd be able to read their email. Without any special effort, he succeeds in listing the titles of other people's email messages. He decides not to try to read one of the messages. He does not report any of this to the system administrator.

[Compare your answers here](#)



Practice: Cyber-Ethics

ACM's Code of Ethics

The Association for Computing Machinery (ACM) is the leading professional organization for computing specialists. Read the text of the ACM's Code of Ethics, Parts 1.7 and 2.8, at <https://www.acm.org/about/code-of-ethics>. Were Rob's actions described in the previous step unethical according to the ACM Code of Ethics? Explain your opinion, citing specific wording from the Code of Ethics.

[Compare your answers here](#)



More Practice: Types of Malware

The objective of an attacker is usually to install malware, adware, or spyware. The term malware is sometimes used to include all three of these categories. Review the presentation [Types of Malware](#). Summarize what distinguishes the categories from each other in your notebook.

More Practice: Types of Malware

Often, a vulnerability in software is exploited to install malware. A vulnerability is an error or oversight in software that allows a hacker to access or affect computing resources. An exploit is particular input or data that takes advantage of the vulnerability. Look over and read about the following list of attacks and malware families.

- [Ping of death](#)
- [Flame](#)
- [SQL injection](#)
- [Salinity](#)
- [MyDoom](#)
- [Man in the middle](#)
- [ILOVEYOU](#)
- [ZeroAccess](#)
- [Samy worm](#)
- [Stuxnet](#)
- [Melissa virus](#)
- [Conficker](#)

More Practice: Types of Malware

Summarize each of the types of malware in your notes and choose one type of malware to create a presentation about. Refer to the virtual learning lesson for [April 24th, How to Create a Presentation](#) if you are confused about how to start your presentation. Share your presentation with your family and friends.

- [Ping of death](#)
- [Flame](#)
- [SQL injection](#)
- [Salinity](#)
- [MyDoom](#)
- [Man in the middle](#)
- [ILOVEYOU](#)
- [ZeroAccess](#)
- [Samy worm](#)
- [Stuxnet](#)
- [Melissa virus](#)
- [Conficker](#)



In Conclusion

Gail Brown wants to use the Internet to pay a bill from CoolStore. She knows her username and password for the CoolStore company's website for paying bills online. Gail considers each of the following methods for paying her bill. Describe the attack that could be underway in each applicable case. Check your solutions with the link provided



In Conclusion

a. Gail googles the name of the “coolstore” and follows the first link provided. It looks like the familiar website. It is using http. It asks for her username and password.

Check your solutions [here](#)

b. Gail gets an email reminding her to pay her bill and follows the link to <https://coolstore.com>. That website looks familiar and asks for her username and password.

Check your solutions [here](#)



In Conclusion

You get an email from a friend:

Check this out: <http://lkjfdg.ru/7gfd9>

What should you do, and why?

Check your solutions [here](#)