



Computer Science Virtual Learning

PLTW Computer Science Principles

April 28, 2020

Lesson: April 24, 2020

Learning Target:

By the end of this lesson, students should be able to:

Identify existing cybersecurity concerns and potential options to address these issues with the internet and the systems built on it.



Introduction

Consider an exchange between Alice and Bob. Alice sends Bob a message, and gets a response from Bob – or so she thinks.

How can Alice know that the reply is from Bob and not some lurker in the Internet?

How can she be sure her message even got to Bob?

Packets on the Internet hop from host to host, taking multiple routes past potentially hostile parties. How can Alice and Bob exchange private information like credit card numbers and be certain that no one eavesdropped on their communication?

Write your thoughts down in your notebook and discuss them with a friend or family member.

Watch this Video: Encryption and Public Keys



Practice: Caesar Cipher

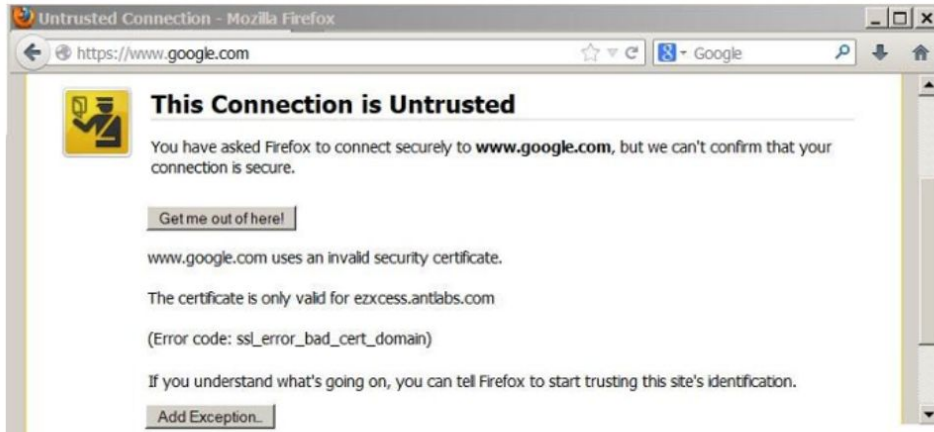


Practice: Caesar Cipher

You will first need to create a Python workspace on Repl.it. Try watching a [youtube tutorial](#) if you are uncertain as to how to do this. You will be working with the starter code, cipers.py and activity instructions, found [here](#), to create your own algorithm to decode a Caesar Cipher, using Python.

More Practice

You typed `https://www.google.com` in the address bar in your browser and received the notice shown below. Choose “Get me out of here!” or “Add Exception.” Explain why you made the choice you did. Write your Thoughts in your notebook and discuss them with a family member or friend



Explain the relationship among the following concepts.

- The <https://> designation in your browser
- [Public key encryption](#)
- [SSL certificate](#)
- [Certificate authority](#)
- [Domain name](#)