**Hashing Lab**

A foundational knowledge of the three tiers of cybersecurity includes an understanding of hashing and the basic principles of digital integrity within a system.

View "3-2 Hashing Lab," from the video playlist located in Class Resources. 

**Part 1:**

Provide the following screenshots:

·      On the Kali Linux VM, create MD5, SHA256, and SHA512 hashes.

·      Using PowerShell on the Windows 10 VM, create MD5, SHA256, and SHA512 hashes.

·      Demonstrate the creation of a hash collision using SHA1. 

**Part 2:**

             Write a 250- to 500-word summary addressing the following:

·      Describe symmetric and asymmetric encryption and provide examples.

·      Explain why hashing or message digest is important.

·      Describe what a collision is and how it affects hashing.

·      Explain what the difference is between the MD5, SHA256 and SHA512 hashing algorithms, and why might you want to use one over the other.

·      Explain PKI and data security and describe what role cryptography plays in PKI. Identify some common uses for the technology and how it is important in keeping information secure.

·      Compare authentication, authorization, and nonrepudiation.

Place all screenshots in a Microsoft Word document and submit it to the assignment dropbox. When submitting screenshots as part of your assignment, you must always include a full image of your desktop window, including the date and time in the lower right-hand corner of the Windows desktop or the upper-right corner of the macOS desktop.

While APA style is not required for the body of this assignment, solid academic writing is expected, and documentation of sources should be presented using APA formatting guidelines, which can be found in the APA Style Guide, located in the Student Success Center.

This assignment uses a rubric. Review the rubric prior to beginning the assignment to become familiar with the expectations for successful completion.

You are required to submit this assignment to LopesWrite. A link to the LopesWrite technical support articles is located in Class Resources if you need assistance.