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# Practices for Secure Software Report

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## Document Revision History

| **Version** | **Date** | **Author** | **Comments** |
| --- | --- | --- | --- |
| **1.0** | **10/13/2023** | **Cali Mullen** |  |

## Client



## Instructions

Submit this completed practices for secure software report. Replace the bracketed text with the relevant information. You must document your process for writing secure communications and refactoring code that complies with software security testing protocols.

* Respond to the steps outlined below and include your findings.
* Respond using your own words. You may also choose to include images or supporting materials. If you include them, make certain to insert them in all the relevant locations in the document.
* Refer to the Project Two Guidelines and Rubric for more detailed instructions about each section of the template.

## Developer

Cali Mullen

## Algorithm Cipher

## Artemis Financial wants to modernize their custom web browser by updating their security measures. Specifically, adding encryption to their communications to ensure a secure connection. The goal is to ensure no unwanted access is gained to intercept customer or company information. Meaning, the ideal cipher for this project would be SHA-256 with 256 bits to encrypt. SHA-256 allows new inputs to be encrypted without risking access to previously encrypted information. SHA-256 offers the highest level of security while remaining accessible.

## Certificate Generation

Insert a screenshot below of the CER file.

A computer screen with white text

Description automatically generated

## Deploy Cipher

Insert a screenshot below of the checksum verification.

A screenshot of a computer

Description automatically generated

## Secure Communications

Insert a screenshot below of the web browser that shows a secure webpage.

A screenshot of a computer

Description automatically generated

A screenshot of a certificate

Description automatically generated

## Secondary Testing

Insert screenshots below of the refactored code executed without errors and the dependency-check report.

A computer screen shot of text

Description automatically generated

A screen shot of a computer code

Description automatically generated

A computer screen shot of a check

Description automatically generated

A screenshot of a computer

Description automatically generated

## Functional Testing

Insert a screenshot below of the refactored code executed without errors.

A computer screen shot of text

Description automatically generated

A screen shot of a computer code

Description automatically generated

## Summary

For this project, I used the SHA-256 algorithm cipher to encrypt the communications on the Artemis Financial web browser. SHA- 256 offers the highest level of security while remaining at a low chance of collisions. While reviewing the code, ensuring the system was fully functional while working with SHA-256 was essential. For future use, I would recommend running dependency checks on the cipher at least once a month to ensure everything is running the way it was originally designed to, and no security vulnerabilities are discovered.

## Industry Standard Best Practices

## For this project, I put a lot of focus in preparing how I was going to implement the requirements set by Artemis Financial. Using my planning and organizational phase to get my project in order helped me to execute everything easily and fill out the template accordingly. Keeping notes on what needed to be adjusted or refactored enabled me to quickly find and sort out any issues I was having throughout the project.