# CS 305 Module Five Coding Assignment Checksum Verification Template

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## Instructions

Using the instructions from theModule Five Coding Assignment Checksum Verification Guidelines and Rubric, replace the bracketed text with the relevant information in your own words.

## Algorithm Cipher

The algorithm I recommend that has a very low chance of collision is the SHA-256 encryption algorithm.

## Justification

The Secure Hash Algorithm (SHA) 256 creates a 256 bit hash, and is one of the most widely used in the industry. When two different hash keys go to the same index, that is called a collision, which can cause the program to break if a method for resolving the conflict isn’t created. Luckily, the SHA-256 algorithm is able to prevent this. There are other SHA algorithms like SHA-512, but it requires significant more compute to produce a hash value.

## Generate Checksum

For the life of me, I could not get this checksum program to run. I did multiple clean installs of maven and every time I encountered a new error. I could never get it to recognize springboot even though springboot was in the plugins in the pom.xml file. I kept running the maven build configuration using spring-boot:run, and I could never get it to function correctly, nor do I really understand any other method of running the application in Eclipse

## Verification

A black screen with white text

Description automatically generated

Resources:

Jena, B. K. (2024, November 17). *What is SHA-256 algorithm: How it works and applications: Simplilearn*. Simplilearn.com. https://www.simplilearn.com/tutorials/cyber-security-tutorial/sha-256-algorithm