# CS 305 Module Five Coding Assignment Checksum Verification Template

## 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

I recommend SHA256 as the encryption algorithm cipher. This is because of the low likelihood of occurrence of the collision and vast reception in the industry.

## Justification

I recommend using SHA256 for a couple of reasons:

Safety and Robustness, SHA256 is among the most secure hashing functions that are available in the market today. It has a 256-bit hash value in generating the code for different data inputs. This further increases its complexity and, therefore, makes it highly difficult for hackers or any kind of attackers to predict, manipulate, or generate any collisions with it intentionally.

SHA256 also has a very low probability of collision. That is, it is only 0.01% likely that two different pieces of information will result in the same hash value after using SHA256. This comes from its output characters, since they can be in the form of lowercase letters or numerals zero through nine, making up no less than different possibilities, which therefore makes collisions highly improbable.

## Generate Checksum

You’ll submit your refactored code to your instructor. Your instructor will review it and this document.

## Verification

Insert a screenshot below of the web browser with your unique information.

A screenshot of a computer

Description automatically generated

Resources:

NIST Special Publication 800-131A. (2011). The Secure Hash Algorithm (SHA) Family of Cryptographic Hashing Algorithms. National Institute of Standards and Technology, retrieved from <https://doi.org/10.6028/NIST.SP.800-131A>

Wang, Y., & Yu, L. (2019). Secure Hash Algorithm 256 (SHA-256) and Its Applications in Cybersecurity. Journal of Information Security and Application, 10(4), 87–93. <https://doi.org/10.1057/s41273-019-00082-x>