# CS 305 Module Two Written Assignment Template

## Instructions

Replace the bracketed text with the relevant information in your own words. If you choose to include images or supporting materials, make certain to insert them in all the relevant locations in the document.

## Areas of Security

The main areas of security to assess in this web application are architecture review, input validation, API interactions, cryptography, client/server communication, and code error handling. Architecture review can ensure the system is designed with secure boundaries and data flow. Input validation prevents injection attacks and unsafe data processing. Secure API interactions protect against unauthorized data exposure. Cryptography safeguards sensitive information in storage and transit. Finally, reviewing client/server design and error handling ensures resilience against exploits that target distributed components or poor coding practices.

## Areas of Security Justification

Each security area is critical as it addresses a unique layer of risk in the web application. Architecture review is essential to identify insecure design choices and weak trust boundaries before they become systemic flaws. Input validation and secure data representation protect the application from SQL injection, cross-site scripting, and buffer overflow attacks. Secure API interactions are needed as APIs often handle sensitive data and are a common entry point for attackers. Cryptography and secure client/server communication can ensure confidentiality and integrity of the data, while code error handling prevents information disclosure and reduces the chance of exploitable failures.

## Code Review Summary

Reviewing the code the POM.xml file is using an outdated version of webmvc instead of the latest release. For the Greeting class, the get and set methods are available with parameters set to private, but the GreetingController does not implement the same methods. Additionally, the greeting method requires sanitization and length validation to prevent potential buffer overflows. The API also lacks input validation and needs to be sanitized to ensure proper security.

## Mitigation Plan

* Upgrade to the latest version of webmvc.
* Implement string length validation in GreetingController.java.