# 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 areas of security relevant to the software application according to the Vulnerability Assessment Process Flow Diagram (VAPFD) are as follows:

* Input Validation: Secure input and representations
* APIs: Secure API interactions
* Code Quality: Secure coding practices/patterns

## Areas of Security Justification

Input validation was chosen because the application needs to be able to securely verify all input. APIs were chosen because applications built using the Spring framework support secure API interactions secure client/server communication is required. Lastly, code quality was chosen because it is a superset of input validation and secure API interactions.

## Code Review Summary

Upon reviewing the code base for the application being developed, a number of issues present themselves within the code. First, the Spring framework version is out of date, which is seen in the pom.xml. Second, there is no input validation in GreetingController.java. At the very least we should have the application check the length of the string and limit how many characters the string is willing to allow. Additionally, we could also limit the type of characters the string is willing to accept, for example, we could make sure that no reserved characters are able to be taken in from as input. We could also ensure that the application does not allow reserved words.

Also, important to note is that there is no method of authentication that has been built into the application at this point. If this application were running on a live server, anybody would be able to gain access to the application and potentially cause harm.

## Mitigation Plan

* The org.springframework.data version is out of date and should be updated to the current version, which is 3.2.4
* A method for input validation should be implemented, and at the very least have a set length of characters the string is willing to accept, which helps to ensure large amounts of data cannot be passed in, which could result in errors that cause defects and lead to failures.
* Because the spring framework provides security methods (encryption and authentication) we should consider implementing authentication into the application to prevent unauthorized access to the web application. Ensuring the application is built with a RESTful state in mind will help ensure secure connections and secure transfers of data.