# CS 305 Module Two Written Assignment

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**Security Review and Mitigation Plan**

## Areas of Security

After reviewing the prompt, I feel that the main areas of security that should be focused on are Input Validation, APIs and Client/Server. I feel these areas are important because they are each related to how the user interacts with the system, and can be cause for unexpected and edge case vulnerabilities.

## Areas of Security Justification

Input Validation:

This is the primary way that the user interacts with the system, and can be used by bad actors to access the codebase of the program via attacks such as privilege escalation. Using this technique, a hacker can access administrative functionality and gain control of the program, or to access user data.

APIs:

Using unsecured third party API’s in your secure code can introduce unforeseen vulnerabilities. It is important to know what security considerations are being taken by the API before it is introduced into the codebase. You should check if the host of the API does regular security updates, as well as be aware of any breaches in security they have experienced in the past.

Client/Server:

A review of the interaction between client and server, as well as the code base on both the front end and back end of the program, will provide a more complete view of possible breakdowns in security when transmitting information over a network.

## Code Review Summary

Possible Vulnerabilities:

1. The program is using Java version 1.8 (JDK 8 according to Oracle documentation) which is an outdated version even with Long-Term Support. The most recent LTS version is JDK 21 and thus should be used for the best access to secure updates and features.
2. It looks like the version of the spring framework dependency being used is V 2.6.5 while the latest version is 4.3.5. Using an older version of the framework can cause issues with a lack of regular security updates

## Mitigation Plan

Update products to most recent versions. The project should be migrated to JDK 21 for most recent LTS support, and the version of Spring being used should be updated to the most recent version as well (4.3.5 at time of writing)