The artifact is a Contact, Task, and Appointment Management System originally developed in CS 320: Software Test Automation & QA. It consists of Contact, Task, and Appointment classes that store and manage contact, task, and appointment information such as ID, first name, last name, phone number, address, and date. The system also includes ContactService, TaskService, and AppointmentService classes that handle operations like adding, updating, and deleting contacts, tasks, and appointments. This project was first created in 2024 as part of a course module focused on test-driven development and in-memory data handling.

I selected this artifact because it demonstrates my knowledge of object-oriented programming, input validation, and unit testing. It also highlights my ability to write clean, maintainable code and apply automated testing through JUnit. For the enhancement, I implemented a ValidateInput utility class to centralize input validation logic. This helped reduce code duplication and improved overall maintainability. These improvements better align the code with real-world expectations of robustness and usability.

I met my course outcomes of developing and enhancing software solutions using secure coding best practices and industry standards and demonstrated effective software testing practices through the use of automated test frameworks. This enhancement reinforces my grasp of defensive programming and test-driven development. I do not currently have updates to my outcome coverage plan. This enhancement aligns directly with the originally identified outcomes for Category One.

Enhancing this artifact gave me a deeper appreciation for the importance of validation and input constraints in software design. Refactoring the validation logic into a dedicated utility class taught me how to improve code readability, reuse, and maintainability. One of the challenges I faced was making sure there was consistent enforcement of all constraints, especially across the constructor and setter methods. Overall, this process helped me build stronger habits in modular design and quality assurance.