Alexandra Delarosa

CS 499 Milestone Two

The artifact I have chosen to enhance for the Software Design and Engineering category of the e-portfolio is my final project for CS 320 Software Test, Automation & QA. The project is a contact management system, which delivers functionalities such as storing, updating, and deleting contact information. The functionalities are validated by comprehensive JUnit tests. I created the artifact earlier this year during the March-April term. I chose this artifact to showcase my skills and abilities in software development principles such as object-oriented programming and software testing. JUnit tests are performed on the Contact and ContactSerivce class which includes, boundary conditions, error scenarios, and positive cases. The Contact class encapsulates contact information which is accessed through getter and setter methods. I improved the artifact by enhancing test coverage such testing scenarios will null values, adding an invalid contact, and more. I implemented a Singleton design to ensure only one instance of the ContactSerivce is created in the application. I also implemented custom exceptions such as InvalidContactIdException and InvalidPhoneNumberException to handle specific validation errors. I also improved documentation by adding comments to the code. The enhancement meets the course outcome "Demonstrate an ability to use well-founded and innovative techniques, skills, and tools in computing practices for the purpose of implementing computer solutions that deliver value and accomplish industry-specific goals." I utilized techniques and tools such as the Singleton Design pattern and the JUnit testing frameworks. I demonstrated skills such as software validation and testing.