Self-Assessment

Throughout my journey in the Computer Science program at Southern New Hampshire University, I have grown from a technical support professional into a confident full-stack and security-minded developer. The process of building my ePortfolio and enhancing three key artifacts has helped me strengthen my design, analytical, and problem-solving abilities while applying industry-standard practices in secure software development. This final portfolio demonstrates my ability to design scalable software, implement efficient algorithms, and manage secure database operations.

My first artifact, the InvenTrack Mobile App from CS-360, represents my growth in software design and engineering. This project evolved from a simple Android application into a fully refactored solution following the Model-View-ViewModel (MVVM) pattern. I implemented encrypted storage using EncryptedSharedPreferences, secure password hashing with PBKDF2, and role-based user access to ensure data protection. These enhancements improved modularity, maintainability, and usability while applying core principles of secure mobile architecture. Through this work, I demonstrated my ability to apply object-oriented design, integrate security practices, and align user interface design with modern usability standards.

The second artifact, the Course Advising Program from CS-300, highlights my skills in algorithms and data structures. By enhancing the program with a hybrid Binary Search Tree and HashMap structure, I optimized performance for course lookup operations and improved scalability for larger datasets. I conducted Big-O analysis to evaluate algorithmic efficiency, implemented cycle detection for data integrity, and documented trade-offs between runtime complexity and memory use. This project strengthened my analytical thinking and my ability to select the most appropriate data structures for real-world problems.

The third artifact, the Grazioso Salvare Dashboard from CS-340, demonstrates my capability in database design and secure full-stack development. I implemented a TLS-secured MongoDB Atlas connection, added JSON Schema validation, and integrated role-based

access control (RBAC) for data security. By using Dash and Flask to create an interactive data visualization dashboard, I connected a real-time database to a professional front-end interface. These enhancements demonstrated my ability to design secure, efficient, and user-centered data systems.

Across all artifacts, I demonstrated my ability to collaborate, communicate, and apply computer science principles to complex problems. In every improvement, I followed version control best practices in GitHub, applied Agile iteration strategies, and documented my progress clearly for both technical and non-technical audiences. I have learned to anticipate security vulnerabilities during the requirements phase, validate user input to protect data integrity, and test systems for both functionality and performance.

Completing this program has shaped my professional goals and confirmed my passion for cybersecurity and software engineering. I now approach every project with a security-first mindset and an appreciation for the balance between innovation, usability, and protection. The combination of skills I have gained in full-stack development, algorithmic problem solving, and secure data design prepares me to contribute immediately in roles such as Cyber Threat Operations Engineer or Secure Software Developer. I am proud of the professional growth reflected in this portfolio and the foundation it provides for continuous learning and advancement in the technology field.