CS 499

Narrative

The artifact selected for my ePortfolio is the Event Tracker Android Application, originally developed during my earlier coursework as a mobile application project. The application allows users to create, view, update, and delete events while storing event information locally using an SQLite database. Core features include user authentication, event data display through a RecyclerView, and SMS-based notifications related to upcoming events. The artifact was enhanced during CS 499 to improve its structure, security considerations, data handling, and overall software quality.

I selected the Event Tracker Android Application because it demonstrates a comprehensive range of skills across software engineering and design, algorithms and data structures, and database integration, making it a strong single artifact suitable for all three categories. From a software engineering perspective, the application showcases modular design, separation of concerns through activities, adapters, and data models, and adherence to Android development standards. From an algorithms and data structures standpoint, the app uses collections, control flow logic, and efficient data traversal to manage and display event information. From a database perspective, the application integrates SQLite to persist user and event data with CRUD functionality. The artifact was improved by refactoring code for clarity, adding error handling and input validation, improving database query logic, and strengthening permission handling for SMS functionality, which enhanced both robustness and security.

The enhancements made to this artifact align with the course outcomes identified in Module One. Specifically, the project demonstrates progress toward designing and evaluating computing solutions using algorithmic principles and industry-standard practices, implementing professional-quality software solutions, and developing a security mindset. Enhancements such as improved database access patterns, validation of user input, safer permission handling, and clearer documentation support these outcomes. No major changes were required to my original outcome-coverage plan, as the enhancements followed the roadmap established during the code review, with refinements made as needed during implementation.

Enhancing the Event Tracker Android Application reinforced the importance of reviewing existing code critically rather than focusing solely on new development. Through this process, I gained deeper insight into refactoring for maintainability, improving data integrity, and anticipating potential security issues such as improper input handling or unsafe permission use. One of the primary challenges was ensuring that enhancements did not introduce regressions while improving structure and functionality. This experience strengthened my understanding of professional software development workflows and highlighted the value of iterative improvement, documentation, and defensive programming. This artifact reflects both my technical growth and my ability to communicate and justify design decisions, making it a strong representation of my skills in my ePortfolio.