

Foster Hare

CS-499

Professor Martinez

12/10/2025

Capstone Artifact Narrative

EventBuddy is an Android mobile application I originally created in CS-360 to allow users to create, edit, and manage personal events using a local SQLite database. I chose this artifact for my ePortfolio because it showcases significant growth in software design, data handling, and structured problem solving. As I enhanced the project during CS-499, I focused on improving the software's architecture, strengthening its algorithmic design, and refining how it interacts with data storage systems.

From a **Software Design and Engineering** perspective, the enhancements centered on reorganizing the codebase to improve clarity, maintainability, and overall structure. I refactored core components such as the DBHelper, the event model, and the UI activities to follow clearer separation of concerns and more modular design principles. I also improved the workflow between screens, ensuring smooth transitions and consistent state management. These updates demonstrated my ability to evaluate an existing software system, redesign components for better structure, and apply engineering practices that lead to cleaner and more scalable mobile applications.

In the area of **Algorithms and Data Structures**, I strengthened how EventBuddy handles event retrieval, sorting, and display logic. I improved the efficiency of reading data from the database and updating the RecyclerView by ensuring the adapter lifecycle was handled

correctly and by optimizing how event objects were processed and passed between activities. These enhancements showed my ability to use algorithmic reasoning to make the app more responsive and reliable while working with structured data models that communicate cleanly with the UI.

For the **Databases** growth area, I expanded and improved the SQLite database layer by refining the schema, updating queries, and ensuring consistent and secure CRUD operations. I strengthened the interaction between the database and the UI by improving data validation and ensuring accurate, efficient retrieval of stored events. Through these enhancements, I demonstrated a strong understanding of database design, query optimization, and the importance of safe, well-structured data handling within a mobile environment.

Overall, the process of enhancing EventBuddy allowed me to apply advanced concepts in software engineering, algorithm design, and database management. I learned how to revisit an earlier project and meaningfully improve it through better architecture, more efficient logic, and stronger data handling practices. These enhancements show my readiness to develop real-world software that is structured, efficient, and reliable.