Southern New Hampshire University

CS 499 – Computer Science Capstone

4-2 Milestone Three: Enhancement Two: Algorithms and Data Structure

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09/27/2025

The artifact I chose for this milestone is my weight‑tracking app, originally built in CS‑360 Mobile Architecture and Programming. The app lets users log their daily weight, set a goal, and get notified when they reach it. I selected this project because it gave me a chance to show my skills in algorithms and data structures, especially around how data is stored, updated, and displayed in a reliable way.

To be honest, I think I already completed most of the required issues back in the last milestone. At the time, I didn’t realize the project was broken up into separate parts, so I tried to tackle all the categories at once. That explains why it took me so long and why I struggled so much with that milestone, I was basically doing the whole thing in one shot. The upside is that now my artifact is already in a strong place for this milestone.

For the algorithms and data structures category, I enhanced the app by adding a unique ID to each weight entry and tying all add, edit, and delete actions directly to the database. Before, edits and deletes only changed the list in memory, which meant the data disappeared when the app restarted. Now, the logic is tied to persistent storage, and the UI refreshes from the database so the grid always stays in sync. I also fixed the update logic, so entries are tracked by ID instead of by date, which makes the data more reliable.

These changes show that I can apply algorithmic principles in a real project. I had to think about how the data structure (the list of weight entries) connects to the database and how to make sure the UI always reflects the correct state of the data. I also learned how important it is to separate concerns, keeping UI, validation, and database logic in their own places makes the code easier to maintain and extend. The biggest challenge was debugging the refresh logic and making sure the UI updated correctly after edits or deletes, but once I tied everything back to the database, it worked smoothly.

One feature I also built in is the notification system that can send an SMS when a new weight is added or when the goal weight is reached. Right now, the code is in place with permission checks, but I see this as more of a future enhancement. It’s something I’d like to refine later as part of the app’s overall design and user experience.

Looking back, I can say I’ve met the outcomes I planned for this category. The app now demonstrates reliable data handling, persistence, and validation, which are all core parts of algorithms and data structures. What’s left for me is less about fixing broken logic and more about refining efficiency, strengthening security, and making sure the app is professional enough for my ePortfolio.