

Joseph Cassello Jr

CS 499 - 3-1 Journal

Professor Phillips

January 25, 2026

An ePortfolio serves as a digital proof-of-concept for my technical capabilities, allowing me to move beyond a static resume and demonstrate my proficiency to potential employers. In my current role as an IT Technician, I see the value of hands-on verification; an ePortfolio establishes a narrative of professional growth, showing I can build and secure modular tools rather than just troubleshoot existing ones. To maximize marketing potential while mitigating risk, I must ensure that any code I host publicly is scrubbed of intellectual property or sensitive credentials, such as specific school district data or API keys. While the visibility of a public portfolio promotes my skills in full-stack development, the primary downside is the risk of exposing proprietary logic or outdated "student" code that might contain security vulnerabilities if not properly refactored.

By addressing these risks through the implementation of industry-standard patterns and data validation, I am currently achieving **Course Outcome 3** (Design Trade-offs) and **Course Outcome 5** (Security Mindset). My upcoming work on the AVL tree and the Flask API will further demonstrate **Course Outcome 4**, which focuses on using innovative techniques and tools to deliver industry-specific value. These three outcomes represent the core of my technical specialization as I transition from support to development.

Checkpoint	Software Design and Engineering	Algorithms and Data Structures	Databases
Name of Artifact Used	Weight Tracking App (CS 360)	Binary Search Tree (CS 300)	Animal Shelter Project (CS 340)
Status of Initial Enhancement	Completed. Refactored code to the MVVM design pattern with LiveData.	Starting Monday. Preparing to upgrade the BST to a self-balancing AVL tree.	Not started yet.
Submission Status	Milestone Two (Enhancement One) submitted.	Planned for upcoming milestone.	Planned for the final milestone.
Status of Final Enhancement	Functionality is stable; architecture is fully modular.	Plan includes modifying node structure to include height variables.	Plan includes creating a RESTful Web API using Flask.
Uploaded to ePortfolio	Code uploaded to GitHub; narrative finished.	Pending implementation.	Pending implementation.
Status of Finalized ePortfolio	Ready for instructor review.	Pending.	Pending.

Progress Update:

I have successfully completed the first enhancement, which involved untangling the “monolithic” activity file of my mobile app and separating it into a repository and viewmodel structure. Dealing with the Android lifecycle was a challenge, but it successfully resolved data persistence issues during screen rotation.

Next, I am shifting my focus to the Algorithms enhancement, where I will implement AVL rotations to ensure efficient search times for the municipal data feed. This directly supports my goal of proving I can build high performance systems that scale.