BRYCE PAGEL

CS 499 Milestone One

Dr. Sherin Aly

7/20/2025

Milestone One

1. **Briefly describe the artifact. What is it? When was it created?**

The artifact I enhanced is batchRename (I’ve renamed it to Barron Pagel File Utilities in this update), a Python‐based utility originally developed around March 2025 to streamline the bulk renaming of discovery response files in my family-law paralegal firm. Prior to enhancement, the program opened directly into a single-purpose window that prompted the user to select a target folder and perform renaming or PDF-unlocking operations. It leveraged CustomTkinter for its GUI and pikepdf for PDF handling, with a backup feature dependent on an external 7zip installation.

1. **Justify the inclusion of the artifact in your ePortfolio. Why did you select this item? What specific components of the artifact showcase your skills and abilities in software development? How was the artifact improved?**

I selected batchRename for my ePortfolio because it embodies real-world software engineering challenges. By refactoring the code into a modular, multi-tool framework, I could demonstrate skills in scalable GUI design, separation of concerns, and dependency management. I replaced the 7zip external dependency with Python’s native zipfile module to simplify deployment and reduce security risk, and I reorganized each tool (renaming, PDF unlocking, and a placeholder for future database logging) into its own package.

1. **Did you meet the course outcomes you planned to meet with this enhancement in Module One? Do you have any updates to your outcome-coverage plans?**

I believe the enhancements made in this milestone meet and exceed my own plans established in Module One. Through this enhancement I fully met those goals: the main menu splash screen, coherent visual theme, and independent tool modules illustrate iterative design and architectural trade-offs.

1. **Reflect on the process of enhancing and modifying the artifact. What did you learn as you were creating it and improving it? What challenges did you face?**

Refactoring batchRename into a multi-tool suite was both rewarding and challenging. I hadn’t initially anticipated the full scope of changes required to isolate each tool into its own package, but completing that work has been a turning point. Now that the codebase is modular and organized, I’m genuinely excited about the potential for future enhancements—both those planned for this Capstone and those I envision beyond it.