

10-1 Journal: Reflecting on Key Learnings and Future Applications

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There were three types of challenges I can reflect on: journal writing, a few Zybooks modules, and the project. Early in the journal writing process, I realized the challenge wasn't just understanding the concepts but also conveying them in technical writing. I initially struggled with the scope of the assignments, sometimes overthinking the requirements. Consolidating my processes into the 2–3-page limit proved difficult, and I consistently hit the limit. To overcome this challenge, I leveraged a valuable resource, my husband, whose military background ingrained a “get to the point” mentality in all his communication. Although he lacked deep subject-matter expertise, he effectively grasped the core message and provided constructive advice. His guidance helped me refine my writing style to be more concise and direct. While it took time to find my rhythm, this experience has taught me to better organize my thoughts and synthesize complex ideas. Another challenge was that some Zybooks modules’ explanations, questions, and labs weren’t as straightforward and were often vague. I handled the challenge by repeating the activity a few times and seeking additional resources, such as books or videos, to better understand the material. Finally, the final project had many moving parts, and some I was not as familiar with or as comfortable taking on. To overcome this, I tried to tackle as many problem-solving tasks as I could on my own before seeking assistance. I found that trial and error was the best way to understand the concept, and I also see my strengths and weaknesses. Once I exhausted that, I would seek assistance from the tutoring resources, the modules, books, or videos. I picked up a lot of good tips that were helpful in this process, thereby helping me execute the final product.

As I transition into my career as a cybersecurity analyst, I am particularly drawn to the digital forensics’ aspect of the role. This involves identifying software vulnerabilities and conducting malware analysis, such as utilizing reverse engineering to deconstruct malicious code

and pinpoint the exact vectors exploited by attackers. While my coding journey began with HTML and later moved into JavaScript during a bootcamp, discovering Python was a turning point for me. I found Python's syntax more intuitive and logical than the complexities I faced with JavaScript. Even though my first experience with Python was brief, working through Zybooks and writing the technical journal improved my understanding and turned a challenging learning process into an enjoyable one. During the project, one of the things I found very helpful was using the virtual environment (venv). It was introduced to me by a tutor, who suggested it was a great way to manage dependencies and avoid conflict when you're working on more than one project. And now I know for any future projects.

Here are a few highlights of the programming principles and best practices I used during my software development assignments.

1. Single responsibility principle, where each module function should do only one thing, such as when you `validate_input`, it should check input validity.
2. The DRY method, where you don't repeat yourself to avoid duplicate logic throughout your code.
3. The K.I.S.S. method.
4. The separation of concerns means dividing a program into distinct sections, such as input handling, business logic, and output, so each part has one clear responsibility. And makes the program easier to maintain, test, and update.

Some best practices I applied include input validation and checking user input for correctness and safety (e.g., validating a number within range before signing it into the calculation). Then, I applied error handling (e.g., using *try-except* blocks or error codes to handle failures gracefully).

Another best practice was to use code comments with the hashtag to explain what has been done and to provide guidance or instructions for your code.