What is one program you wrote that you were particularly proud of during this course? Why were you proud? Explain.

I am really proud of the Chemical Calculator program I wrote. It was a big challenge to take the list of chemical elements from the assignment table and turn it into a readable list in Python, then into a dictionary. Figuring that out made me proud and more confident to work with larger amounts of data, thinking in real-world scenarios. I know that this is just the tip of the iceberg, and that makes me even more excited to learn more.

How might you use the skills you learned in this course in the future? This might include skills such as programming, problem-solving, debugging, etc.

I believe that the skills of dealing with data lists and dictionaries open up more opportunities to solve problems in real-world scenarios. Also, during this term, I often had to test the program, face problems, and develop step-by-step strategies to solve them. Sometimes I got totally lost and frustrated because of that, but this practice really helped me develop more resilience in my problem-solving skills.

Describe an experience from this class that has given you confidence that you can learn new programming skills in the future.

When I was about to finish my Chemical Calculator, I was running the program and getting an error in the output that I didn't understand. I was already really tired and very frustrated because I thought I had done everything right. I decided to give it one more day before going back to it. The next day, I asked a senior programmer for help. We were on a video call for over an hour; I explained everything, and he said everything should be fine, but the error persisted, and nothing seemed to solve the problem. He asked me to send him the file to give him more time to check it closely. Five minutes later, he called me back. My program was all right; it was just that the input should be case-sensitive, and the user needed to type a molecule in uppercase. I shouldn't force the input to be lowercase or uppercase. Chemical elements are case-sensitive, and a chemist should know that. I felt embarrassed and happy at the same time. I was proud of myself for doing it right. I can figure things out.

For the final project, I believe I went too far by choosing a hard task for the program. I got frustrated because I couldn't make the test program work properly. However, I am happy that I was able to connect my CRUD Python program to MySQL and perform operations in my database using my Python program. I will keep working on this project and finding better ways to improve it.