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

One program I was especially proud of in this course was the ****password generator****. This project required me to combine different programming concepts, such as randomization, string manipulation, and user input validation, to create a secure and customizable password generator.

I was proud of this program because:

1. ****It solved a real-world problem****—generating strong passwords is important for security.
2. ****It was customizable****—users could choose password length and include numbers/symbols.
3. ****It helped me understand randomness and security****—I learned how to use Python’s random and secrets modules effectively.

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.

The skills from this course will be valuable in many ways:

****Programming Fundamentals****: Understanding loops, functions, and data structures will help me write efficient code in any language.

****Problem-Solving & Debugging****: Breaking down problems and fixing errors will be useful in coding, technical jobs, or even everyday troubleshooting.

****Automation****: I can write scripts to automate repetitive tasks, saving time in work or personal projects.

****Future Learning****: These basics make it easier to pick up new languages or frameworks.

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

One key moment that boosted my confidence was ****debugging a complex loop in the password generator****. At first, my code sometimes produced passwords without numbers or symbols when requested. By carefully tracing the logic and testing step-by-step, I fixed the issue.

This experience showed me that:

****I can figure things out****—even if I get stuck at first.

****Debugging is a learnable skill****—patience and methodical testing lead to solutions.

****I can apply concepts to new problems****—understanding loops helped me fix the issue and improve the program.