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

**AzureBudgetLoader.py automates the ingestion of credit card transaction data into an Azure SQL database. It starts by looking for CSV files in a specified folder, identifies the type of credit card (Apple Card, Discover, or 5/3 Bank) based on the file name, and applies appropriate column mapping. It cleans and standardizes the data by renaming columns, converting dates, and ensuring all required fields are present. Then, it connects to the SQL database and inserts the cleaned data into a table called BudgetTracker. Once inserted, each CSV file is moved to an archive folder. Throughout the process, it logs each step, including successes and errors, for easy tracking and troubleshooting. This script was created by me as a personal project to not only test my skills in database creation, ETL processes, and data visualization, but to also serve for my own understanding and insight on the data. This project started February of 2025.**

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 decided to select this artifiact because it checked many of the aspects related to Software Engineering and Design. I believed that there was much that could be improved in this earlier script that related to this category. The skills and abilities showcased through this artifact was the ability to create readable, maintainable, and functional code that conformed to ETL and security best practices.**

**Enhancements that have been added are as follows:**

* **Optimized structure of python code**
  + **Restructured functions and classes to improve readability and maintainability**
    - **class TransactionProcessor:**
    - **class SQLUploader:**
    - **class BudgetLoaderApp:**
* **Created Azure Key Vault in Azure Portal to replace the hardcoded SQL connection credentials in the script.**

A screenshot of a computer

AI-generated content may be incorrect.

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 was able to meet the course outcomes I had planned to meet as follows:

* **Demonstrate an ability to use well-founded and innovative techniques, skills, and tools in computing practices for the purpose of implementing computer solutions that deliver value and accomplish industry-specific goals (software engineering/design/database)**
* **Develop a security mindset that anticipates adversarial exploits in software architecture and designs to expose potential vulnerabilities, mitigate design flaws, and ensure privacy and enhanced security of data and resources**

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?

**During the process of enhancement, I was able to learn a lot. This included the benefits of OOP in python code, and how it can enhance readability, useability, and maintainability when using the code in the future or sharing with other developers. Creating classes and restructuring my code was an example of this. I also learned the benefits of Azure Key Vault and how it can be used to securely store credentials such as database connection strings. This is important because if the code was accidentally leaked or published to the public, your credentials wouldn’t be leaked with the script. I encountered a challenge during this process mainly as I am fairly new to nagivating the Azure portal, and had to rely on online documentation to create these secret keys.**