### **Week 5 – Automation using Azure DevOps**

#### **Step 1: Preparing my Repository**

I created a Git repository in Azure Repos and pushed all my project files. I included my Week 4 script (Python\_Script\_week\_4.ipynb) and converted it into a Python script (run\_pipeline.py) for easier execution. I also added a requirements.txt file with dependencies such as PySpark, Delta, and Pandas.

#### **Step 2: Creating an Azure DevOps Pipeline**

I went to Azure DevOps → Pipelines and created a new pipeline connected to my repository. I selected the YAML option to define the build steps.

#### **Step 3: Writing the YAML Pipeline**

I wrote a YAML pipeline file (azure-pipelines.yml) that installs dependencies and runs my Python script.

trigger:

- main

pool:

vmImage: 'ubuntu-latest'

steps:

- script: |

python --version

pip install -r requirements.txt

python run\_pipeline.py

displayName: 'Run Supply Chain Analysis'

This ensured that every time I pushed code to the main branch, the pipeline automatically executed my script.

#### **Step 4: Logging Delay Summary**

I updated my Python script so that it calculates a delay summary (total orders, delayed orders, and average delay days). I wrote this summary into a log file called output\_log.txt. I also printed the summary in the console so it would appear in the DevOps pipeline logs.

#### **Step 5: Viewing Output Logs**

After running the pipeline, I checked the logs in Azure DevOps. I was able to see the delay summary printed in the console. I also downloaded the output\_log.txt file from the published artifacts to verify the results.

### **Deliverables I Produced**

* An **Azure DevOps YAML pipeline file** (azure-pipelines.yml).
* An **execution log file** (output\_log.txt) containing the delay summary.

### **Final Outcome by Week 5**

By the end of Week 5, I successfully automated my supply chain project.

* I built a pipeline that runs my Python analysis script.
* I logged delay summaries to a file.
* I received success notifications in the pipeline output.

This gave me a complete end-to-end system where orders and deliveries are tracked, delays are analyzed using Python and PySpark, and execution is automated using Azure DevOps.