***Explanation***

*WGU*

*Course Number: 602*

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I developed a complete MLflow pipeline for this project to predict airport flight delays. The pipeline consists of three main Python scripts: import\_data.py for loading and formatting raw flight data, clean\_data.py for cleaning and preparing the data, and poly\_regressor\_Python\_1.0.0.py for training and evaluating a Ridge Regression model. The MLflow library tracks model training, parameters, metrics, and artifacts. These scripts are connected through an MLProject file, which defines the pipeline’s execution sequence and environment.

I began by writing each script to handle a distinct step in the pipeline. I added MLflow tracking to the modeling script to log key parameters and outputs using mlflow.log\_param, mlflow.log\_metric, and mlflow.log\_artifact. The MLProject file defines a main entry point using the command python import\_data.py && python clean\_data.py && python poly\_regressor\_Python\_1.0.0.py, which allows the full pipeline to run through mlflow run. I also created a pipeline\_env.yaml file to list all required dependencies.

I kept getting an MlflowException: Cannot start run with ID error. I resolved this by making sure that the experiment ID in mlflow.start\_run() matched the experiment set with mlflow.set\_experiment() to avoid conflicts with the active run. Another issue I encountered was the MLflow UI failing to display because the frontend files were missing. To fix this, I reinstalled MLflow using pip install mlflow from PyPI. Lastly, I had to reinstall MLflow to get the port to start working after seeing repeated port conflicts when trying to launch the UI.

The final result was a fully working pipeline, tracked and reproducible through MLflow, with outputs that include performance plots, trained model files, and logged metrics.

MLProject PipelineA screenshot of a computer program

AI-generated content may be incorrect.

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