

WEEK-5: PIPELINE AUTOMATIONS WITH AZURE DEVOPS

Project: Employee Attendance & Productivity Tracker

Step-by-Step Azure DevOps Pipeline Setup Guide

Step 1 — Push Code to Your Repo

Ensure all files are in your Azure DevOps Git repo
Commit and push these files to your **main** branch.

Step 2 — Create a Variable Group for Secrets

You'll need to store DB credentials, MongoDB URI, and Azure Blob secrets securely.

1. Go to **Azure DevOps → Pipelines → Library**.
2. Click + **Variable group** → Name it: attendance-credentials.
3. Add these variables:
 - MYSQL_HOST → MySQL server hostname
 - MYSQL_PORT → 3306
 - MYSQL_DB → database name
 - MYSQL_USER → username
 - MYSQL_PASS → password (**mark as secret**)
 - MONGO_URI → connection string (**mark as secret**)
 - *(Optional for Azure Blob)*
 - STORAGE_ACCOUNT
 - STORAGE_KEY (**mark as secret**)
 - STORAGE_CONTAINER
4. Save the group.

Step 3 — Create the Azure DevOps Pipeline

1. Go to **Azure DevOps → Pipelines → New Pipeline**.
2. Choose **Azure Repos Git**.
3. Select your repo.
4. Choose **Existing Azure Pipelines YAML file**.
5. Select azure-pipelines.yml from the **main** branch.

6. Click **Run** to test your pipeline manually.

Step 4 — Schedule the Pipeline to Run Every Monday

1. Go to **Pipelines** → **Select your pipeline**.
2. Click the **:** (**More options**) → **Triggers**.
3. Go to **Schedules** → Click **+ Add**.
4. Configure the schedule:
 - **Branch:** main
 - **Frequency:** Weekly
 - **Day:** Monday
 - **Time:** Example — 09:00 AM (IST)
 - **Always run, even if no changes** → Enable
5. Save the schedule.

Step 5 — Verify Reports and Logs

After the pipeline runs successfully:

1. Go to the pipeline → Select the latest run.
2. Scroll to the bottom → **Artifacts** → Download attendance_reports.
3. Inside, you'll get:
 - attendance_summary.csv
 - top_5_absentees.csv
 - lowest_performing_departments.csv
 - run_log.txt (contains timestamps, row counts, and success status)

Step 6 — Optional: Integrate with Power BI

If you uploaded reports to **Azure Blob Storage**:

1. Open **Power BI Desktop** → **Get Data** → Choose **Azure Blob Storage**.
2. Use the storage account + SAS key.
3. Select attendance_summary.csv.
4. Create visual dashboards for HR insights.

Final Outputs of the Pipeline

- **Automated every Monday**
- **Generates 3 CSV reports + run log**
- **Publishes Azure DevOps artifacts**
- **Optional upload to Azure Blob for dashboards**
- **Uses MySQL + MongoDB + PySpark + Azure DevOps**