WEEK 5: Pipeline Automation with Azure DevOps

Pre-requisites:

- Ensure **SSH Public Key** or **Personal Access Token (PAT)** for HTTPS is already configured.
- Install **Git**, **Python**, and **VS Code / any IDE**.
- Have your project folder ready on your local system, which includes:
    - Python file for **expense alert**
    - Azure pipeline YAML file

Step 1:

1. **Create Python and YAML Files in Local Project**

   Create a Python file(report_generator.py)

   ```
   import pandas as pd

   # Load final student-course-progress data
   df = pd.read_csv("final_Course _Output.csv")

   # Filter students with progress < 50%
   low_progress = df[df["progress"] < 50]

   # Save the report
   low_progress.to_csv("progress_report.csv", index=False)

   print("progress_report.csv generated.")
   ```

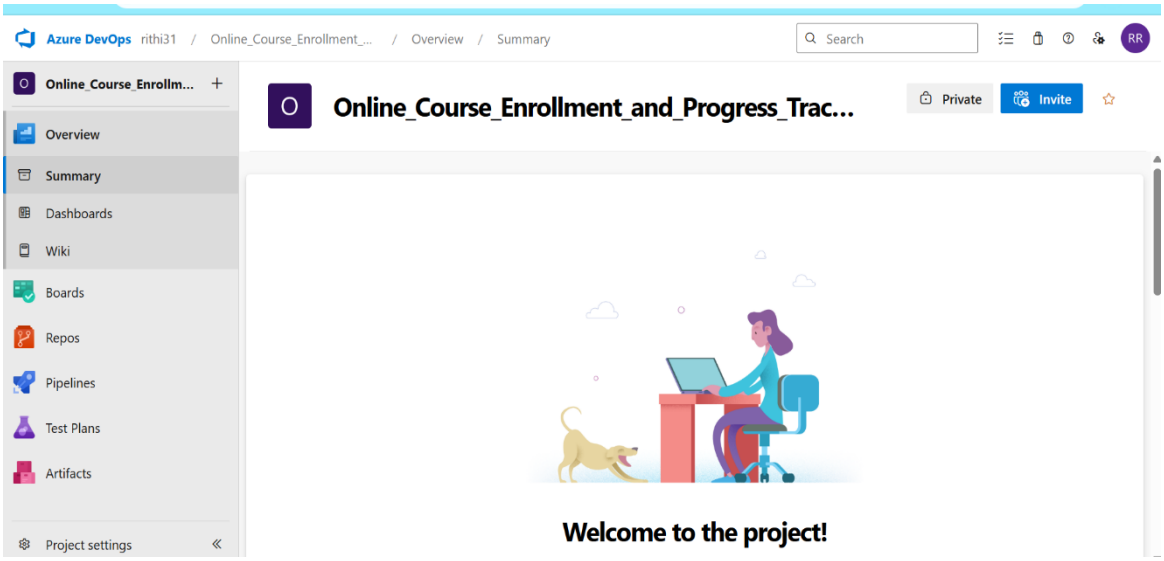
2. **Create a YAML file for Azure Pipeline (e.g. azure-pipelines.yml)**

   ```
   trigger:
     schedule:
       - cron: "0 8 * * 1"  # Runs every Monday at 8 AM UTC
         displayName: Weekly Monday Run
         branches:
           include:
             - main
   ```

```
    always: true

pool:
  vmImage: 'ubuntu-latest'

steps:
  - task: UsePythonVersion@0
    inputs:
      versionSpec: '3.10'

  - script: |
      pip install pandas
    displayName: 'Install pandas'

  - script: |
      python check_progress.py
    displayName: 'Run Weekly Progress Check'

  - task: PublishBuildArtifacts@1
    inputs:
      PathtoPublish: 'progress_report.csv'
      ArtifactName: 'WeeklyProgressReport'
      publishLocation: 'Container'
    displayName: 'Publish Weekly Progress Report'
```

Step 2: Create a New Azure DevOps Project

1. Go to Azure DevOps Portal.
2. Click **New Project** → Provide name and visibility → Click **Create**.
3. Navigate to **Repos** → Click **Clone** → Copy the **SSH** URL.



Step 3: Push Local Project to Azure Repo via SSH

Open **Command Prompt / Git Bash**, then run the following:

Go to the directory where your local project exists

cd path\to\your\project-folder

Initialize git repository

git init

Add files to git

git add .

Commit the files

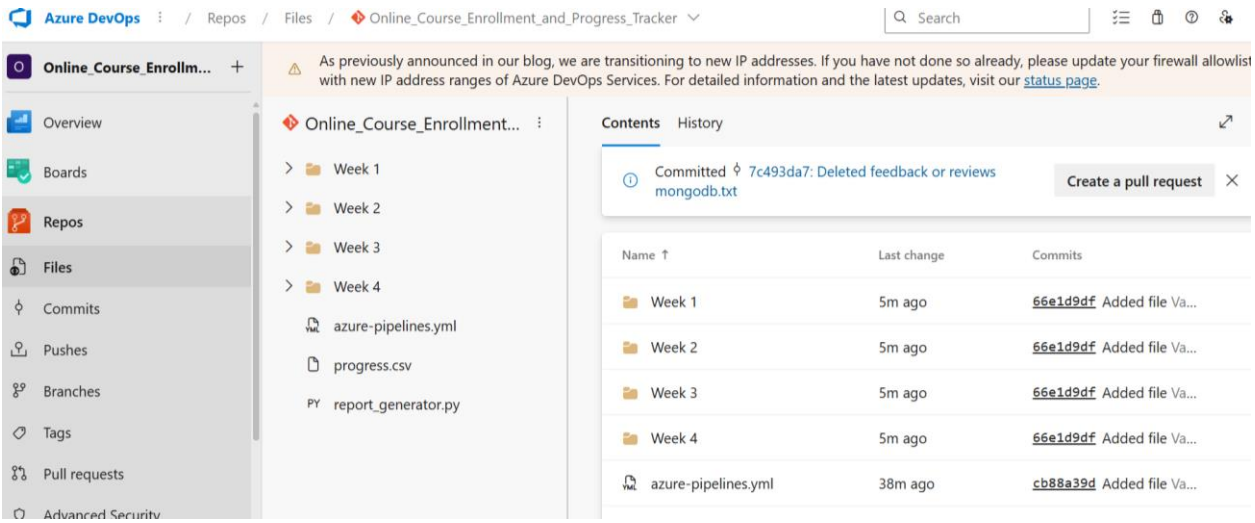
git commit -m "Initial commit"

Add Azure DevOps repo as remote (replace with your SSH link)

git remote add origin git@ssh.dev.azure.com:v3/YourOrg/YourProject/YourRepo

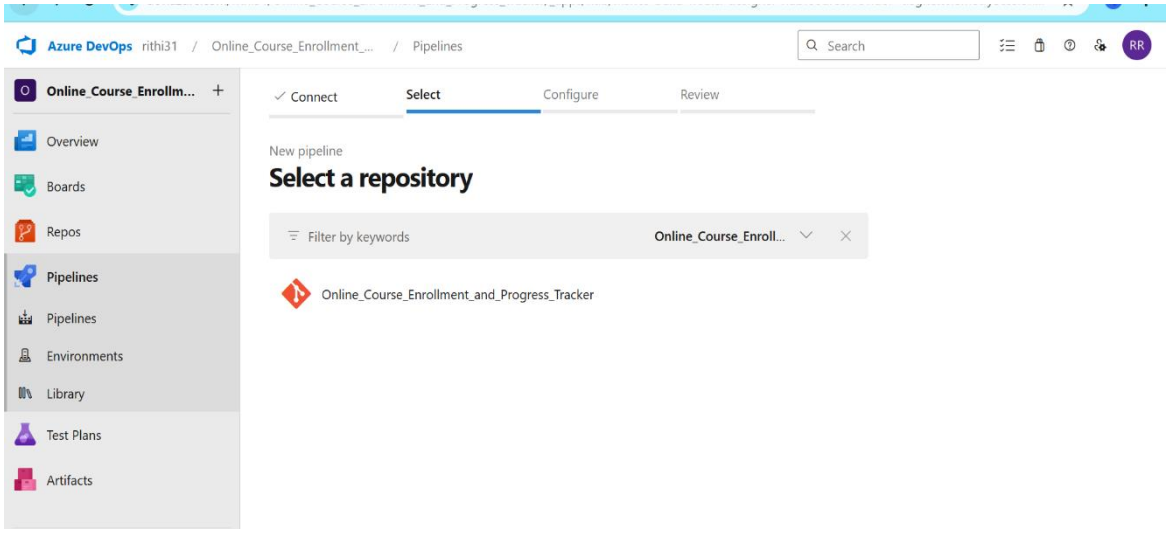
Push the code to Azure repo

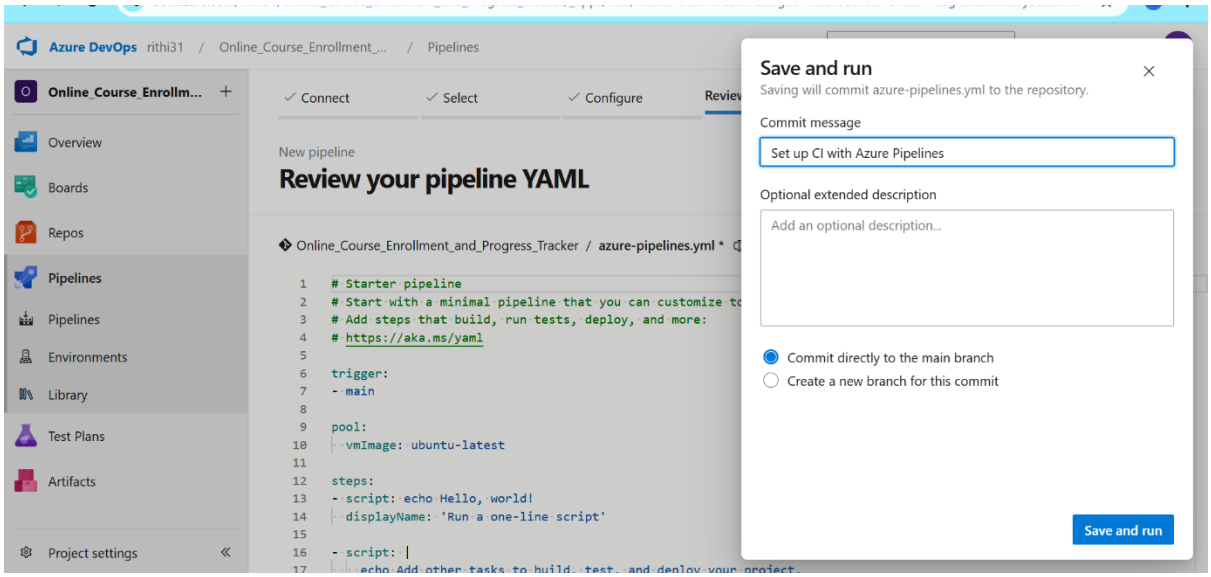
git push -u origin main



Step 4: Configure and Run the Azure Pipeline

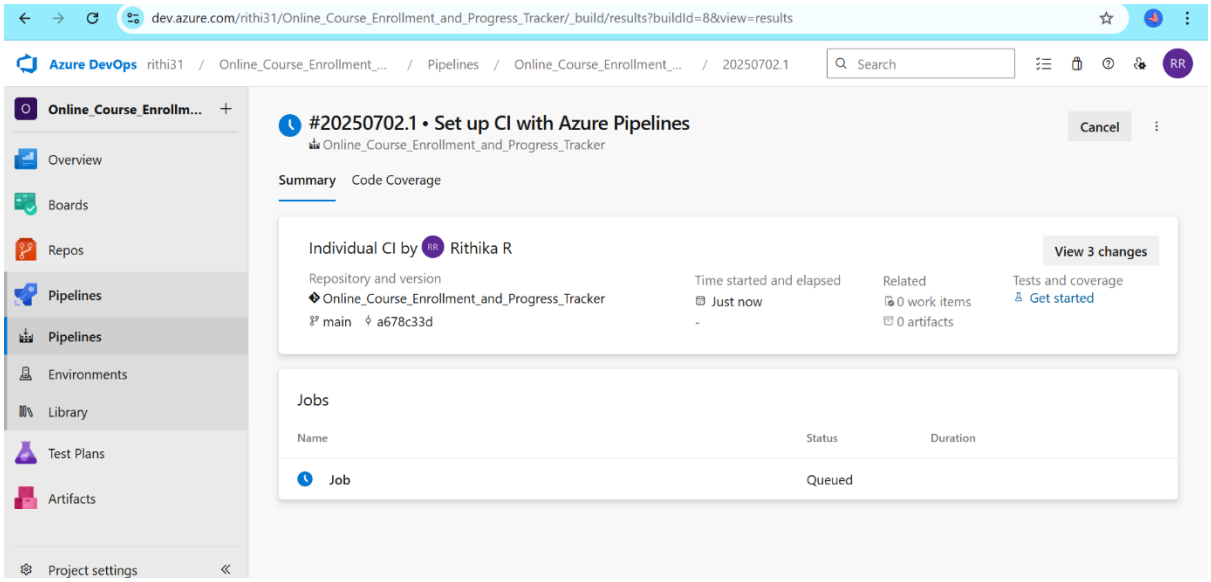
1. Go back to your Azure DevOps project.
2. Navigate to **Pipelines** → Click **Create Pipeline**.
3. Choose:
    - **Code in Azure Repos Git**
    - Select your repository
    - Choose **"Existing Azure Pipelines YAML file"**
4. Select:
    - **Branch:** main
    - **Path:** /devops/azure-pipelines.yml
5. Click **Continue**, then **Run** the pipeline.





STEP 5: Final Output

- The pipeline will automatically run every Monday at 8 AM UTC.
- It will generate `progress_report.csv` with students having less than 50% progress.
- The CSV will be available as a build artifact in Azure DevOps.


dev.azure.com/rithi31/Online_Course_Enrollment_and_Progress_Tracker/_build/results?buildId=8&view=results
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Library
Test Plans
Artifacts
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Get started
Jobs
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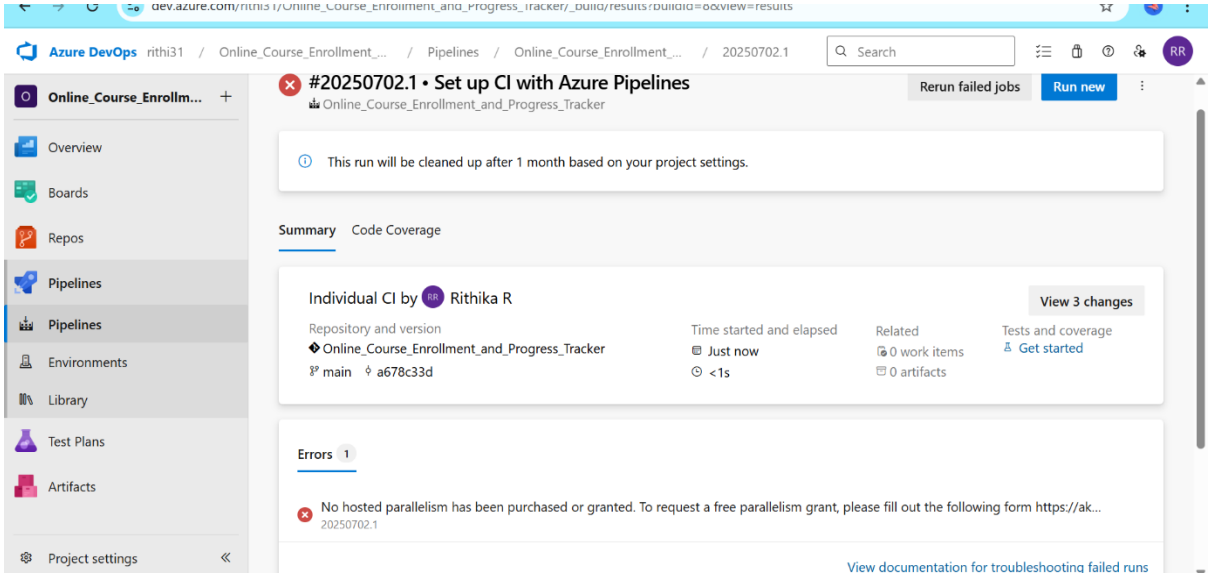
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Library
Test Plans
Artifacts
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#20250702.1 • Set up CI with Azure Pipelines
Online_Course_Enrollment_and_Progress_Tracker
Rerun failed jobs
Run new
This run will be cleaned up after 1 month based on your project settings.
Summary
Code Coverage
Individual CI by RR Rithika R
View 3 changes
Repository and version
Online_Course_Enrollment_and_Progress_Tracker
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Time started and elapsed
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0 work items
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Tests and coverage
Get started
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No hosted parallelism has been purchased or granted. To request a free parallelism grant, please fill out the following form https://ak...
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View documentation for troubleshooting failed runs