

Report of MLOPS Assignment No. 1

Group Members:

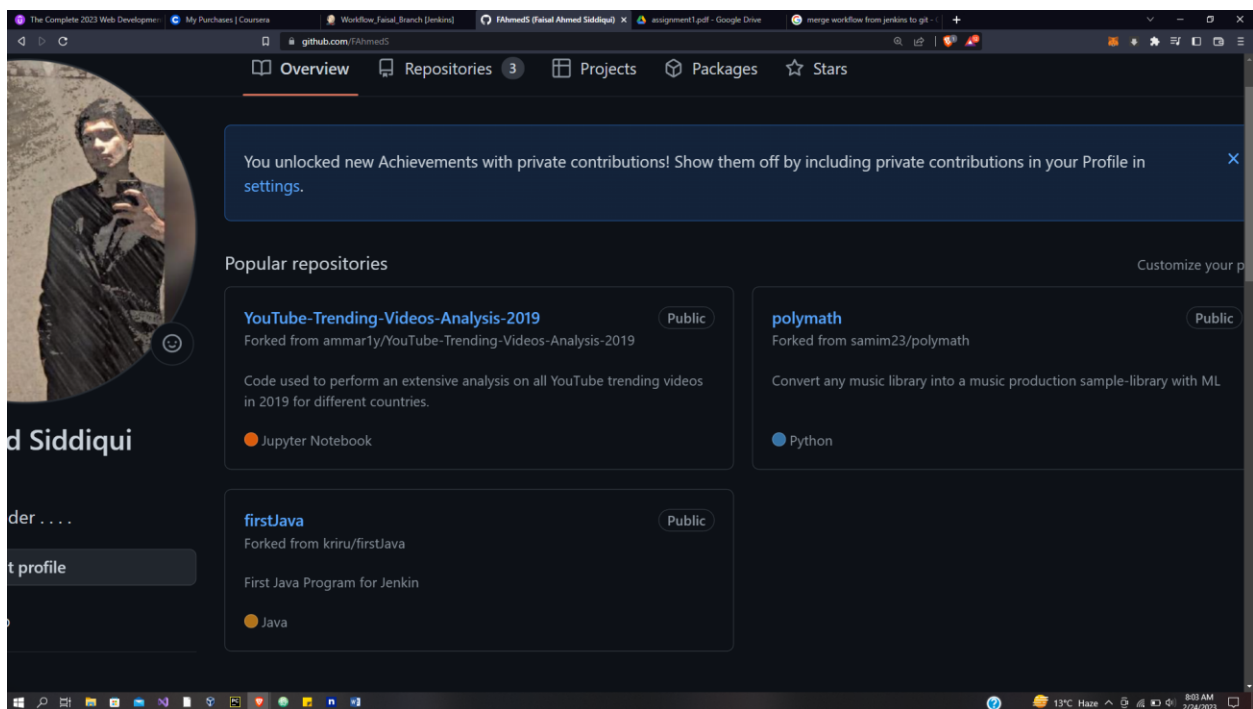
Faisal Ahmed Siddiqui 19I-1674

Adan Nazir 19I-1680

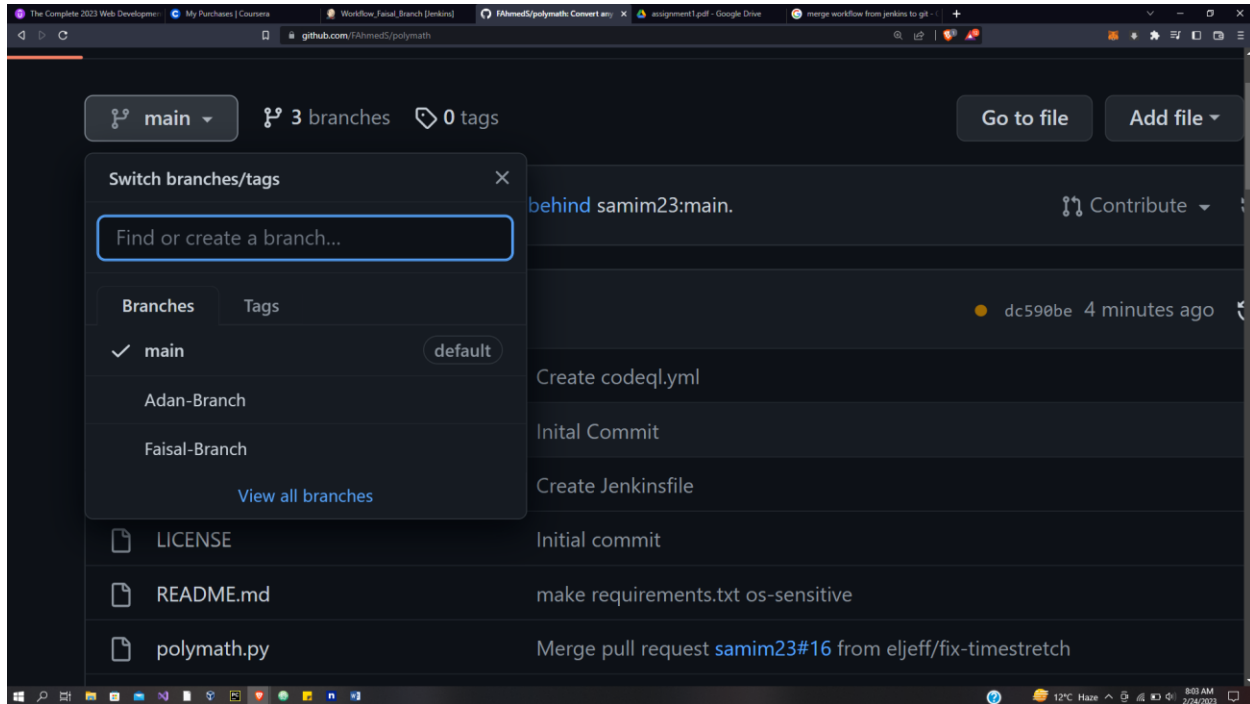
AI-J

Steps:

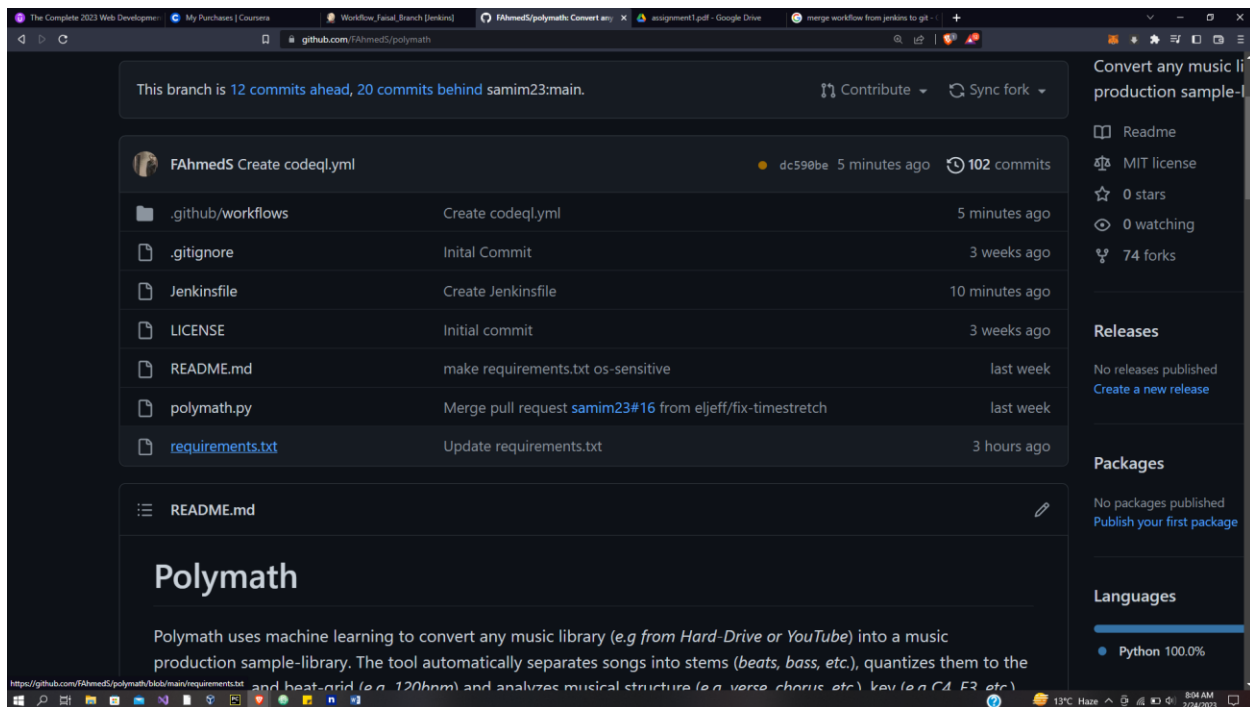
1. Github repo which is trending, and does not already have a workflow. Forked it.



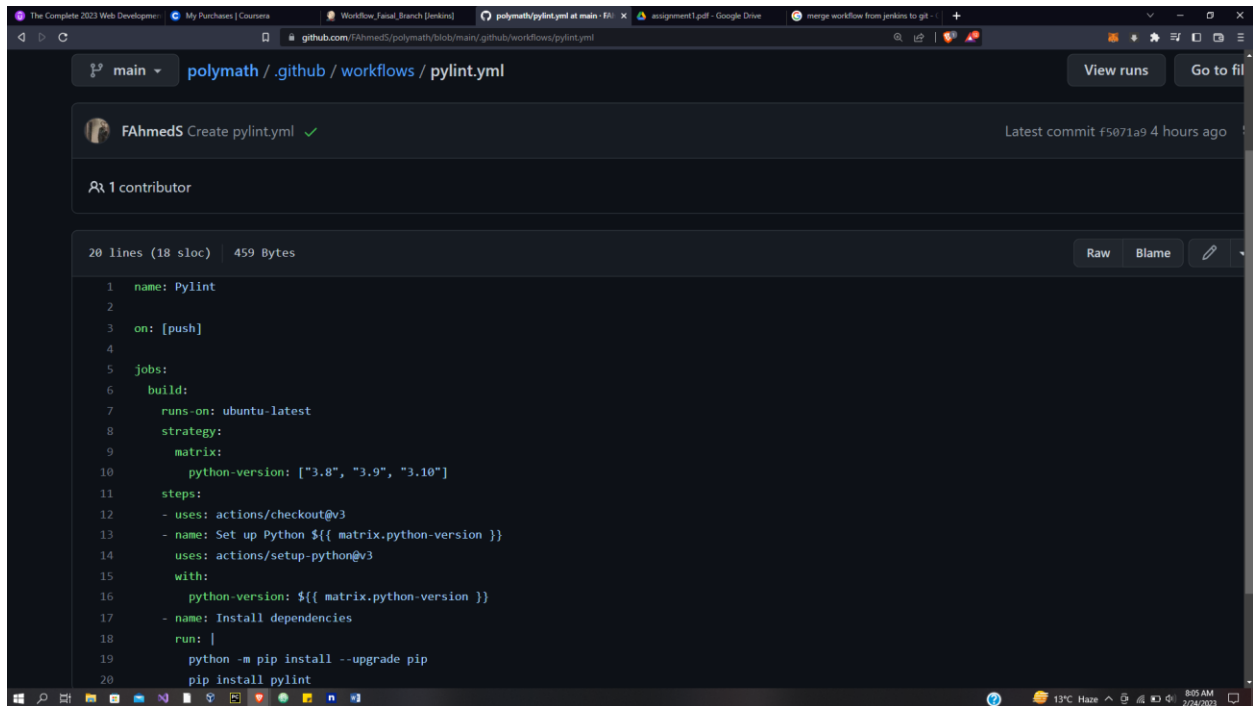
2. Make two branches. One member joined as a collaborator.



3. Created scaffolding named as “requirements.txt”.



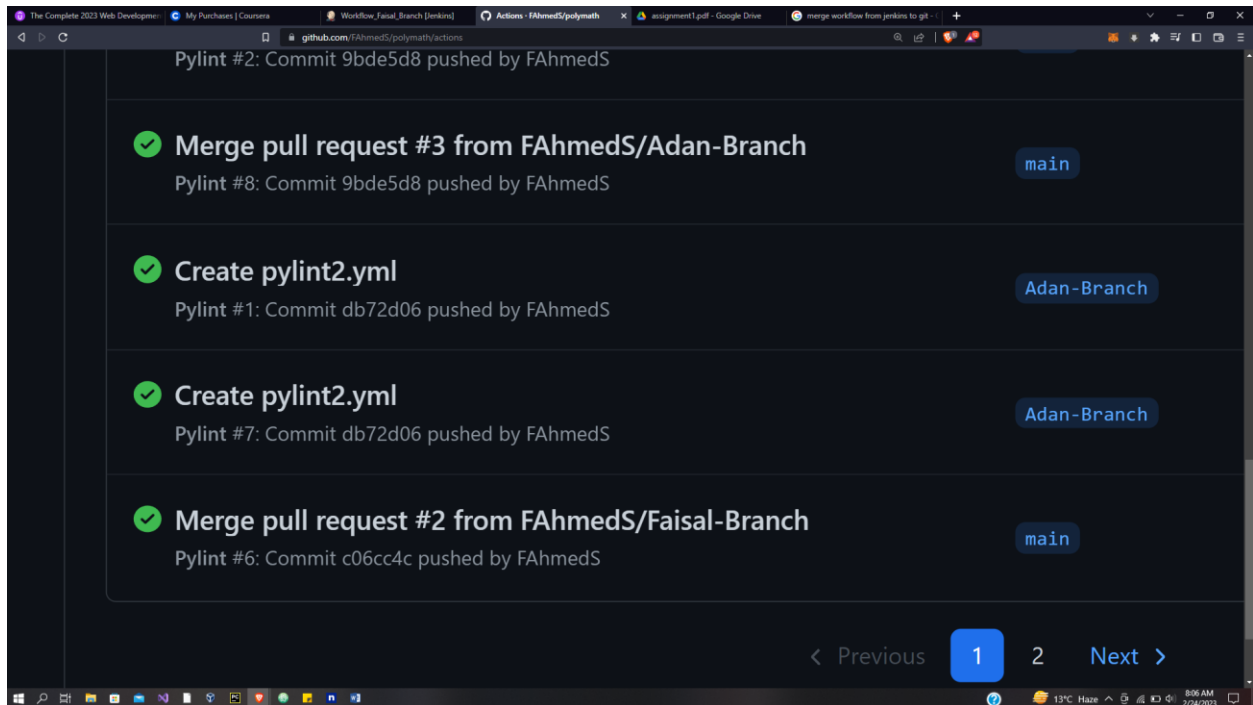
4. First considered by using Github Actions, as project is in python so two pylint.yml files created for each branch with script.



The screenshot shows a GitHub repository for 'polymath' with the file '.github/workflows/pylint.yml' selected. The file is 20 lines long and 459 bytes. It defines a workflow named 'Pylint' that triggers on a 'push' event. The workflow includes a 'build' job that runs on 'ubuntu-latest' and uses a matrix strategy for Python versions '3.8', '3.9', and '3.10'. The steps in the job are: 'Set up Python' using 'actions/checkout@v3', 'Install dependencies' using 'actions/setup-python@v3', and a 'run' step that executes 'python -m pip install --upgrade pip' and 'pip install pylint'.

```
1 name: Pylint
2
3 on: [push]
4
5 jobs:
6   build:
7     runs-on: ubuntu-latest
8     strategy:
9       matrix:
10        python-version: ["3.8", "3.9", "3.10"]
11    steps:
12      - uses: actions/checkout@v3
13      - name: Set up Python ${ matrix.python-version }
14        uses: actions/setup-python@v3
15        with:
16          python-version: ${ matrix.python-version }
17      - name: Install dependencies
18        run: |
19          python -m pip install --upgrade pip
20          pip install pylint
```

- 5.

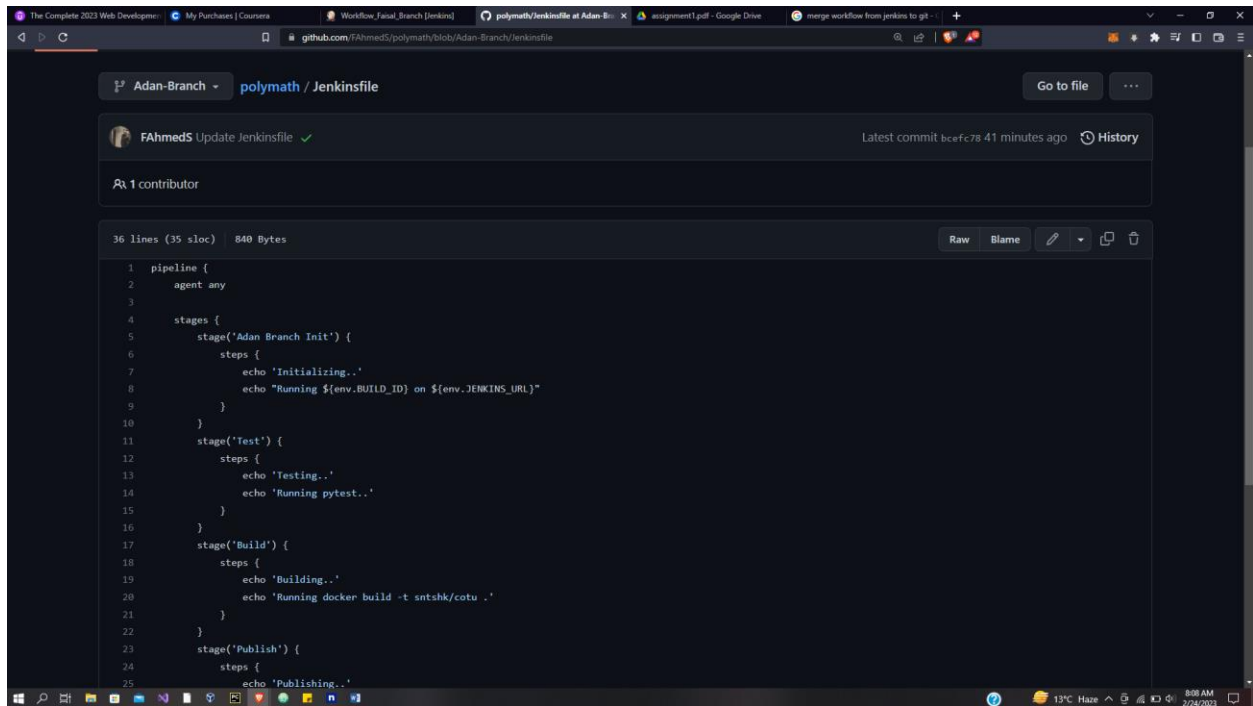


The screenshot shows a GitHub Actions workflow run for 'Pylint #2: Commit 9bde5d8 pushed by FAhmedS'. The workflow consists of four steps, all of which are completed successfully (indicated by green checkmarks):

- Merge pull request #3 from FAhmedS/Adan-Branch** (main branch)
- Create pylint2.yml** (Adan-Branch)
- Create pylint2.yml** (Adan-Branch)
- Merge pull request #2 from FAhmedS/Faisal-Branch** (main branch)

The workflow is currently on page 1 of 2, with navigation links for 'Previous', '1', '2', and 'Next'.

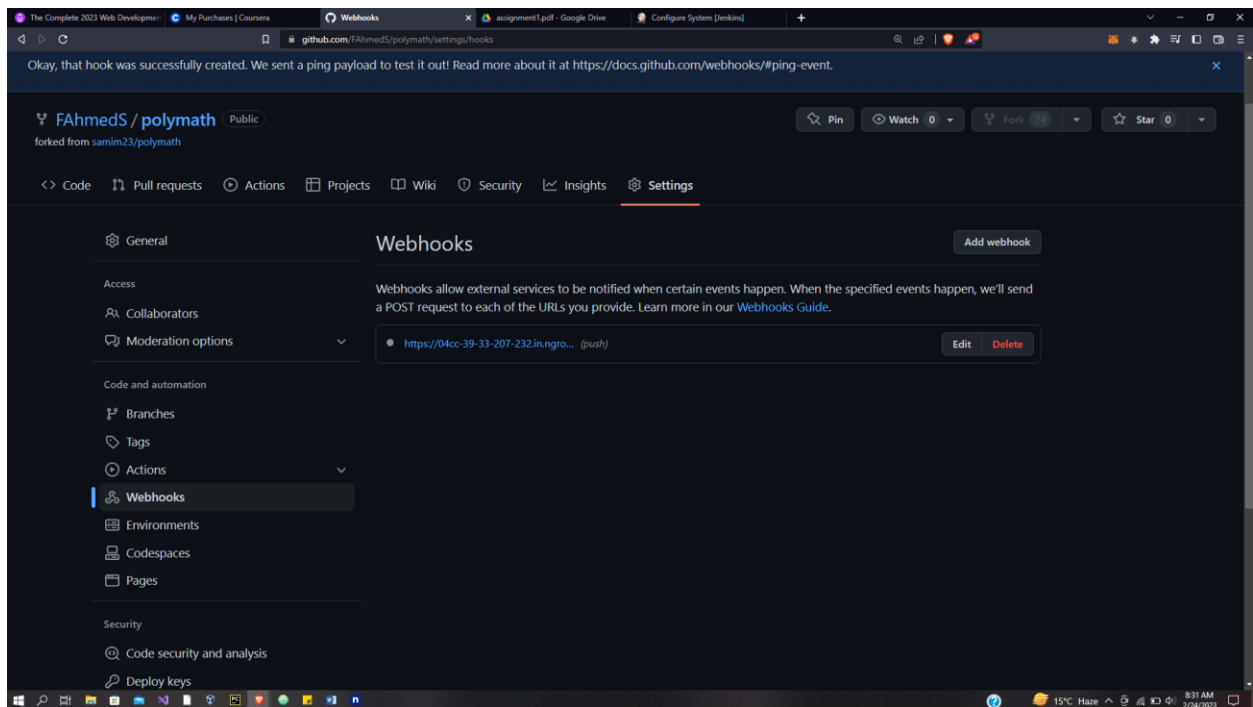
- Next, made workflows for each branch with Jenkins (using webhooks), Jenkinsfile with workflow created in each branch and configured webhook using ngrok.



The screenshot shows a GitHub repository named 'polymath' by user 'FAhmedS'. The file 'Jenkinsfile' in the 'Adan-Branch' is displayed. The file contains a Jenkins pipeline with stages for initialization, testing, building, and publishing. The pipeline is configured to run on any agent.

```
1 pipeline {
2   agent any
3
4   stages {
5     stage('Adan Branch Init') {
6       steps {
7         echo 'Initializing..'
8         echo "Running ${env.BUILD_ID} on ${env.JENKINS_URL}"
9       }
10    }
11    stage('Test') {
12      steps {
13        echo 'Testing..'
14        echo 'Running pytest..'
15      }
16    }
17    stage('Build') {
18      steps {
19        echo 'Building..'
20        echo 'Running docker build -t sntshk/cotu .'
21      }
22    }
23    stage('Publish') {
24      steps {
25        echo 'Publishing..'
26      }
27    }
28  }
29 }
```

7.



7. Build Successful!

Dashboard >

+ New Item

People

Build History

Manage Jenkins

My Views

Build Queue

No builds in the queue.

Build Executor Status

1 Idle

2 Idle

Search (CTRL+K)

Faisal Ahmed Siddiqui

log out

All +

S	W	Name ↓	Last Success	Last Failure	Last Duration
✓	☀	Workflow_Adan_Branch	22 min #8	N/A	3.6 sec
✓	☀	Workflow_Faisal_Branch	34 min #1	N/A	4.6 sec
✓	☀	Workflow_with_Jenkins_Assignment1	2 hr 48 min #7	N/A	1.5 sec

Icon: S W L

Icon legend

Atom feed for all

Atom feed for failures

Atom feed for just latest builds

Status

Changes

Build Now

Configure

Delete Pipeline

Full Stage View

GitHub

Rename

Pipeline Syntax

GitHub Hook Log

Build History

trend

Atom feed for all

Atom feed for failures

Pipeline Workflow_Faisal_Branch

Creating and executing workflow of branch named Faisal ...

Edit description

Disable Project

Stage View

	Declarative: Checkout SCM	Faisal Branch Init	Test	Build	Publish	Cleanup
Average stage times: (Average full run time: ~4s)	2s	89ms	82ms	76ms	86ms	84ms
Feb 24 07:32 No Changes	2s	89ms	82ms	76ms	86ms	84ms

Permalinks

- Last build (#1), 35 min ago
- Last stable build (#1), 35 min ago
- Last successful build (#1), 35 min ago
- Last completed build (#1), 35 min ago

Pipeline Workflow_Adan_Branch

Creating and Executing a branch named Adan ...

Edit description

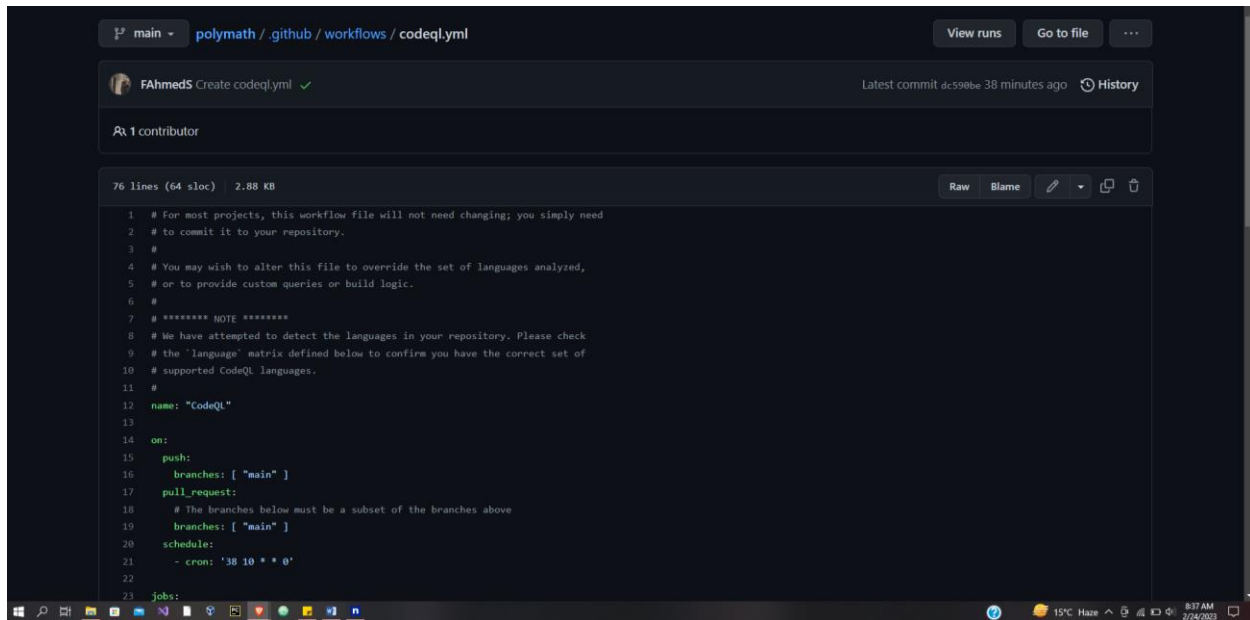
Disable Project

Stage View

	Declarative: Checkout SCM	Adan Branch Init	Test	Build	Publish	Cleanup
Average stage times: (Average full run time: ~4s)	1s	102ms	85ms	82ms	82ms	79ms
Feb 24 07:44 No Changes	1s	98ms	77ms	84ms	82ms	79ms
Feb 24 07:30 No Changes	2s	106ms	94ms	81ms	82ms	79ms

Permalinks

8. Finally, created security checks using CodeQL in main.



The screenshot shows a GitHub repository page for the file `codeql.yml` in the `polymath / github / workflows` directory. The file is 76 lines long, 64 sloc, and 2.88 KB. It is a workflow file for CodeQL. The workflow is triggered on push to the main branch, pull request to the main branch, and on a cron schedule of 10:10 AM every day. The workflow includes a job named `CodeQL` that runs the CodeQL tool on the repository. The workflow file content is as follows:

```
1 # For most projects, this workflow file will not need changing; you simply need
2 # to commit it to your repository.
3 #
4 # You may wish to alter this file to override the set of languages analyzed,
5 # or to provide custom queries or build logic.
6 #
7 # ***** NOTE *****
8 # We have attempted to detect the languages in your repository. Please check
9 # the 'language' matrix defined below to confirm you have the correct set of
10 # supported CodeQL languages.
11 #
12 name: "CodeQL"
13
14 on:
15   push:
16     branches: [ "main" ]
17   pull_request:
18     # The branches below must be a subset of the branches above
19     branches: [ "main" ]
20   schedule:
21     - cron: '10 10 * * 0'
22
23 jobs:
```

9. This report file is uploaded with repo.
