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Experiment No. 1.2

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Section/Group: MCD-1/ Grp A
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Subject Name: CI/CD Pipelines
Subject Code: 22CAP-781

1. Aim/Overview of the practical:

A. Explore Github Workflows.

B. Create a workflow YAML script to build a Maven Project and display output of execution of all the 09 goals of maven.

2. Code for practical:

A)

Gitflow is a legacy Git workflow that was originally a disruptive and novel strategy for managing Git branches. Gitflow has fallen in popularity in favor of trunk-based workflows, which are now considered best practices for modern continuous software development and DevOps practices. Gitflow also can be challenging to use with CI/CD. This post details Gitflow for historical purposes.

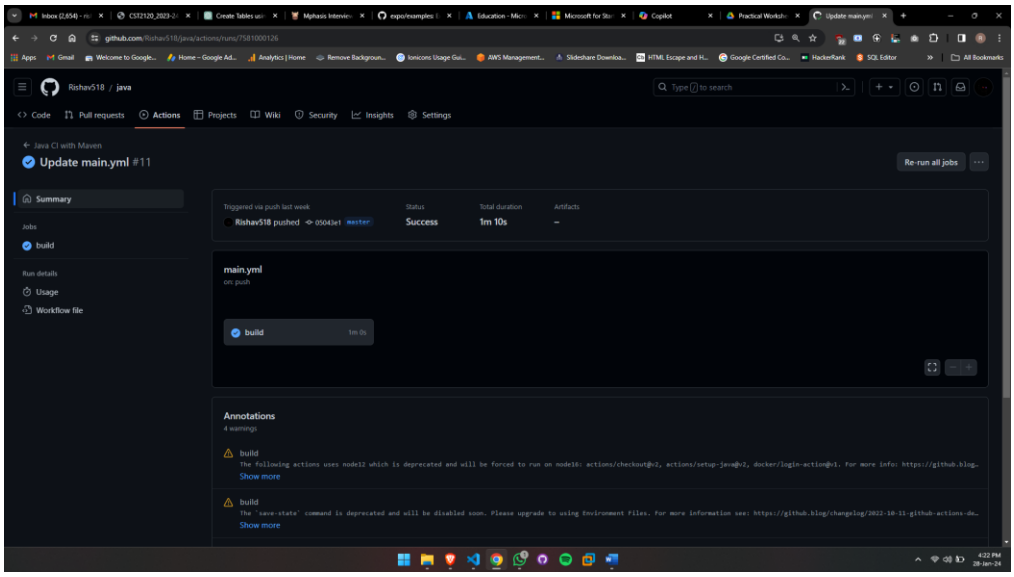
B)

- Create a repository and publish on github.
- Click on Actions and click on create workflow file.
- You can choose pre-built templates from it for maven with JAVA.
- In workflow.yml file add following script.

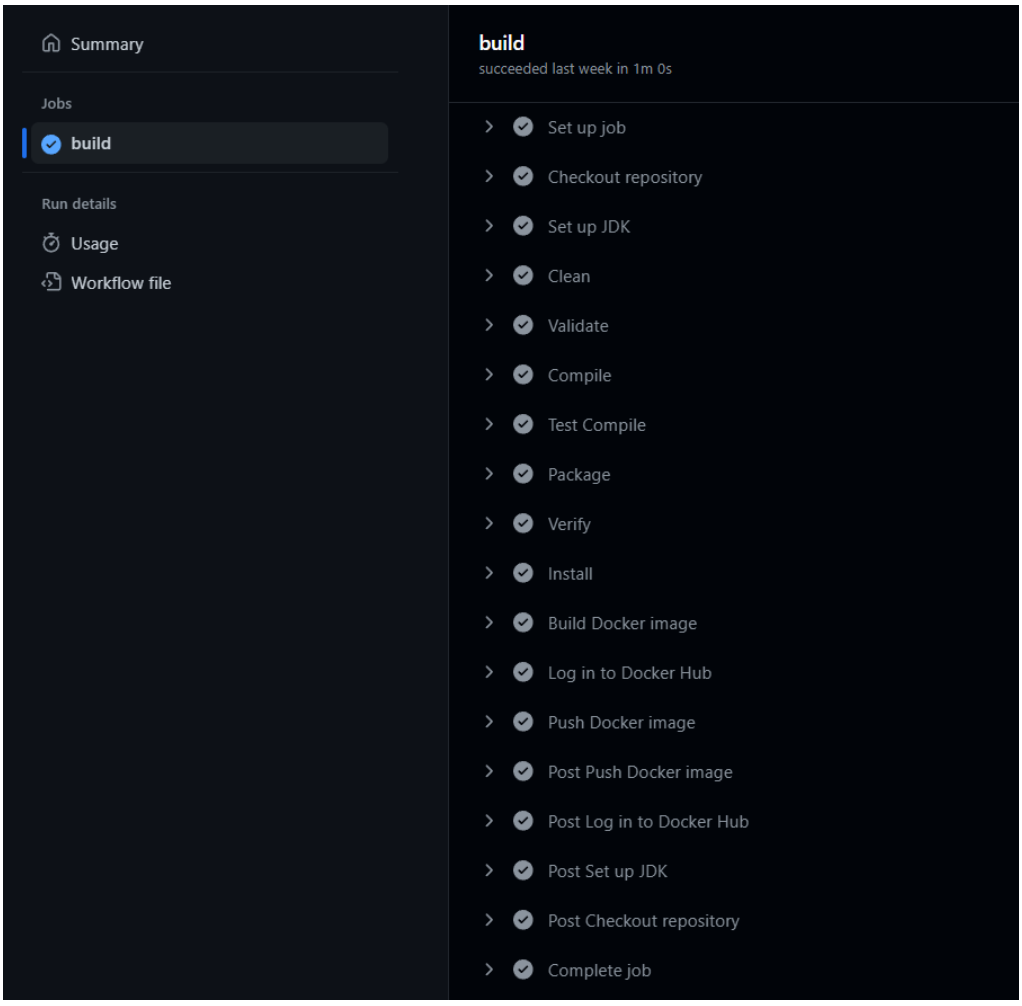
```yaml
name: Java CI with Maven

on:
  push:
    branches:
      - master
  pull_request:
    branches:
      - master

jobs:
  build:
```

```yaml
    runs-on: ubuntu-latest

    steps:
    - name: Checkout repository
      uses: actions/checkout@v2

    - name: Set up JDK
      uses: actions/setup-java@v2
      with:
        distribution: 'adopt'
        java-version: '11'

    - name: Clean
      run: mvn clean

    - name: Validate
      run: mvn validate

    - name: Compile
      run: mvn compile

    - name: Test Compile
      run: mvn test-compile

    - name: Package
      run: mvn package

    - name: Verify
      run: mvn verify

    - name: Install
      run: mvn install

    - name: Build Docker image
      run: docker build -t yourusername/yourappname:${{ github.sha }} .

    - name: Log in to Docker Hub
      uses: docker/login-action@v1
      with:
        username: ${{ secrets.DOCKERHUB_USERNAME }}
        password: ${{ secrets.DOCKERHUB_PASSWORD }}

    - name: Push Docker image
      uses: docker/build-push-action@v5
      with:
          push: true
          tags: ${{ secrets.DOCKERHUB_USERNAME }}/app:latest
```

- It will perform actions when any pull or push will be reflected to repository.



- After completing all goals of maven, it will automatically make an image an push to DockerHub.



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