Experiment 4 Docker Build and Push using GitHub Actions

Objective: Setup a GitHub Actions workflow to automatically build a docker image from a docker file in your GitHub repository and push it to a container registry (e.g., Docker hub)

1. Create a Maven Project and Push the Project to GitHub Repository.

2. Create a docker file to build an image which contains the jar file of the maven build.

3. Create Docker hub registry.

4. In GitHub Repository, setup the docker username and passwords as secrets.

-> set up username and password using GitHub secrets.

Repository secrets   New repository secret

Name ⬆↑	Last updated		
🔒 DOCKER_PASSWORD	now	✏️	🗑️
🔒 DOCKER_USERNAME	now	✏️	🗑️
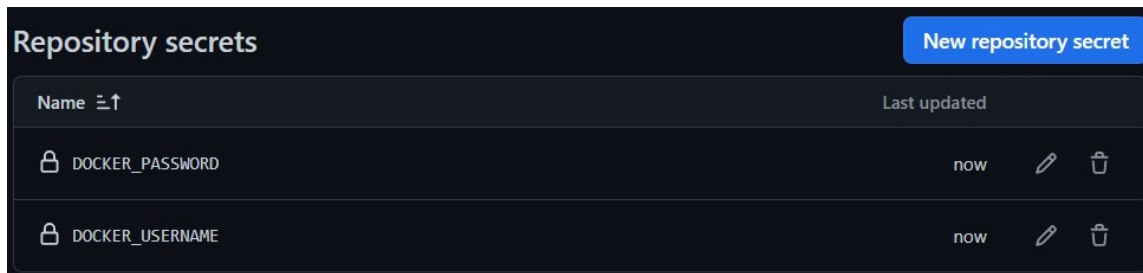
5. Set up GitHub Actions:

(a) Click on Actions tab
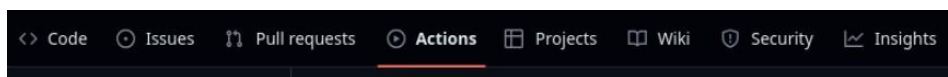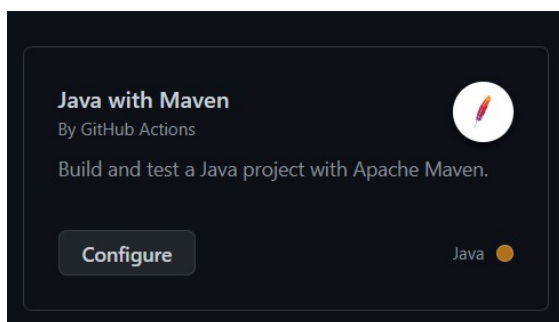

⟨⟩ Code   ⊙ Issues   ⇅ Pull requests   ⊙ Actions   ⊞ Projects   📖 Wiki   ⚠ Security   📈 Insights

(b) Click on Java with Maven

Java with Maven
By GitHub Actions

Build and test a Java project with Apache Maven.

Configure   Java ●

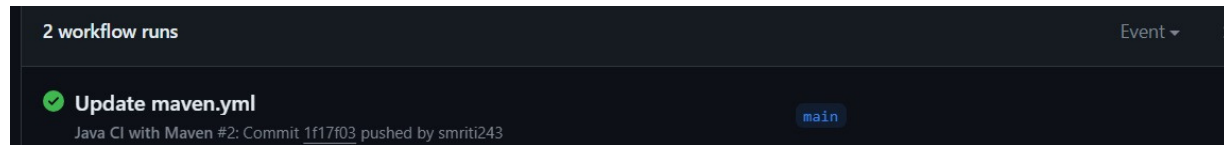6. Configure maven.yml file and commit changes.

Note: we will be using mr-smithers-excellent docker image that allows us to push our docker images from GitHub actions to docker hub repository.

```
22      steps:
23        - uses: actions/checkout@v3
24        - name: Set up JDK 17
25          uses: actions/setup-java@v3
26          with:
27            java-version: '17'
28            distribution: 'temurin'
29            cache: maven
30        - name: Build with Maven
31          run: mvn -B package --file pom.xml
32        - name: Docker Build and Push
33          uses: mr-smithers-excellent/docker-build-push@v6
34          with:
35            image: smriti243/cicdlab4
36            registry: docker.io
37            username: ${{ secrets.DOCKER_USERNAME }}
38            password: ${{ secrets.DOCKER_PASSWORD }}
```

7. This will trigger an automated build.

2 workflow runs   Event ▾

✅ **Update maven.yml**
Java CI with Maven #2: Commit 1f17f03 pushed by smriti243   `main`

8. Now, the docker image is pushed to the docker hub registry.

Tags

This repository contains 2 tag(s).

Tag	OS	Type	Pulled	Pushed
● main-5be83b8	🐧	Image	---	in 5 hours
● main-96db201	🐧	Image	---	in 5 hours

See all   Go to Advanced Image Management