## 5.4 BUILD A SAMPLE CODE AND CREATE PIPELINE IN AZURE

### I) BUILD A SAMPLE CODE IN AZURE DEVOPS

**1. Create a New Pipeline:**

- Navigate to your project in Azure DevOps.
- Select Pipelines from the left navigation menu.
- Choose New pipeline or Create Pipeline.

**2. Select Source Code Location:**

- Choose the location of your source code (e.g., GitHub, Azure Repos, Bitbucket).
- You might need to sign in and grant Azure Pipelines access to your repository.
- Select the specific repository you want to build.

**3. Configure Your Pipeline:**

- Azure Pipelines will analyze your repository and recommend a template (e.g., .NET, Node.js, Python).
- You can choose a recommended template or select Starter pipeline for a blank YAML file.
- If using a Starter pipeline, a basic azure-pipelines.yml file will be generated. This file defines the steps of your build process.

**4. Define Build Steps (YAML Example):**

The azure-pipelines.yml file uses YAML syntax to define your build process. Here's an example for a simple Node.js application:

Code

```
trigger:
- main
pool:
  vmImage: 'ubuntu-latest'
steps:
- task: NodeTool@0
```

```
  inputs:
    versionSpec: '16.x'
  displayName: 'Install Node.js'
- script: |
    npm install
    npm run build
  displayName: 'Install dependencies and build'
- task: PublishBuildArtifacts@1
  inputs:
    pathToPublish: 'dist' # Replace with your build output path
    artifactName: 'drop'
  displayName: 'Publish Artifacts'
```

- trigger: Specifies when the pipeline should run (e.g., on commits to the main branch).
- pool: Defines the agent where the build will run (e.g., ubuntu-latest).
- steps: A sequence of tasks and scripts that perform the build.
    - NodeTool@0: A task to install a specific version of Node.js.
    - script: Executes shell commands (e.g., npm install, npm run build).
    - PublishBuildArtifacts@1: Publishes the build output as an artifact.

**5. Save and Run:**

- Review the generated or modified azure-pipelines.yml file.
- Select Save and run.
- You might be prompted to commit the azure-pipelines.yml file to your repository.
- Confirm the commit message and select Save and run again.

**6. Monitor the Build:**

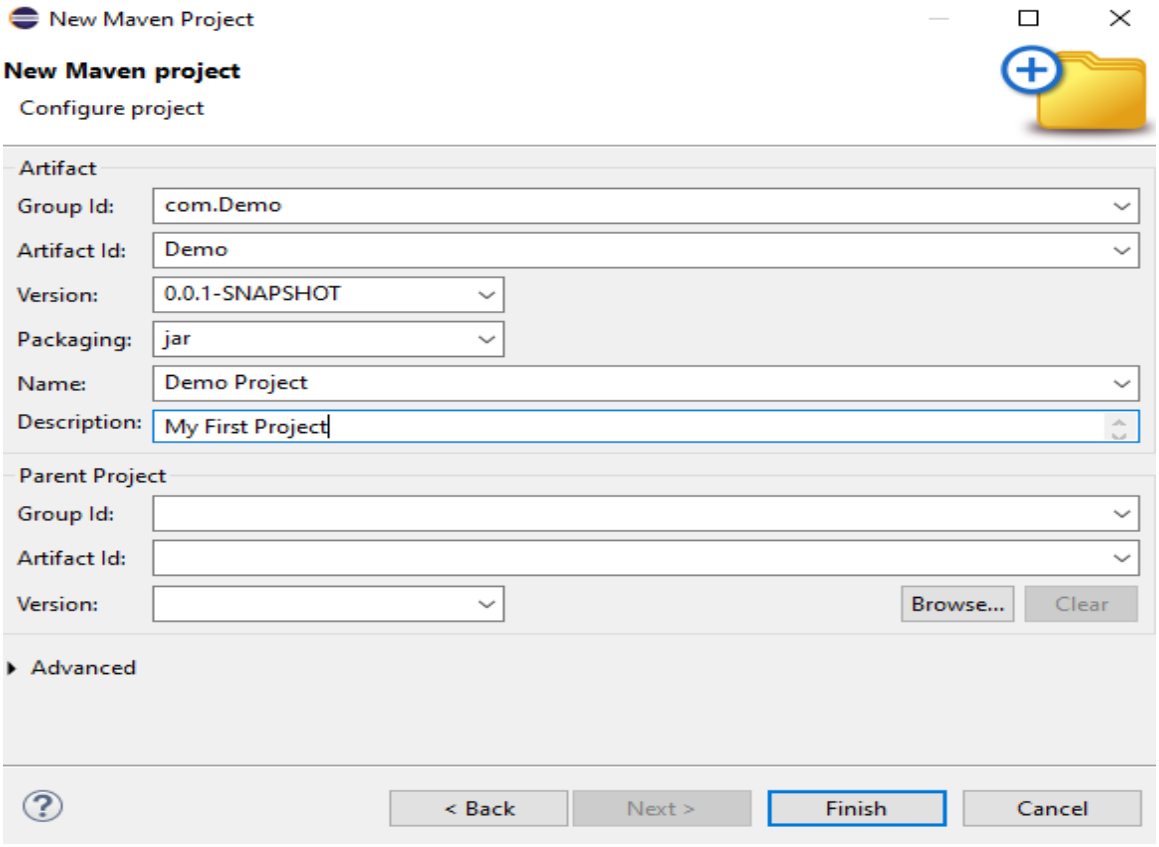
- Azure Pipelines will start a new run of your pipeline.
- You can monitor the progress of each step and view logs to troubleshoot any issues.
- Once the build is complete, you can access the published artifacts.

## II. CREATE MAVEN BUILD PIPELINE IN AZURE

### I. Build a Maven project

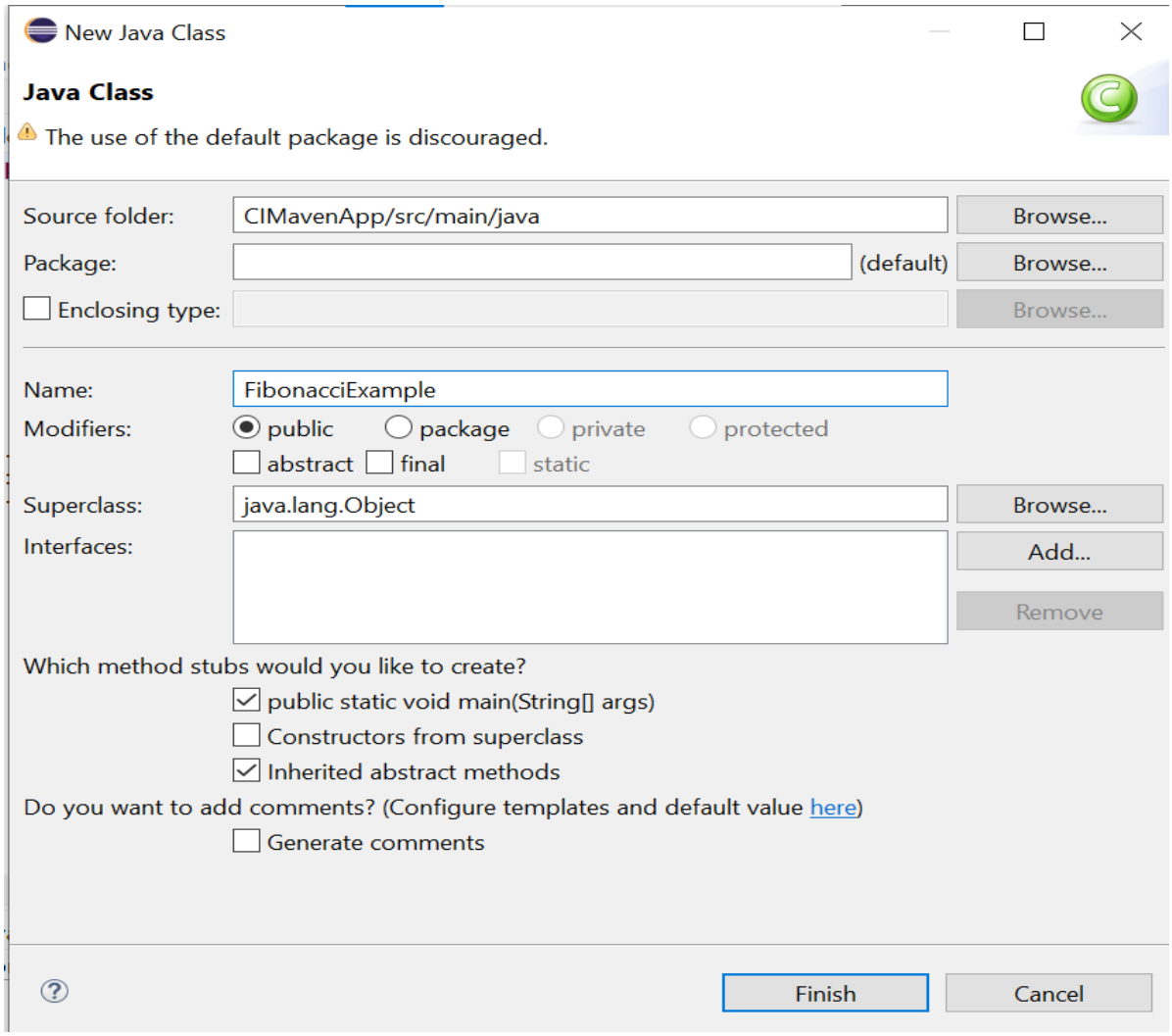
**Step1:** Create a maven project

- Give Group id and artifact Id
- Select destination folder to save your project




**Step 2:** Develop a class file

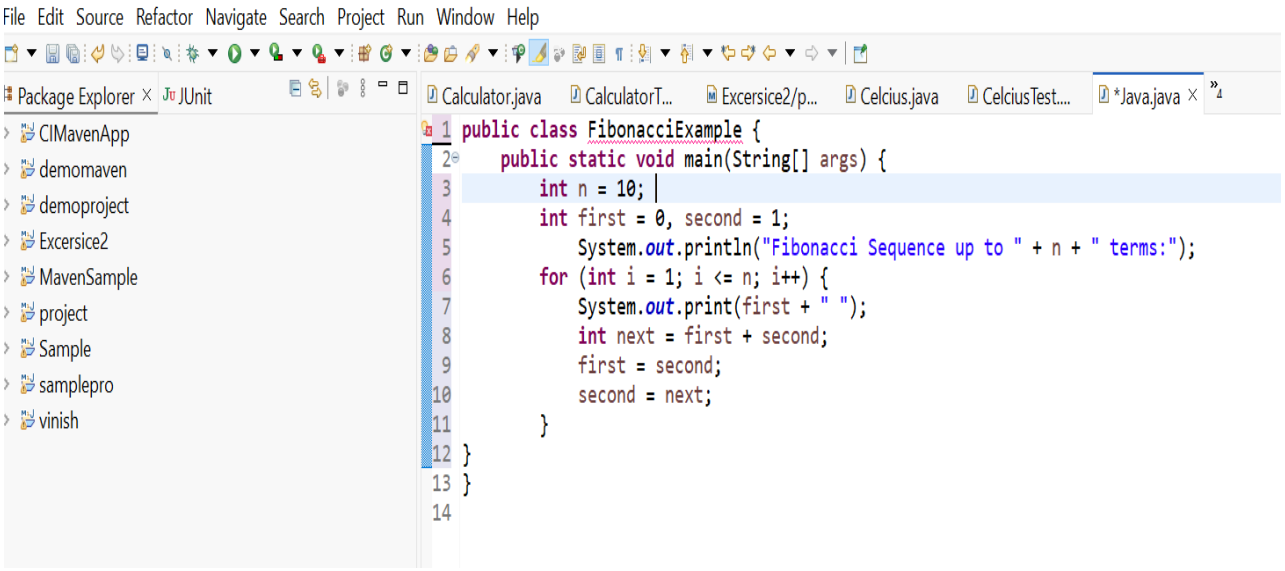
- Right click main project directory
- New → give classname →
- Select main method check box → finish
- Develop the coding for any problem.




**Example**: Java program to calculate and display the Fibonacci sequence:

```
public class FibonacciExample {
        public static void main(String[] args) {
        int n = 10; // number of terms to display
        int first = 0, second = 1;
        System.out.println("Fibonacci Sequence up to " + n + " terms:");
        for (int i = 1; i <= n; i++) {
```

```
        System.out.print(first + " ");

        int next = first + second;

        first = second;

        second = next;

        }

}}
```




**Step 3: Run the class file**

- Right click class.java → run as → Java application
- And view the output whether it is correct.

Output (for n = 10):

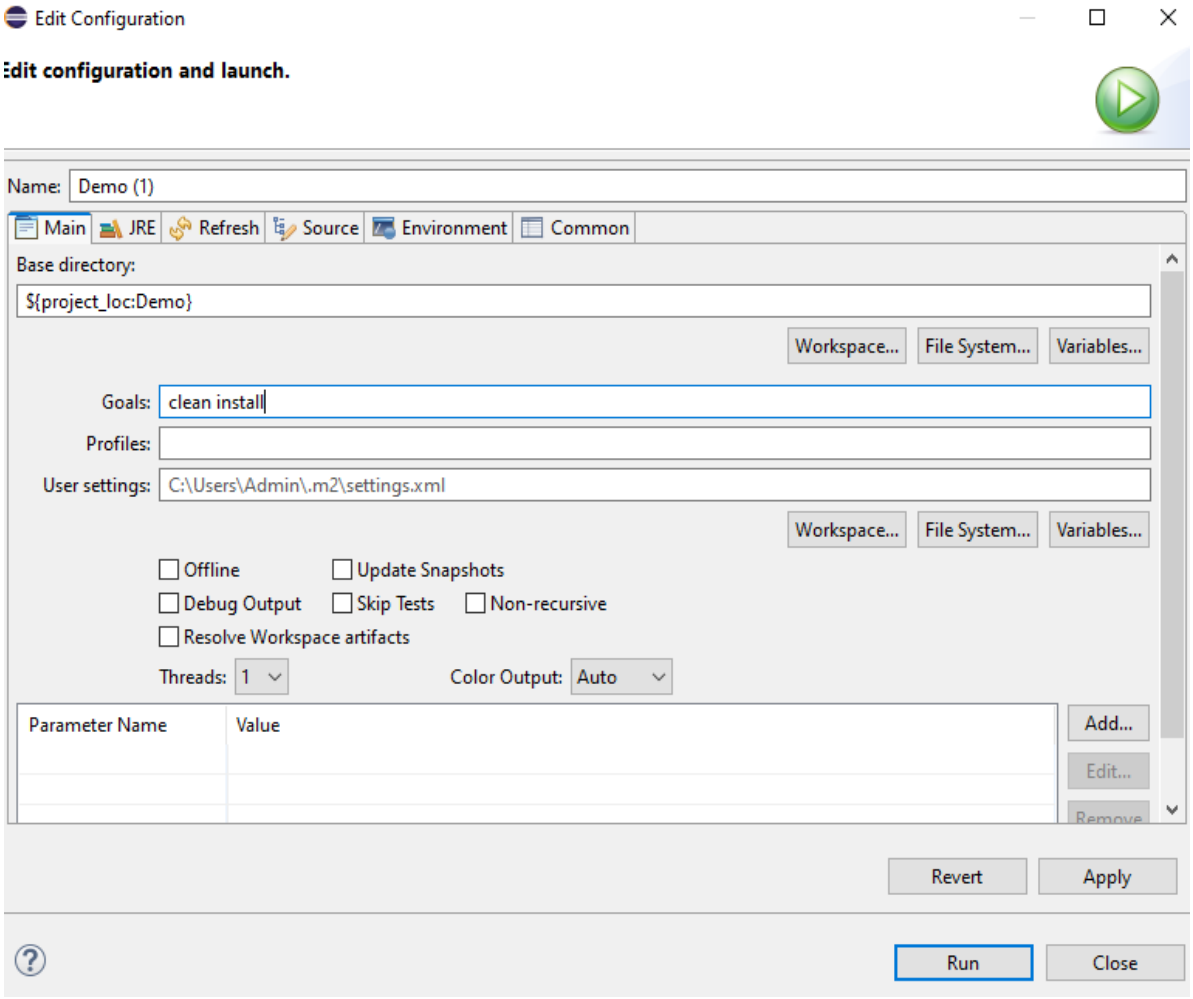
Fibonacci Sequence up to 10 terms:

0 1 1 2 3 5 8 13 21 34

**Step 4: Build the project**

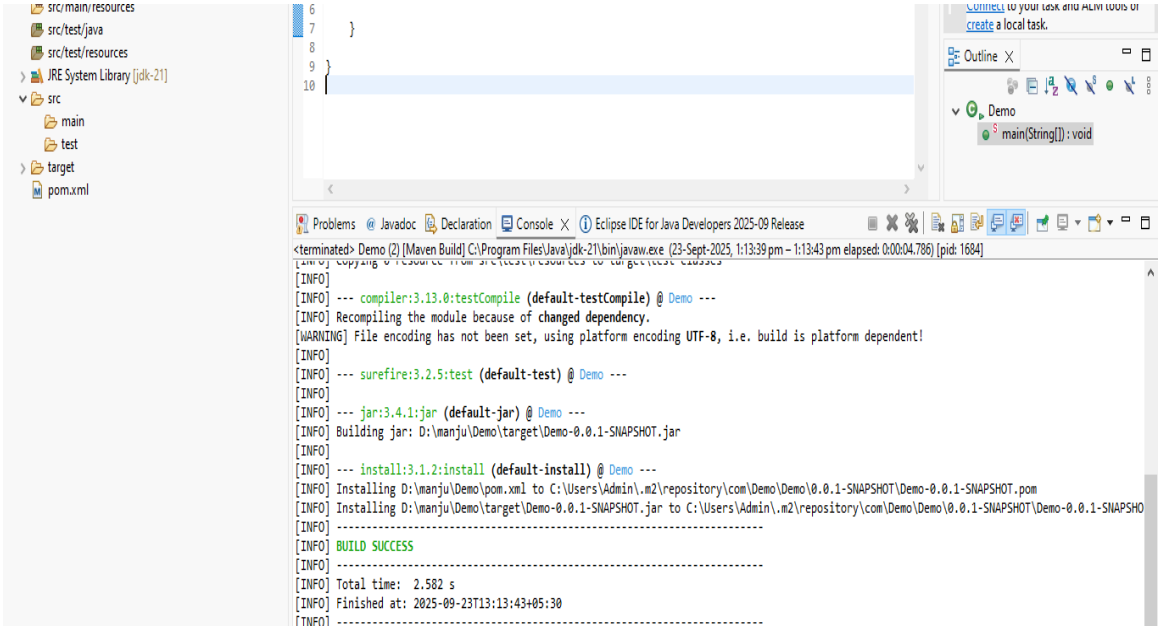
Right click the main project directory → Run As → maven build→

Give goal → clean install




Build process will be completed

Check the status ---**BUILD SUCCESS**—




**Step 8: Post the project in github repository using git**

(i) Open gitbash, Convert your project directory as a git repository by giving the following commands.

$git init

$ls (to list out all files)

$status (to check the status of the files whether committed or not)

vi .gitignore (to create a file to collect all unwanted files)

target /*

.classpath

.settings

Save the file :wq

$ls -a

$git add . (to bring all files into staging area)

$ git commit -m"message"

(ii) Connect your local repository with github repository

$ git remote add origin "link".git

(iii) Push your local repository files into github repository

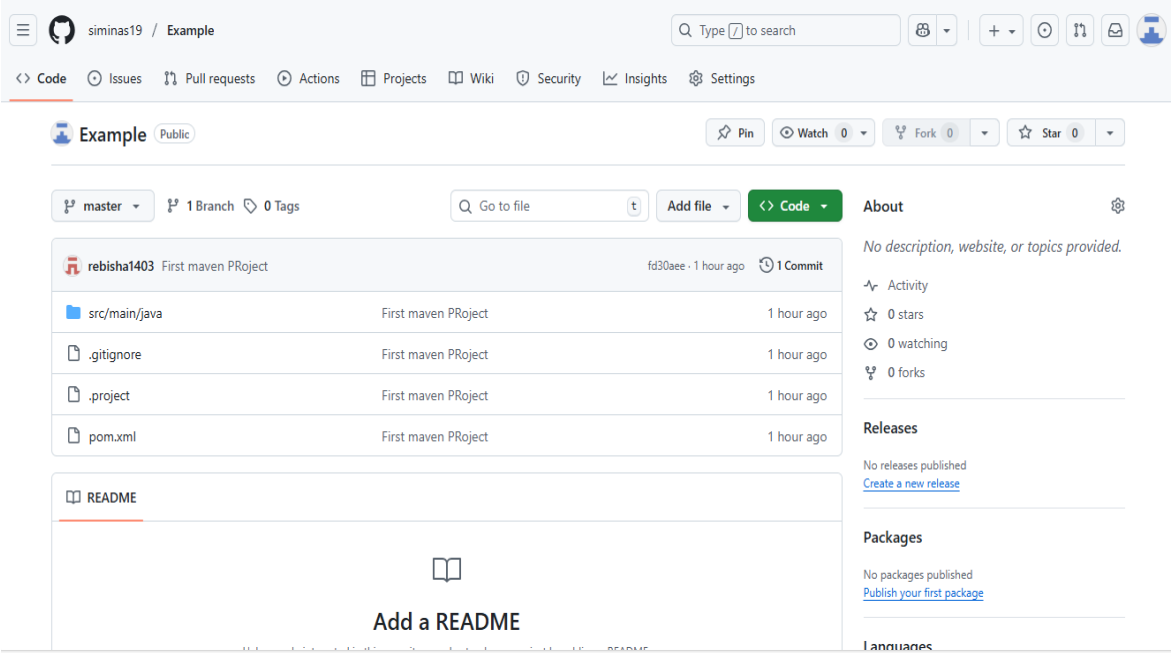
$ git push -u origin master

(iv) Now you will be asked to login to github by giving a verification code.

Now set up over

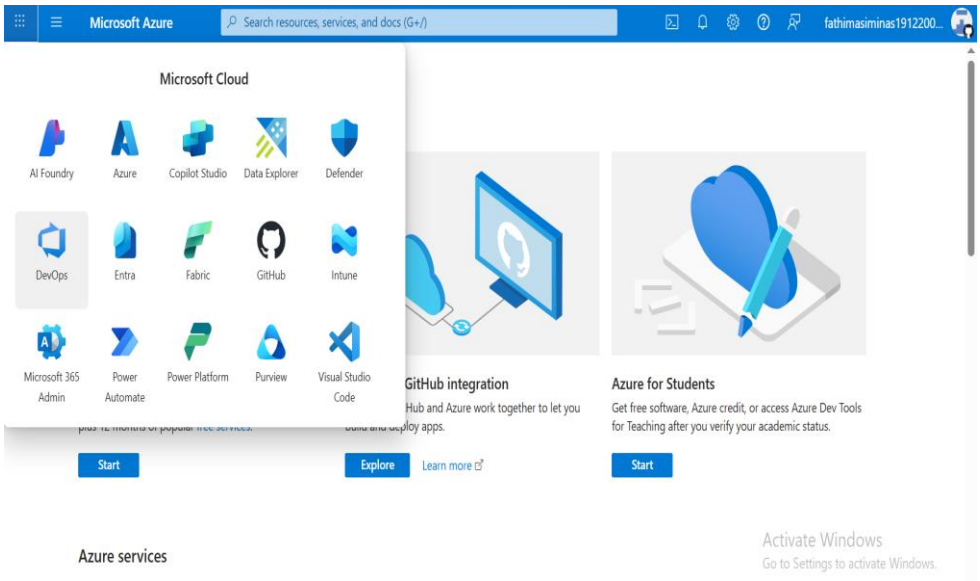
```
dmin@DESKTOP-MODSNNN MINGW64 /d/Simi/Sample
 git init
nitialized empty Git repository in D:/Simi/Sample/.git/

dmin@DESKTOP-MODSNNN MINGW64 /d/Simi/Sample (master)
 git status
n branch master

o commits yet

ntracked files:
  (use "git add <file>..." to include in what will be committed)
        .classpath
        .project
        .settings/
        pom.xml
        src/
        target/

othing added to commit but untracked files present (use "git add" to track)

dmin@DESKTOP-MODSNNN MINGW64 /d/Simi/Sample (master)
 ls
om.xml  src/  target/

dmin@DESKTOP-MODSNNN MINGW64 /d/Simi/Sample (master)
 vi .gitignore

dmin@DESKTOP-MODSNNN MINGW64 /d/Simi/Sample (master)
 ls -a
/  ../  .classpath  .git/  .gitignore  .project  .settings/  pom.xml  src/  target/

dmin@DESKTOP-MODSNNN MINGW64 /d/Simi/Sample (master)
 git status
n branch master

o commits yet

ntracked files:
  (use "git add <file>..." to include in what will be committed)
        .gitignore
        .project
        pom.xml
        src/

othing added to commit but untracked files present (use "git add" to track)

dmin@DESKTOP-MODSNNN MINGW64 /d/Simi/Sample (master)
 git add .
```

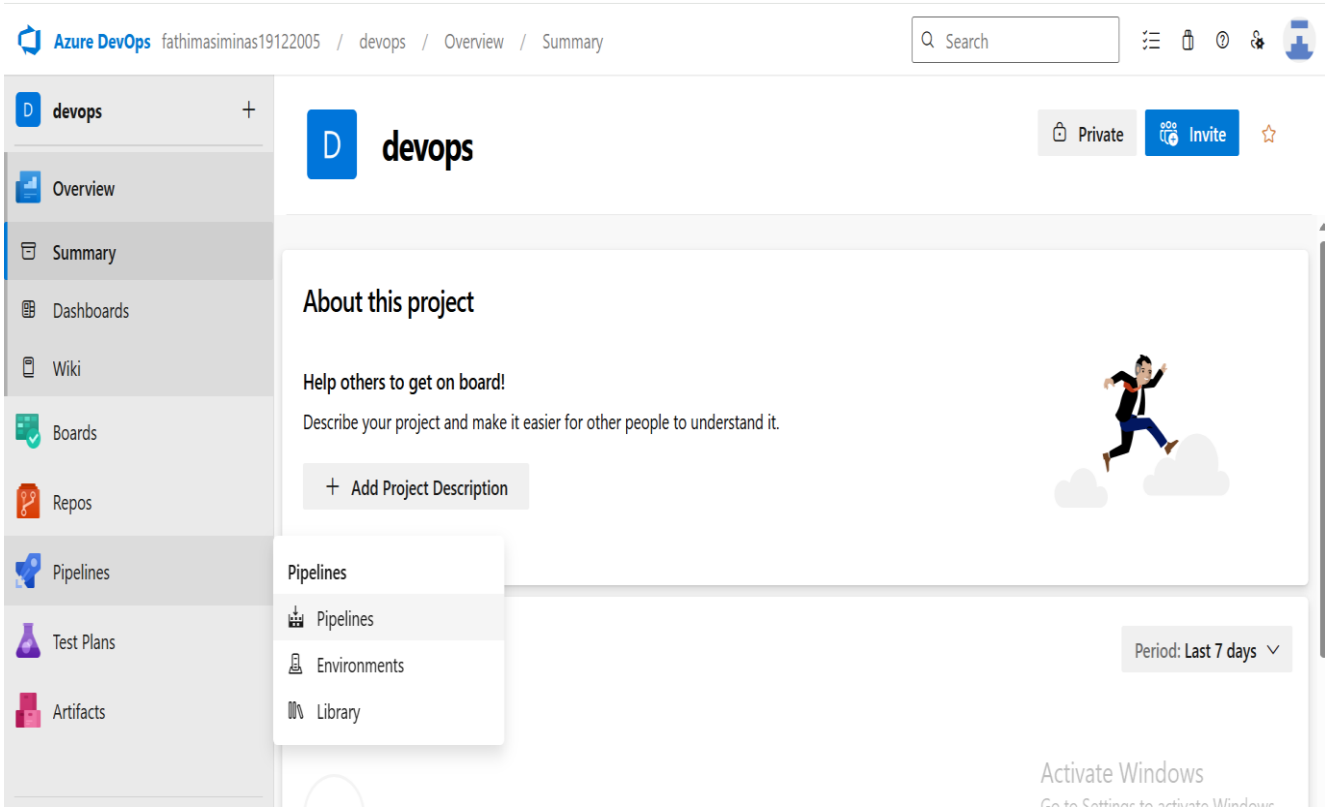
```
$ git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        .gitignore
        .project
        pom.xml
        src/

nothing added to commit but untracked files present (use "git add" to track)

Admin@DESKTOP-MODSNNN MINGW64 /d/Simi/Sample (master)
$ git add .
warning: in the working copy of '.gitignore', LF will be replaced by CRLF the next time Git touches it

Admin@DESKTOP-MODSNNN MINGW64 /d/Simi/Sample (master)
$ git commit -m "First maven PRoject"
[master (root-commit) fd30aee] First maven PRoject
 4 files changed, 43 insertions(+)
 create mode 100644 .gitignore
 create mode 100644 .project
 create mode 100644 pom.xml
 create mode 100644 src/main/java/Demo.java

Admin@DESKTOP-MODSNNN MINGW64 /d/Simi/Sample (master)
$ git remote add origin https://github.com/siminas19/Example.git

Admin@DESKTOP-MODSNNN MINGW64 /d/Simi/Sample (master)
$ git push -u origin master
remote: {"auth_status":"access_denied_to_user","body":"Permission to siminas19/Example.git denied to rebisha1403."}
fatal: unable to access 'https://github.com/siminas19/Example.git/': The requested URL returned error: 403

Admin@DESKTOP-MODSNNN MINGW64 /d/Simi/Sample (master)
$ git push -u origin master
info: please complete authentication in your browser...
Enumerating objects: 9, done.
Counting objects: 100% (9/9), done.
Delta compression using up to 8 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (9/9), 1.02 KiB | 261.00 KiB/s, done.
Total 9 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/siminas19/Example.git
 * [new branch]      master -> master
branch 'master' set up to track 'origin/master'.

Admin@DESKTOP-MODSNNN MINGW64 /d/Simi/Sample (master)
$
```

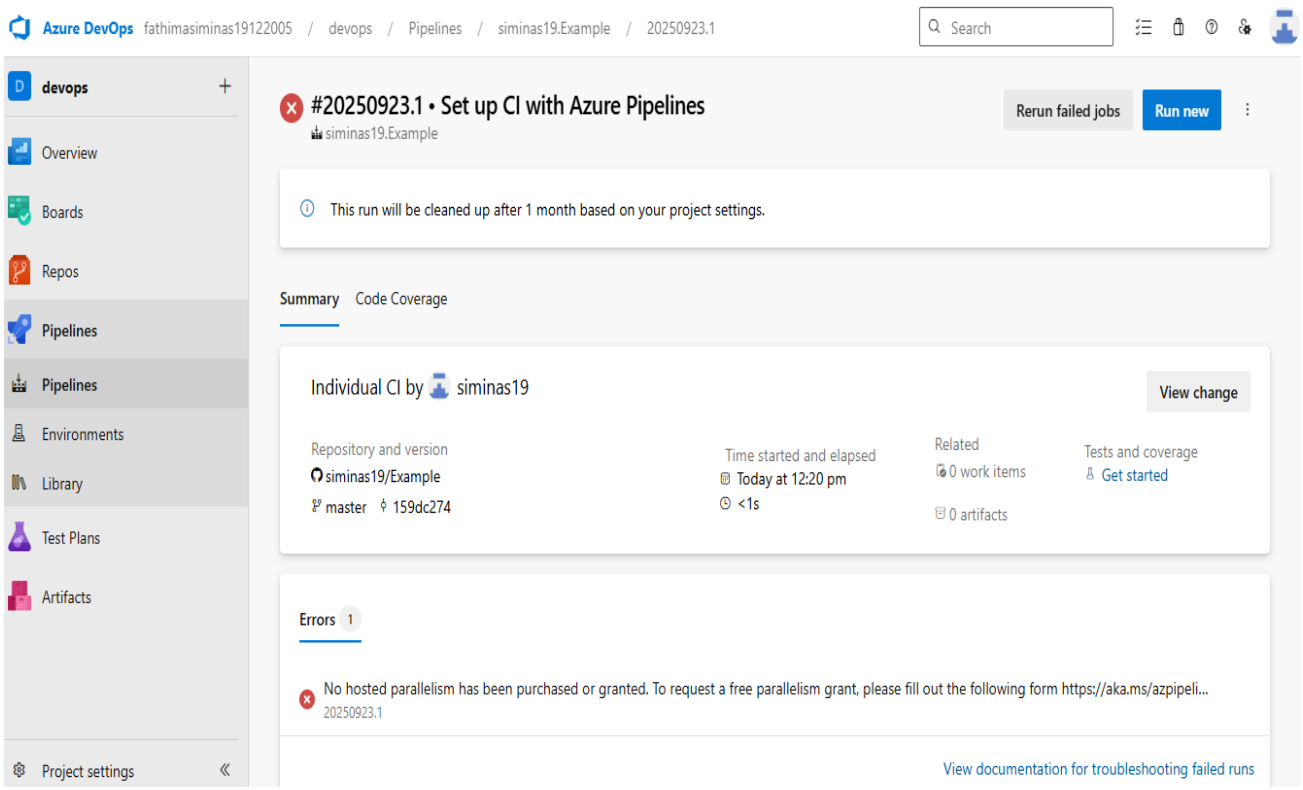



**Step 9: Run the project in Azure Devops.**

- Open Azure devops cloud platformàsign in (through Microsoft account or github account)
- Create an organization →create a project
- Create a pipeline → select type of repository → github
- Select project type → maven → now select → your github repository
- Now your projects yaml file will be opened
- Run the code




Azure DevOps
fathimasiminas19122005 / devops / Overview / Summary
Search
devops
Overview
Summary
Dashboards
Wiki
Boards
Repos
Pipelines
Test Plans
Artifacts
devops
Private
Invite
About this project
Help others to get on board!
Describe your project and make it easier for other people to understand it.
Add Project Description
Pipelines
Pipelines
Environments
Library
Period: Last 7 days
Activate Windows


Azure DevOps fathimasiminas19122005 / devops / Pipelines / siminas19.Example / 20250923.1
Search
devops
Overview
Boards
Repos
Pipelines
Pipelines
Environments
Library
Test Plans
Artifacts
Project settings
#20250923.1 • Set up CI with Azure Pipelines
siminas19.Example
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 siminas19
View change
Repository and version
siminas19/Example
master
159dc274
Time started and elapsed
Today at 12:20 pm
<1s
Related
0 work items
0 artifacts
Tests and coverage
Get started
Errors 1
No hosted parallelism has been purchased or granted. To request a free parallelism grant, please fill out the following form https://aka.ms/azpipeli...
20250923.1
View documentation for troubleshooting failed runs