ChatGPT

Experiment 10: Creating Build Pipelines with Azure DevOps (Maven)

Step-by-Step Execution with Commands

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1. Create Maven Project in IntelliJ

- Open IntelliJ IDEA > New Project
- Choose "Maven" as build system
- Give a project name (e.g., MyAzureApp) and finish
- IntelliJ generates:
- pom.xml
- src/main/java
- src/test/java

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2. Initialize Git Repository

```
git init
git add .
git commit -m "first commit"
git branch -M main
```

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3. Configure Git (if not already)

```
git config --global user.name "your-username"
git config --global user.email "your-email@example.com"
```

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4. Generate SSH Key for GitHub

```
ssh-keygen -t rsa -b 4096 -C "your-email@example.com"
```

- Press ENTER for all prompts

Copy the key:

```
cat ~/.ssh/id_rsa.pub
```

5. Add SSH Key to GitHub

- Go to GitHub > Settings > SSH and GPG Keys
- Click "New SSH Key"
- Paste the copied key

6. Link Local Git to GitHub Repo

```
git remote set-url origin git@github.com:your-username/your-repo.git
git remote -v
git push --set-upstream origin main
```

7. Create Azure DevOps Project

- Visit https://dev.azure.com
- Create a new project

8. Create Pipeline in Azure DevOps

- Go to Pipelines > Create Pipeline
- Choose GitHub (YAML)
- Select your repo and approve access

9. Configure YAML for Maven Build

Create or replace `azure-pipelines.yml` with:

```
trigger:
- main

pool:
  vmImage: 'ubuntu-latest'

steps:
- task: JavaToolInstaller@0
  inputs:
```

```
    versionSpec: '17'
    jdkArchitectureOption: 'x64'
    jdkSourceOption: 'PreInstalled'

- task: Maven@4
  inputs:
    mavenPomFile: 'pom.xml'
    mavenOptions: '-Xmx3072m'
    javaHomeOption: 'JDKVersion'
    jdkVersionOption: '17'
    jdkArchitectureOption: 'x64'
    publishJUnitResults: true
    testResultsFiles: '**/target/surefire-reports/TEST-*.xml'
    goals: 'clean test package'

- task: PublishTestResults@2
  inputs:
    testResultsFiles: '**/target/surefire-reports/TEST-*.xml'
    searchFolder: '$(System.DefaultWorkingDirectory)'
    testRunTitle: 'Maven Unit Tests'
```

10. Save and Run the Pipeline

- Commit the YAML file
- Click "Run pipeline"

11. View Results

- View build logs and test reports in Azure DevOps
- Go to the "Tests" tab to inspect results

Summary of Git Commands

```
git init
git add .
git commit -m "first commit"
git branch -M main
git config --global user.name "your-name"
git config --global user.email "your-email"
ssh-keygen -t rsa -b 4096 -C "your-email"
cat ~/.ssh/id_rsa.pub
git remote set-url origin git@github.com:your/repo.git
```

```
git remote -v
git push --set-upstream origin main
```