

Jenkins Pipeline

What is Pipeline?

It is a set of automated processes (which defines how software moves in stages)
like build project (compile project and install all dependencies)
test project (verify test execution)
deploy (deploy in live environment)

Pipeline describes what happens, when and how in your CI/CD workflow

Stages:

build --> test --> package --> deploy --> notify

Types of pipeline:

Declarative pipeline:

--> structured syntax
--> easy to read and write
--> use as predefined

Create pipeline:

select new Item --> project name pipeline1 --> select pipeline --> click on OK
write description
select discard builds

write script

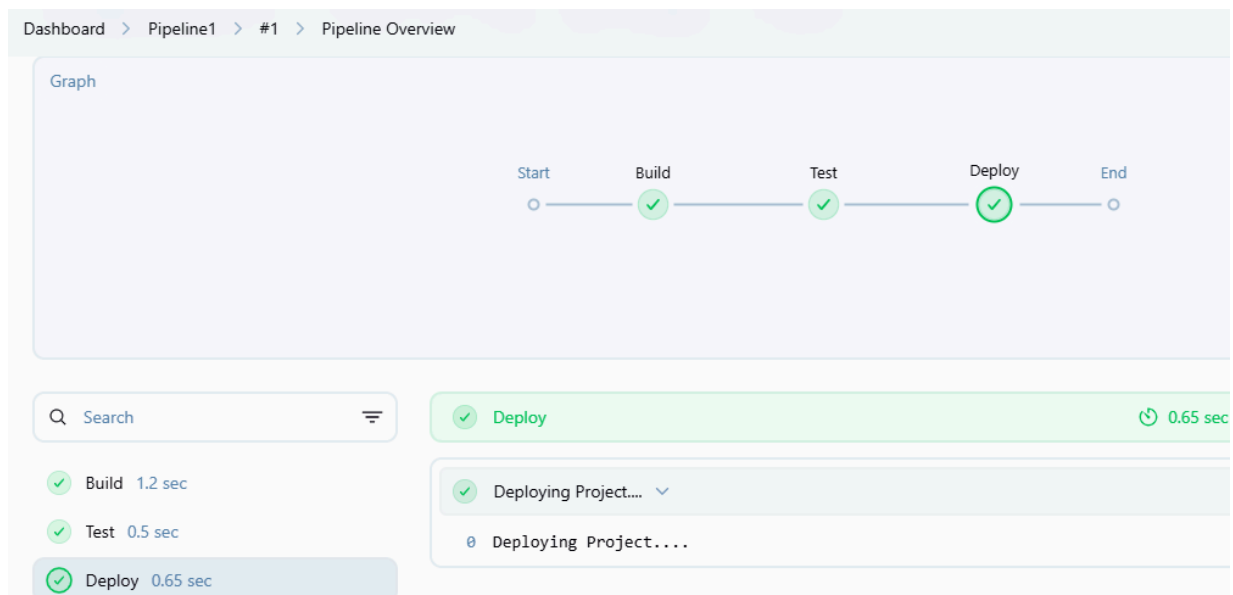
```
pipeline {  
  agent any  
  
  stages {  
    stage('Build') {  
      steps {  
        echo 'Building Project....'  
      }  
    }  
    stage('Test') {  
      steps {
```

```

echo 'Project Tetsing....'
}
}
stage('Deploy') {
steps {
echo 'Deploying Project....'
}
}
}
}
}

```

Save and then click on build now.



Jenkins Run and Schedule

Scheduling a build in a job is very important.

POLL SCM:

Syntax (MINUTE HOUR DOM MONTH DOW)

minute: 0-59

hour: 0-23

DOM: 1-31

MONTH: 1-12

DOW- 0-7 (where 0 and 7 both represent Sunday)

Run on Every hour: H * * * *

Run on Every 15 minutes: H/15 * * * *

Run daily at mid night: 0 0 * * *

Run every day at noon: 0 12 * * *

Run at noon from Monday to Friday: 0 12 * * 1-5

Run at 8 AM on the first day of every month: 0 8 1 * *

How to install plugins?

On your dashboard --> go to manage Jenkins

click on plugins --> click on available plugins



Click on install.


Mailer	✓ Success
Theme Manager	✓ Success
Dark Theme	✓ Success
Loading plugin extensions	✓ Success
Javadoc	✓ Success
Dev Tools Symbols API	✓ Success
jsoup API	✓ Success
JSch dependency	✓ Success
Maven Integration	⋮ Installing
Loading plugin extensions	⋮ Pending

After installation of this plugin you can see the new item added while creating new project, which is maven project.


New Item

Enter an item name

Select an item type



Freestyle project
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.



Maven project
Build a maven project. Jenkins takes advantage of your POM files and drastically reduces the configuration.

Let's Understand to write some more pipeline script.

Let's create a simple Python Project.

Create Pipeline as below:

```

pipeline {
  agent any

  stages {
    stage('Checkout') {
      steps {
        echo 'Clonning repo'
        git branch: 'main', url: 'https://github.com/sonam-niit/python-test.git'
      }
    }
    stage('Run TestCases'){
      steps{
        echo 'executing test cases'
        sh 'pytest'
      }
    }
  }
}

```

In your wsl install pytest: `sudo apt install python3-pytest`

Code you can use from my repo: <https://github.com/sonam-niit/python-test>

