# Lab2

01) What is Jenkins pipeline?

Jenkins pipeline is a collection of plugins which supports implementing and integrating continuous delivery pipelines into Jenkins. A continuous delivery pipeline is an automated expression of your process for getting software from version control right through to your users and customers.

02) What scripting language is Jenkins pipeline syntax based on?

Groovy (java-language)

03) What are the ways you can write pipeline in Jenkins?

**Scripted Pipeline:**

A scripted pipeline uses the Groovy (JVM□based) language to create a pipeline as code.

-Problems with scripted pipeline:

- The imbalance between developers' experience in Groovy and Jenkins creates an impedance mismatch that is not easy to remove.
- Although scripted syntax is powerful and expedites the creation of complex pipelines, it concurrently makes the pipeline hard to read and hard to manage

**Declarative Pipeline:**

The declarative pipeline follows a relatively newer syntax, which narrows the scope of the pipeline structure through a pre-defined "minimum necessary structure." On the technical front, the declarative syntax follows a conditional statement logic that generates a series of stages, executed sequentially throughout the pipeline's lifecycle. declarative pipelines don't make use of Groovy code, the declarative syntax doesn't access valuable APIs.

04) Create jenkins pipeline for your repo and use script file (jenkinsfile) to write pipeline syntax ?

Disable Project

Configure

Delete Pipeline

Full Stage View

Rename

Pipeline Syntax

## Stage View

|  | Hello |
|---|---|
| Average stage times:<br>(Average full run time: ~24s) | 10s |
| #1<br>Feb 10<br>01:28  No Changes | 10s |

## Permalinks

Build History          trend ∨

Filter builds...

⊘ #1     9 Feb 2023, 23:28

Atom feed for all  Atom feed for failures

---

Console Output

View as plain text

Edit Build Information

Delete build '#1'

Git Build Data

Restart from Stage

Replay

Pipeline Steps

Workspaces

```
Started by user Esraa Arafa Ahmed
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in /var/jenkins_home/workspace/piplineGit
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Hello)
[Pipeline] echo
Hello World
[Pipeline] git
The recommended git tool is: NONE
using credential github-token
Cloning the remote Git repository
Cloning repository https://github.com/esraa-asoo/jenkins-demo
 > git init /var/jenkins_home/workspace/piplineGit # timeout=10
Fetching upstream changes from https://github.com/esraa-asoo/jenkins-demo
 > git --version # timeout=10
 > git --version # 'git version 2.30.2'
using GIT_ASKPASS to set credentials
```

```
Dashboard  piplineGit  >  #1                > git init /var/jenkins_home/workspace/piplineGit # timeout=10
                                            Fetching upstream changes from https://github.com/esraa-asoo/jenkins-demo
        Workspaces                          > git --version # timeout=10
                                            > git --version # 'git version 2.30.2'
                                            using GIT_ASKPASS to set credentials
                                            > git fetch --tags --force --progress -- https://github.com/esraa-asoo/jenkins-demo +refs/heads/*:refs/remotes/origin/* #
                                            timeout=10
                                            > git config remote.origin.url https://github.com/esraa-asoo/jenkins-demo # timeout=10
                                            > git config --add remote.origin.fetch +refs/heads/*:refs/remotes/origin/* # timeout=10
                                            Avoid second fetch
                                            > git rev-parse refs/remotes/origin/master^{commit} # timeout=10
                                            Checking out Revision 96f34093ac3a9987e6c61cc1ba48ee7edc5ae0f3 (refs/remotes/origin/master)
                                            > git config core.sparsecheckout # timeout=10
                                            > git checkout -f 96f34093ac3a9987e6c61cc1ba48ee7edc5ae0f3 # timeout=10
                                            > git branch -a -v --no-abbrev # timeout=10
                                            > git checkout -b master 96f34093ac3a9987e6c61cc1ba48ee7edc5ae0f3 # timeout=10
                                            Commit message: "Add files via upload"
                                            First time build. Skipping changelog.
                                            [Pipeline] }
                                            [Pipeline] // stage
                                            [Pipeline] }
                                            [Pipeline] // node
                                            [Pipeline] End of Pipeline
                                            Finished: SUCCESS
```

05) Create another multibranch pipeline and filter branches to contain only (master, dev , test ) ?

May not be supported on older versions of GitHub Enterprise. See help button.

## Configuration

- ⚙ General
- ⚙ Branch Sources
- ⚙ **Build Configuration**
- ⚙ Scan Multibranch Pipeline Triggers
- ⚙ Orphaned Item Strategy
- ⚙ Appearance

### Filter by name (with wildcards)

Include  ?

```
master dev test
```

Exclude  ?

Save    Apply

---

Loads a library from an SCM plugin using newer interfaces optimized for this purpose. The recommended option when available.

## Configuration

- ⚙ General
- ⚙ Branch Sources
- ⚙ Build Configuration
- ⚙ Scan Multibranch Pipeline Triggers
- ⚙ Orphaned Item Strategy
- ⚙ Appearance

### Source Code Management

```
Git                                              ⌄
```

Project Repository  ?

```
https://github.com/esraa-asoo/jenkins-demo
```

Credentials  ?

```
esraa-asoo/******                                ⌄
```

+ Add

Behaviours

# Configuration

- General
- Branch Sources
- Build Configuration
- Scan Multibranch Pipeline Triggers
- Orphaned Item Strategy
- Appearance

Behaviours

## Discover branches

?

X

## Filter by name (with wildcards)

Include ?

```
master dev test
```

Exclude ?

```
```

---

- Status
- Changes
- Build with Parameters
- View Configuration
- Full Stage View
- GitHub
- Pipeline Syntax
- Build History          trend ⌄

# Branch master

This build requires parameters:

☑ project

this paramater help you to know project name

namespace

```
dev ⌄
```

Build

Scan Repository Log

Disable Multibranch Pipeline

Branches (3)   Pull Requests (0)

- Multibranch Pipeline Events
- Delete Multibranch Pipeline
- People
- Build History
- Project Relationship
- Check File Fingerprint
- GitHub
- Rename

| S | W | Name ↓ | Last Success | Last Failure | Last Duration | |
|---|---|---|---|---|---|---|
| ✓ | ☀ | dev | 1 min 14 sec  #1 | N/A | 18 sec | ▷ |
| ✓ | ☀ | master | 3 min 44 sec  #1 | N/A | 15 sec | ▷ |
| ✓ | ☀ | test | 1 min 14 sec  #1 | N/A | 21 sec | ▷ |

Icon:  S   M   L      Icon legend      Atom feed for all      Atom feed for failures      Atom feed for just latest builds

---

Status

Branch master

- Changes
- Build with Parameters
- View Configuration
- Full Stage View
- GitHub
- Pipeline Syntax

Full project name: multipipline/master

## Stage View

| | Declarative: Checkout SCM | check | test | deployment |
|---|---|---|---|---|
| Average stage times: (Average full run time: ~15s) | 9s | 274ms | 355ms | 303ms |
| #1 Feb 10 02:05  No Changes | 9s | 274ms | 355ms | 303ms |

## Permalinks

- Build History    trend ∨

Q Filter builds...   /

✓ #1   10 Feb 2023, 00:05

Atom feed for all   Atom feed for failures

• Last build (#1) 4 min 36 sec ago

## Status

Changes

Build with Parameters

View Configuration

Full Stage View

GitHub

Pipeline Syntax

Build History          trend ∨

Filter builds...

# Branch test

Full project name: multipipline/test

## Stage View

| | Declarative: Checkout SCM | check | test | deployment |
|---|---|---|---|---|
| Average stage times: (Average full run time: ~21s) | 14s | 710ms | 588ms | 244ms |
| Feb 10 02:08 No Changes | 14s | 710ms | 588ms | 244ms |

localhost:8080/job/multipipline/job/dev/          70%

⊕ Centos  ⊕ Wiki  ⊕ Documentation  ⊕ Forums

Status

Changes

Build with Parameters

View Configuration

Full Stage View

GitHub

Pipeline Syntax

Build History          trend ∨

Filter builds...

# Branch dev

Full project name: multipipline/dev

## Stage View

| | Declarative: Checkout SCM | check | test | deployment |
|---|---|---|---|---|
| Average stage times: (Average full run time: ~18s) | 11s | 529ms | 656ms | 769ms |
| Feb 10 02:08 No Changes | 11s | 529ms | 656ms | 769ms |

## Permalinks

#1          10 Feb 2023  00:08

Scan Repository Log
Configure

Scan Repository Now

Scan Repository Log

View as plain text

Multibranch Pipeline Events

Delete Multibranch Pipeline

People

Build History

Project Relationship

Check File Fingerprint

GitHub

localhost:8080/fingerprintCheck

Started by user Esraa Arafa Ahmed
[Fri Feb 10 00:07:49 UTC 2023] Starting branch indexing...
00:07:49 Connecting to https://api.github.com using esraa-asoo/******
Examining esraa-asoo/jenkins-demo

Checking branches...

Getting remote branches...

Checking branch master

Getting remote pull requests...
    'Jenkinsfile' found
  Met criteria
No changes detected: master (still at 96f34093ac3a9987e6c61cc1ba48ee7edc5ae0f3)

Checking branch dev
   'Jenkinsfile' found
  Met criteria
Scheduled build for branch: dev

Checking branch test

---

Build History

Project Relationship

Check File Fingerprint

GitHub

Rename

Pipeline Syntax

Credentials

**Build Queue** ⌄

No builds in the queue.

**Build Executor Status** ⌄

1 Idle

2 Idle

Getting remote pull requests...
   'Jenkinsfile' found
  Met criteria
No changes detected: master (still at 96f34093ac3a9987e6c61cc1ba48ee7edc5ae0f3)

Checking branch dev
   'Jenkinsfile' found
  Met criteria
Scheduled build for branch: dev

Checking branch test
   'Jenkinsfile' found
  Met criteria
Scheduled build for branch: test

3 branches were processed

Checking pull-requests...

0 pull requests were processed

Finished examining esraa-asoo/jenkins-demo

[Fri Feb 10 00:07:52 UTC 2023] Finished branch indexing. Indexing took 3.3 sec
Finished: SUCCESS