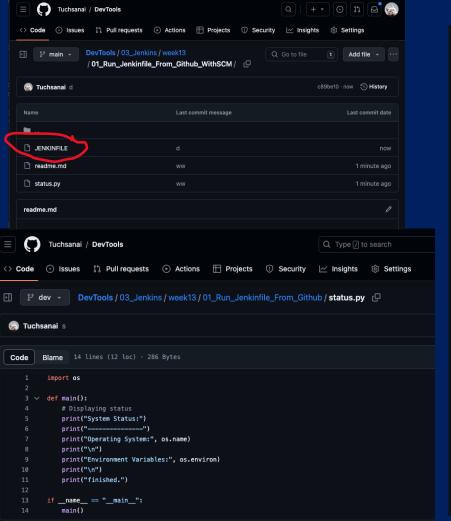


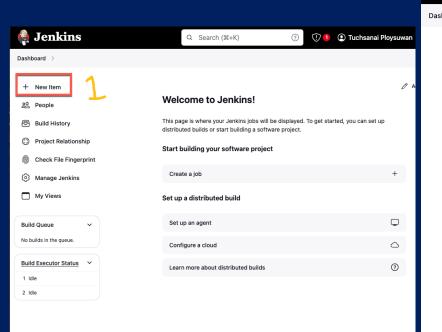
Week 13: SOFTWARE DEVELOPMENT TOOLS AND ENVIRONMENTS

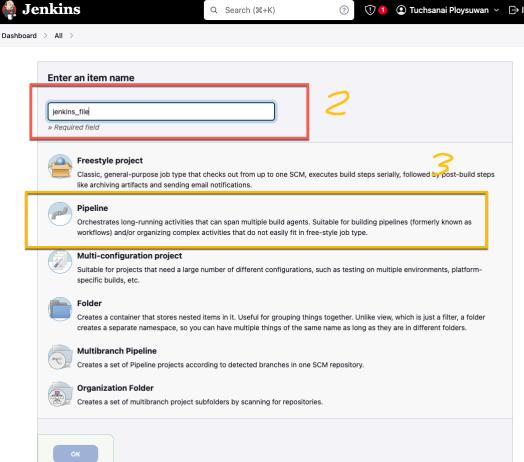
LAB 01: Run Jenkinfile using SCM From Github

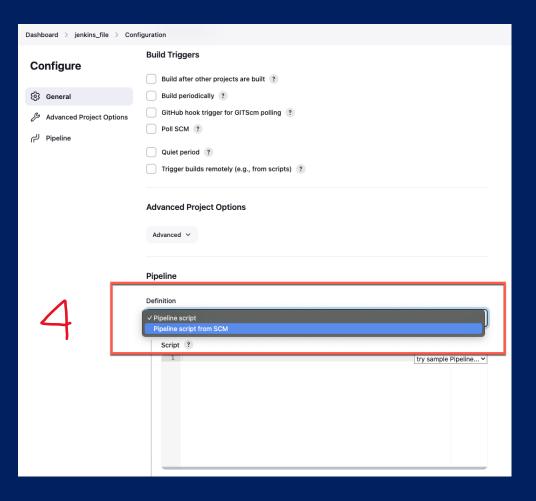
In Jenkins, "SCM" stands for Source Code Management. SCM in Jenkins refers to the process of managing and integrating source code from version control systems into Jenkins projects.



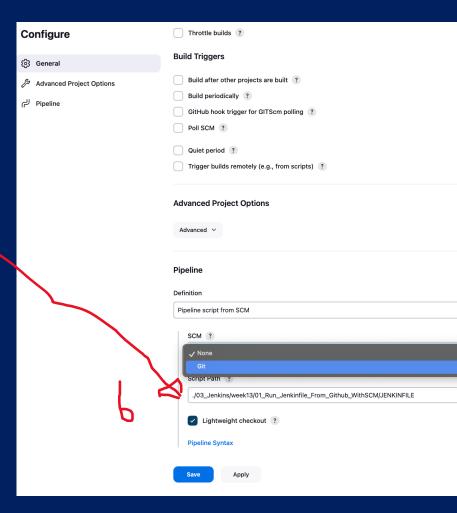
```
្ង main 🕶
                    DevTools / 03_Jenkins / week13
                                                                                    Q Go to file
                    / 01_Run_Jenkinfile_From_Github
                     / JENKINFILE 📮
 Tuchsanai aa
                                                                              65dd21b · 6 minutes ago ( History
29 lines (27 loc) · 814 Bytes
                                                                                    Raw [□ 🕹 🕖 🕶
          Blame
  Code
           pipeline {
               agent any
               stages {
                   stage('Check Python Installation') {
                       steps {
                           script {
                              // Check if Python is installed
                              def pythonInstalled = sh(script: "which python3", returnStatus: true) == 0
                              if (!pythonInstalled) {
                                  // Install Python if not installed
                                  sh 'sudo apt update'
                                  sh 'sudo apt install -y python3'
                  stage('Run Python Script') {
                       steps {
                           script {
                              // Run Python script with only os library
                              sh 'python3 status.py'
                              sh 'ls -l'
```

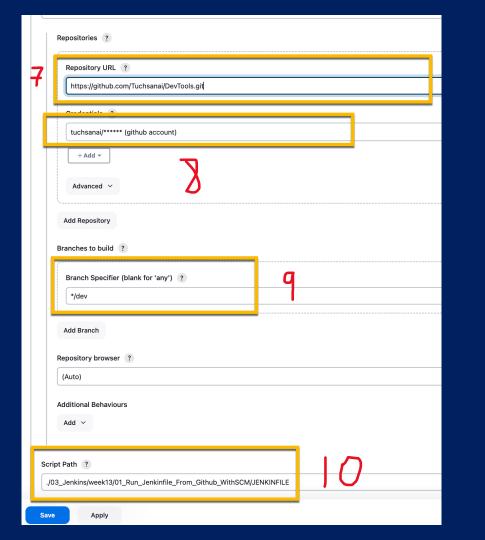


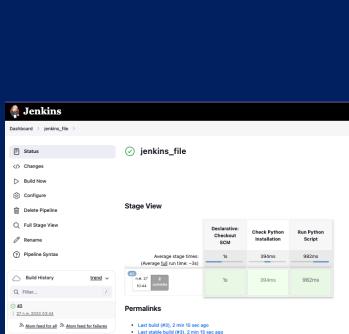




```
DevTools / 03_Jenkins / week13
     ₽ main 🕶
                                                                                          Q Go to file
                     JENKINFILE 📮
 Tuchsanai d
                                                                                    c89be10 · 1 minute ago 🕒 History
30 lines (27 loc) · 894 Bytes
                                                                                          Ray □ ± // → ⊙
          Blame
  Code
           pipeline {
               agent any
               stages {
                   stage('Check Python Installation') {
                      steps {
                          script {
                              // Check if Python is installed
                              def pythonInstalled = sh(script: "which python3", returnStatus: true) == 0
                              if (!pythonInstalled) {
                                  // Install Python if not installed
                                  sh 'sudo apt update'
                                  sh 'sudo apt install -y python3'
                  stage('Run Python Script') {
                      steps {
                          script {
                              // Run Python script with only os library
                              sh 'ls -l'
                              sh 'python3 ./03_Jenkins/week13/01_Run_Jenkinfile_From_Github_WithSCM/status.py'
```







. Last successful build (#3), 2 min 15 sec ago

· Last completed build (#3), 2 min 15 sec ago

Dashboard > jenkins_file > #3

F Status

</>
Changes

Console Output

Yiew as plain text

M Edit Build Information

T Delete build '#3'

Restart from Stage

Git Build Data

Pipeline Steps

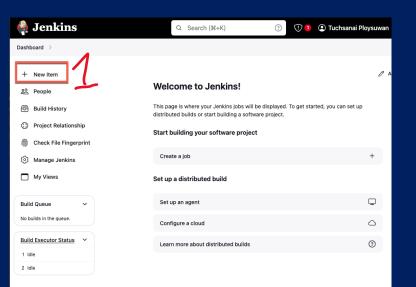
── Workspaces

← Previous Build

A Replay

Console Output Started by user Tuchsanai Ploysuwan Obtained ./03_Jenkins/week13/01_Run_Jenkinfile_From_Github/JENKINFILE from git https://github.com/Tuchsanai/DevTools.git [Pipeline] Start of Pipeline [Pipeline] node Running on Jenkins in /var/lib/jenkins/workspace/jenkins_file [Pipeline] { [Pipeline] stage [Pipeline] { (Declarative: Checkout SCM) [Pipeline] checkout The recommended git tool is: git using credential id_github > git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/jenkins_file/.git # timeout=10 Fetching changes from the remote Git repository > git config remote.origin.url https://github.com/Tuchsanai/DevTools.git # timeout=10 Fetching upstream changes from https://github.com/Tuchsanai/DevTools.git > git --version # timeout=10 > git --version # 'git version 2.34.1' using GIT_ASKPASS to set credentials github account > git fetch --tags --force --progress -- https://github.com/Tuchsanai/DevTools.git +refs/heads/*:refs/remotes/origin/* # timeout=10 > git rev-parse refs/remotes/origin/dev^{commit} # timeout=10 Checking out Revision adc46fceb6618509afeccd13dd26c1406fd5dbf3 (refs/remotes/origin/dev) > git config core.sparsecheckout # timeout=10 > git checkout -f adc46fceb6618509afeccd13dd26c1406fd5dbf3 # timeout=10 Commit message: "delete files" > git rev-list --no-walk 32de38e68ab198bf44721d9a241c74dc5f92a427 # timeout=10 [Pipeline] } [Pipeline] // stage [Pipeline] withEnv [Pipeline] { [Pipeline] stage [Pipeline] { (Check Python Installation) [Pipeline] script [Pipeline] { [Pipeline] sh + which python3 /usr/bin/python3 [Pipeline] } [Pipeline] // script [Pipeline] } [Pipeline] // stage [Pipeline] stage [Pipeline] { (Run Python Script) [Pipeline] script [Pipeline] { [Pipeline] sh + pwd /var/lib/jenkins/workspace/jenkins_file [Pipeline] sh + pvthon3 ./03 Jenkins/week13/01 Run Jenkinfile From Github/status.pv System Status: Operating System: posix Environment Variables: environ({'JENKINS_HOME': '/var/lib/jenkins', 'USER': 'jenkins', 'CI': 'true', 'RUN_CHANGES_DISPLAY_URL': 'http://54.251.188.144:8880/job/jenkins_file/3/display/redirect?page=changes', 'NODE_LABELS': 'built-in', 'HUDSON_URL': 'http://54.251.188.144:8880/', 'GIT_COMMIT': 'adc46fceb6618509afeccd13dd26c1406fd5dbf3', 'HONE': '/var/lib/jenkins', 'BUILD_URL': 'http://54.251.180.144:8080/job/jenkins_file/3/', 'HUDSON_COOKIE': '49a06cf3-5d30-418d-b9f6b4626631d20a', 'JENKINS SERVER COOKIE': 'durable-d51f3f7cf430a25df33cbb3c9f7893b2c452d20ea1b32523e4a26025dc82651f', 'NOTIFY SOCKET': '/run/systemd/notify', 'SYSTEMD EXEC PID': '8226', 'WORKSPACE': '/var/lib/jenkins/workspace/jenkins_file', 'LOGNAME': 'jenkins', 'NODE_NAME': 'built-in', 'JOURNAL_STREAM': '8:46337', 'RUN_ARTIFACTS_DISPLAY_URL': 'http://54.251.180.144:8080/job/jenkins_file/3/display/redirect?page=artifacts', 'STAGE_NAME': 'Run Python Script', 'EXECUTOR_NUMBER': '0', 'GIT_BRANCH': 'origin/dev', 'RUN_TESTS_DISPLAY_URL': 'http://54.251.180.144:8080/job/jenkins_file/3/display/redirect?page=tests', 'BUILD_DISPLAY_NAME': 'w3', 'HUDSON_HOME': '/var/lib/jenkins', 'JOB_BASE_NAME': 'jenkins_file', 'PATH': '/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/snap/bin', 'INVOCATION_ID': '3dd1b667c6f244@d98512e@c5fa349ed', 'BUILD_ID': '3', 'BUILD_TAG': 'jenkins-jenkins_file-3', 'LANG': 'C.UTF-8', 'JENKINS_URL': 'http://54.251.180.144:8080/', 'JOB_URL': 'http://54.251.180.144:8080/job/jenkins_file/', 'GIT_URL': 'https://github.com/Tuchsanai/DevTools.git', 'BUILD_NUMBER': '3', 'JENKINS_NODE_COOKIE': '9b609257-aaae-4d4c-ae44-6773be581705', 'SHELL': '/bin/bash', 'RUN_DISPLAY_URL': 'http://54.251.180.144:8080/job/jenkins_file/3/display/redirect', 'HUDSON_SERVER_COOKIE': '25d1a75683dc7e3e', 'JOB_DISPLAY_URL': 'http://54.251.180.144:8080/job/jenkins_file/display/redirect', 'JOB_NAME': 'jenkins_file', 'PWD': '/var/lib/jenkins/workspace/jenkins_file', 'GIT_PREVIOUS_COMMIT': '32de38e68ab198bf44721d9a241c74dc5f92a427', 'WORKSPACE_TMP': '/var/lib/jenkins/workspace/jenkins_file@tmp'}) finished

LAB 02: Run Jenkinfile without SCM From Github



Enter an item name

No_SCM

» Required field



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.



Pipeline

Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.



Multi-configuration project

Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.



Folder

Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.



Multibranch Pipeline

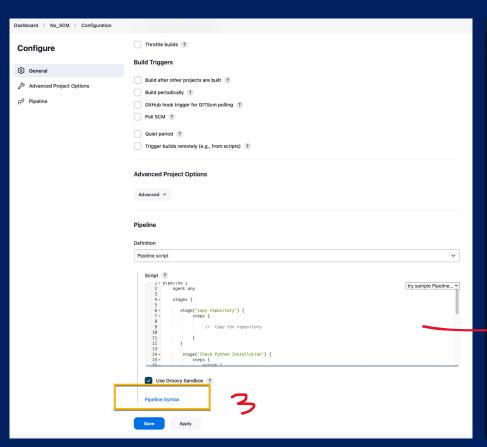
Creates a set of Pipeline projects according to detected branches in one SCM repository.

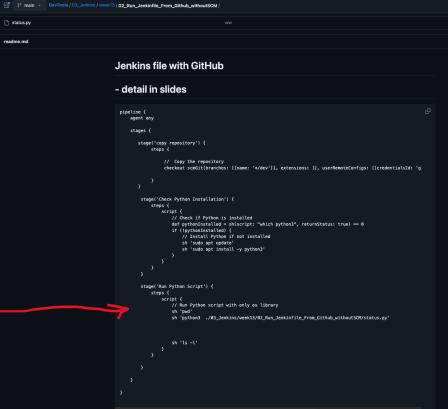


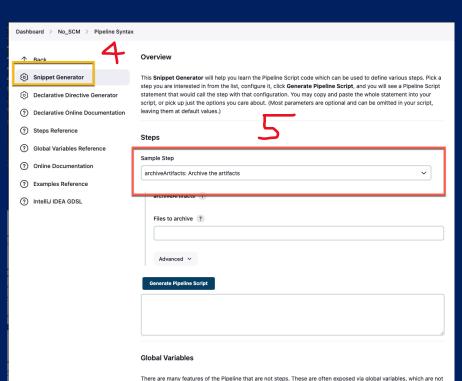
Organization Folder

Creates a set of multibranch project subfolders by scanning for repositories.

ОК







supported by the snippet generator, See the Global Variables Reference for details.

Overview

↑ Back

Snippet Generator

?) Steps Reference

Declarative Directive Generator

(?) Global Variables Reference

(?) Online Documentation

? Examples Reference

(?) IntelliJ IDEA GDSL

Declarative Online Documentation

This **Snippet Generator** will help you learn the Pipeline Script code which can be used to define various steps. Pick a step you are interested in from the list, configure it, click **Generate Pipeline Script**, and you will see a Pipeline Script statement that would call the step with that configuration. You may copy and paste the whole statement into your script, or pick up just the options you care about. (Most parameters are optional and can be omitted in your script, leaving them at default values.)

Steps

Sample Step

✓ archiveArtifacts: Archive the artifacts bat: Windows Batch Script

catchError: Catch error and set build result to failure checkout: Check out from version control

configFileProvider: Provide Configuration files

deleteDir: Recursively delete the current directory from the workspace

dir: Change current directory echo: Print Message

emailext: Extended Email

emailextrecipients: Extended Email Recipients

error: Error signal

fileExists: Verify if file exists in workspace

findBuildScans: Find published build scans

fingerprint: Record fingerprints of files to track usage

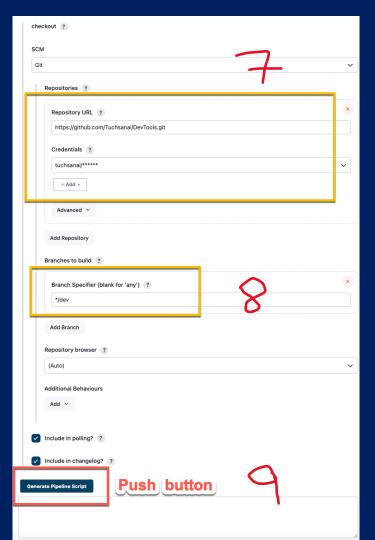
git: Git

input: Wait for interactive input

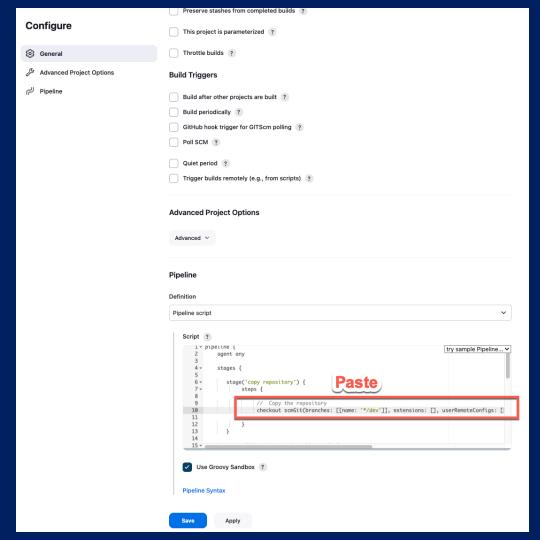
isUnix: Checks if running on a Unix-like node

junit: Archive JUnit-formatted test results

library: Load a library on the fly



Repositories ?	
Repository URL ?	
https://github.com/Tuchsanai/DevTools.git	
Credentials ?	
tuchsanai/*****	
+Add •	
Advanced ∨	
Add Repository	
Branches to build ?	
Branch Specifier (blank for 'any') ?	
*/dev	
Add Branch	
Repository browser ?	
(Auto)	
Additional Behaviours	
Add ∨	
Include in polling? (?)	10
Include in changelog? ?	. •
te Pipeline Script	



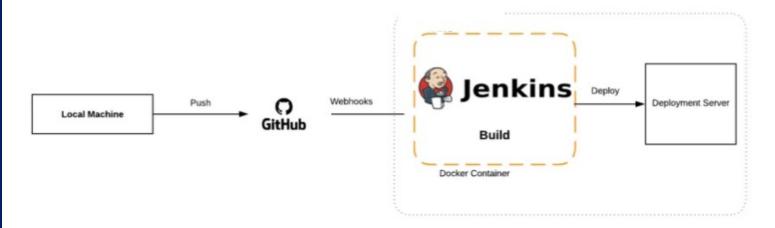
Console Output

```
Started by user to
 [Pipeline] Start of Pipeline
 [Pipeline] node
 Running on Jenkins in /var/lib/jenkins/workspace/No_SCM
 [Pipeline] stage
 [Pipeline] { (copy repository)
The recommended git tool is: NONE
using credential github
 > git rev-parse ---resolve-git-dir /var/lib/jenkins/workspace/No_SCM/.git # timeout=10
Fetching changes from the remote Git repository
 > git config remote.origin.url https://github.com/Tuchsanai/DevTools.git # timeout=10
Fetching upstream changes from https://github.com/Tuchsanai/DevTools.git
 > git --version # timeout=10
 > git --version # 'git version 2.34.1'
 using GIT_ASKPASS to set credentials
 > git fetch --tags --force --progress -- https://github.com/Tuchsanai/DevTools.git +refs/heads/*:refs/remotes/origin/* # timeout=10
 > git rev-parse refs/remotes/origin/dev^{commit} # timeout=10
Checking out Revision f773695d8493e3e2f982ebe6cee9ab80461af605 (refs/remotes/origin/dev)
 > git config core.sparsecheckout # timeout=10
 > git checkout -f f773695d8493e3e2f982ebe6cee9ab80461af605 # timeout=10
Commit message: "delete files"
First time build. Skipping changelog.
 [Pipeline] }
 [Pipeline] // stage
 [Pipeline] stage
 [Pipeline] sh
+ which python3
/usr/bin/python3
 [Pipeline] // script
 [Pipeline] // stage
 [Pipeline] stage
 [Pipeline] script
/var/lib/jenkins/workspace/No_SCM
+ python3 ./03_Jenkins/week13/02_Run_Jenkinfile_From_Github_withoutSCM/status.py
System Status:
Operating System: posix
 Environment Variables: environ({'JENKINS_HOME': '/var/lib/jenkins', 'USER': 'jenkins', 'CI': 'true', 'RUN_CHANGES_DISPLAY_URL':
 'http://175.41.181.239:8888/job/No_SCM/2/display/redirect?page=changes', 'NODE_LABELS': 'built-in', 'HUDSON_URL': 'http://175.41.181.239:8888/', 'HOME':
 '/var/lib/jenkins', 'BUILD_URL': 'http://175.41.181.239:8080/job/No_SCM/2/', 'HUDSON_COOKIE': 'a7b50642-e0f0-47b3-9815-314babfe139f',
 'JENKINS_SERVER_COOKIE': 'durable-586d74ee4c1e7d1eccf6b9cf3ed720fb78e911caa0476f3098a9c02a53e30619', 'NOTIFY_SOCKET': '/run/systemd/notify',
 'SYSTEMD_EXEC_PID': '7560', 'WORKSPACE': '/var/lib/jenkins/workspace/No_SCM', 'LOGNAME': 'jenkins', 'NODE_NAME': 'built-in', 'JOURNAL_STREAM': '8:44069',
 'RUN_ARTIFACTS_DISPLAY_URL': 'http://175.41.181.239:8080/job/No_SCM/2/display/redirect?page=artifacts', 'STAGE_NAME': 'Run Python Script',
 'EXECUTOR NUMBER': '1', 'RUN TESTS DISPLAY URL': 'http://175.41.181.239:8080/job/No SCN/2/display/redirect?page=tests', 'BUILD DISPLAY NAME': '#2',
 'HUDSON_HOME': '/var/lib/jenkins', 'JOB_BASE_NAME': 'No_SCM', 'PATH': '/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/shin:/snap/bin',
 'INVOCATION_ID': 'aca2f35982ce43aaa80dd8f676ec00ae', 'BUILD_ID': '2', 'BUILD_TAG': 'jenkins-No_SCM-2', 'LANG': 'C.UTF-8', 'JENKINS_URL':
 http://175.41.181.239:8080/', 'JOB_URL': 'http://175.41.181.239:8080/job/No_SCM/', 'BUILD_NUMBER': '2', 'JENKINS_NODE_COOKIE': '3b100ed5-a913-4708-99b4-
 25497ee17a95', 'SHELL': '/bin/bash', 'RUN DISPLAY URL': 'http://175.41.181.239:8080/job/No SCN/2/display/redirect', 'HUDSON SERVER COOKIE':
 '4dbe3bd064927178', 'JOB_DISPLAY_URL': 'http://175.41.181.239:8080/job/No_SCM/display/redirect', 'JOB_NAME': 'No_SCM', 'PWD':
 '/var/lib/jenkins/workspace/No SCM', 'WORKSPACE TMP': '/var/lib/jenkins/workspace/No SCMBtmp'})
[Pipeline] sh
+ ls -l
total 28
 drwxr-xr-x 6 jenkins jenkins 4096 Feb 28 08:53 00_GIT
 drwxr-xr-x 3 jenkins jenkins 4096 Feb 28 08:53 01_Google Cloud
drwxr-xr-x 6 jenkins jenkins 4096 Feb 28 08:53 02_Docker
drwxr-xr-x 4 jenkins jenkins 4096 Feb 28 08:53 03_Jenkins
drwxr-xr-x 4 jenkins jenkins 4096 Feb 28 08:53 04 kubernetes
 drwxr-xr-x 2 jenkins jenkins 4096 Feb 28 08:53 Mini_Project
 -rw-r--r-- 1 jenkins jenkins 1695 Feb 28 08:53 README.md
```









Delivery (CD).

