Module 6: Jenkins Assignment - 3

Tasks To Be Performed:

1. Create a pipeline in Jenkins

2. Once push is made to “develop” a branch in Git, trigger job “test”. This will copy Git files to test node

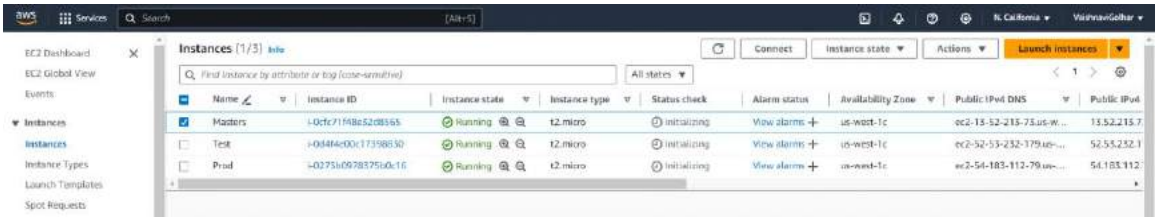
3. If test job is successful, then prod job should be triggered

4. Prod jobs should copy files to prod node

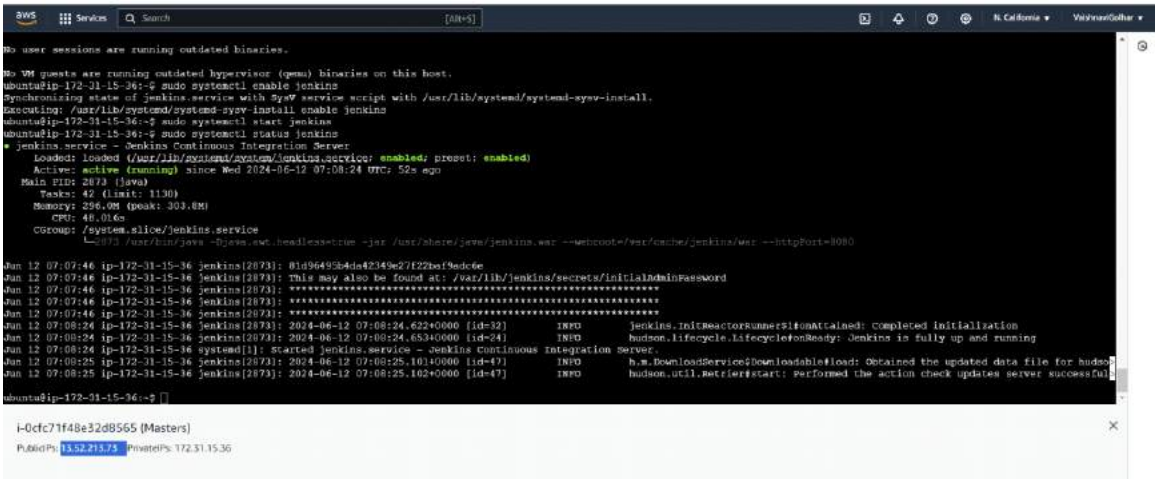
SOLUTION:

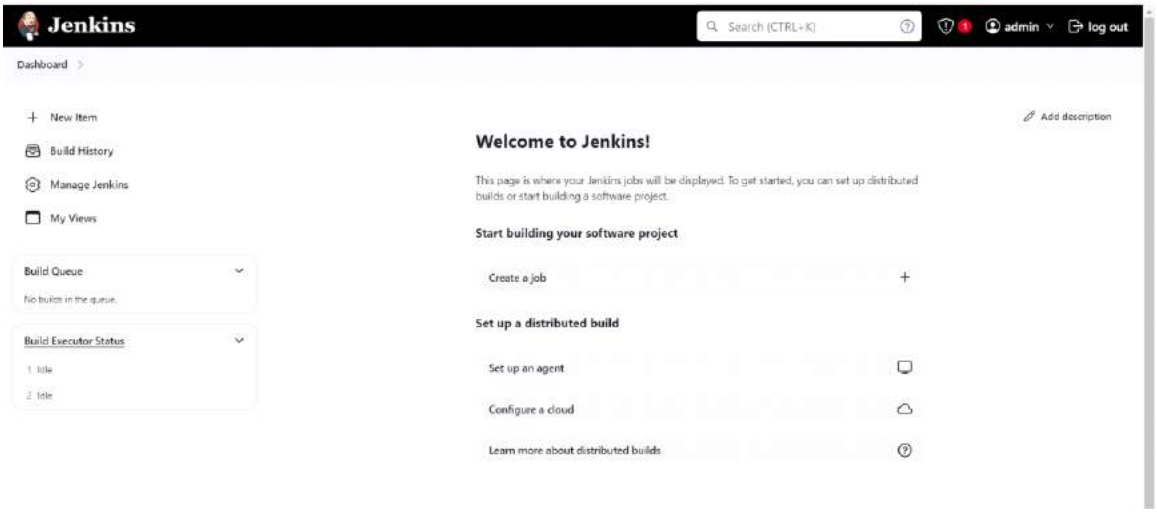
1. Create Jenkins Master & Two Jenkins Slave Machine

A. Create Three Amazon EC2 Instances Named As Jenkins Master & Test & Prod

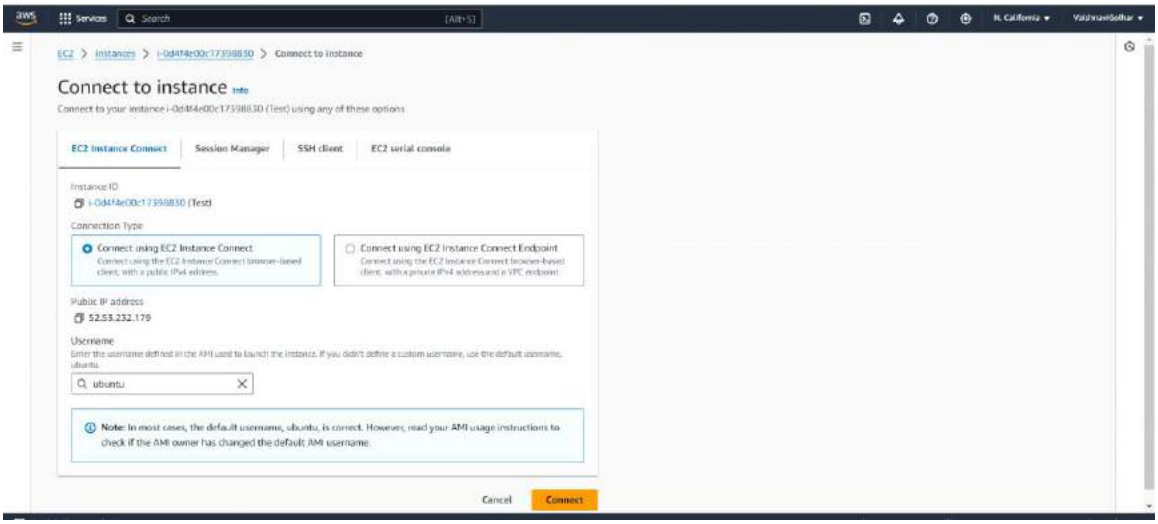


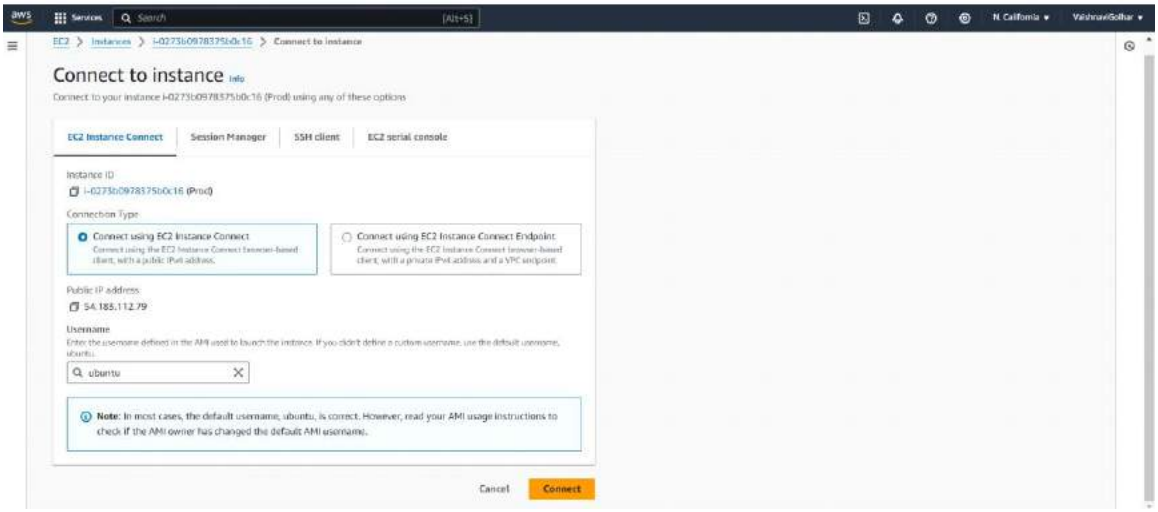
B. Install jenkins and Java on Masters



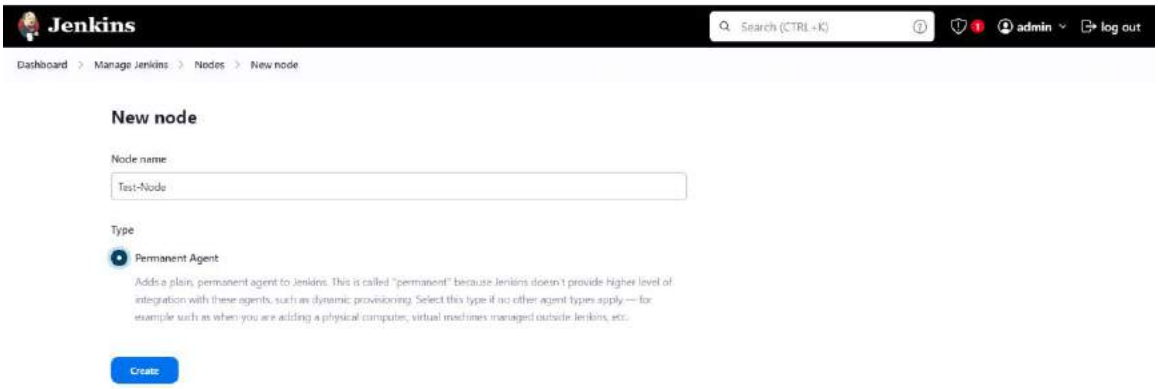


C. Install "Java " over Slaves(Test and Prod) machine





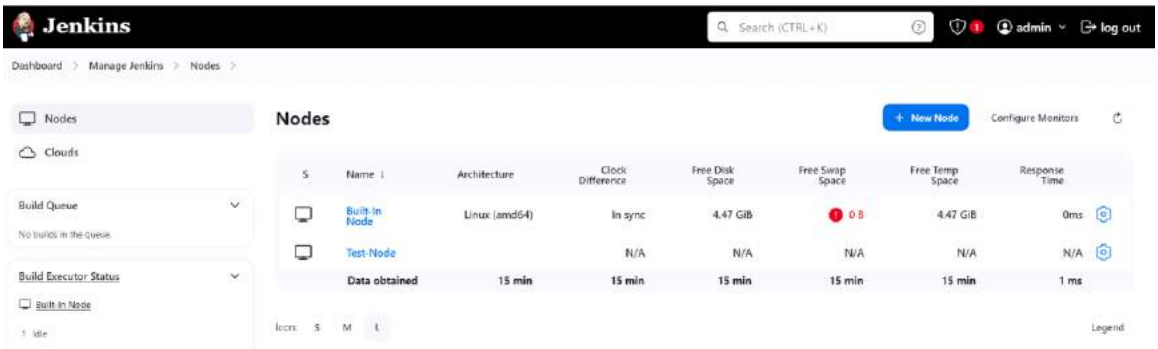
D. Add Nodes (Test & Prod) in Jenkins-Master using .pem

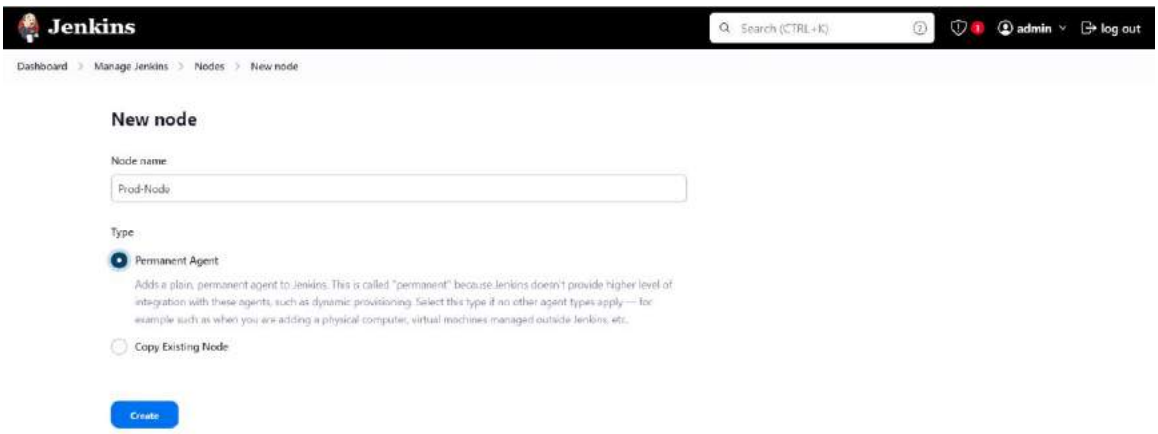


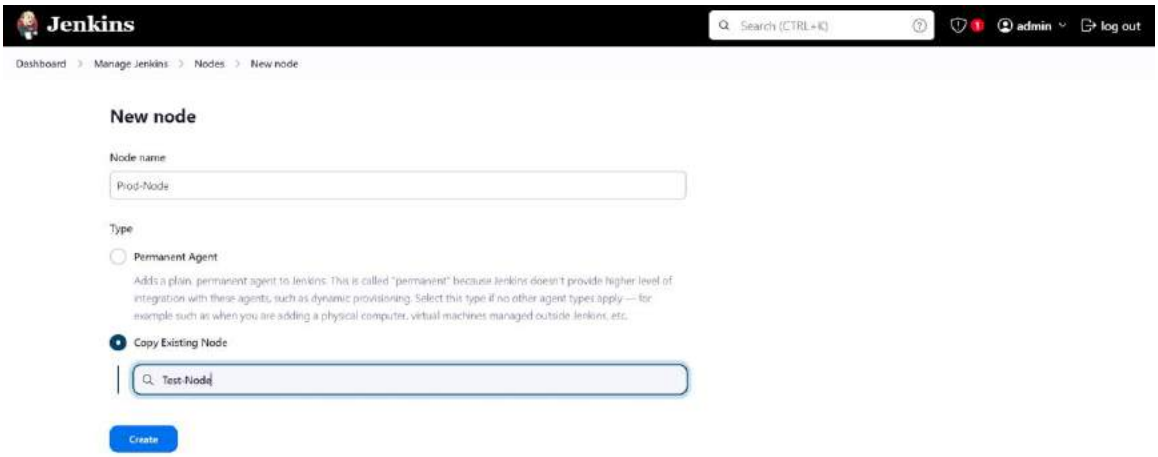
```
ubuntu@ip-172-31-4-129:~$ mkdir jenkins
ubuntu@ip-172-31-4-129:~$ cd jenkins
ubuntu@ip-172-31-4-129:~/jenkins$ pwd
/home/ubuntu/jenkins
ubuntu@ip-172-31-4-129:~/jenkins$
```

i-0d4f4e00c17398830 (Test)

PublicIPs: 52.53.232.179 PrivateIPs: 172.31.4.129



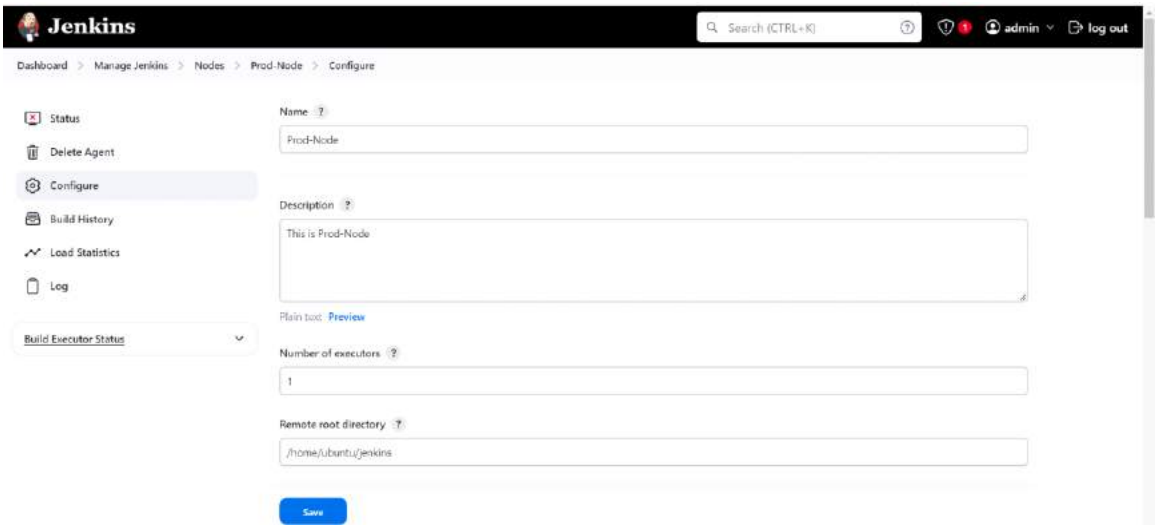


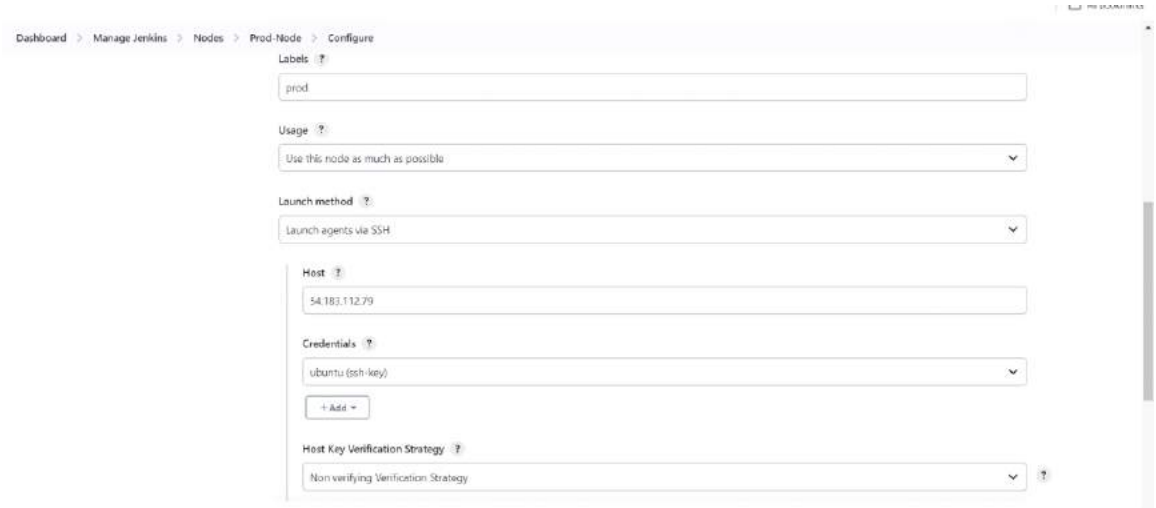


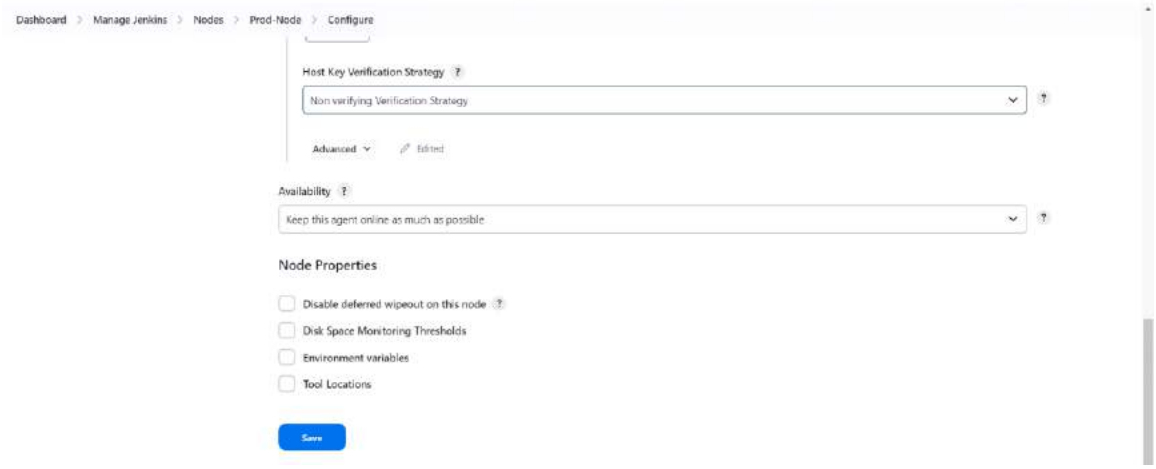

```
ubuntu@ip-172-31-9-199:~$ mkdir jenkins
ubuntu@ip-172-31-9-199:~$ cd jenkins
ubuntu@ip-172-31-9-199:~/jenkins$ pwd
/home/ubuntu/jenkins
ubuntu@ip-172-31-9-199:~/jenkins$ ^C
ubuntu@ip-172-31-9-199:~/jenkins$
```

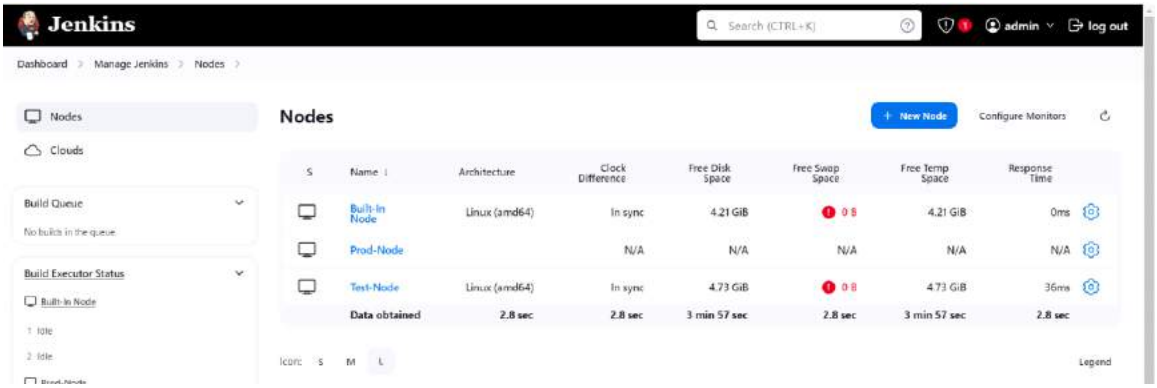
i-0273b0978375b0c16 (Prod)

PublicIPs: 54.183.112.79 PrivateIPs: 172.31.9.199

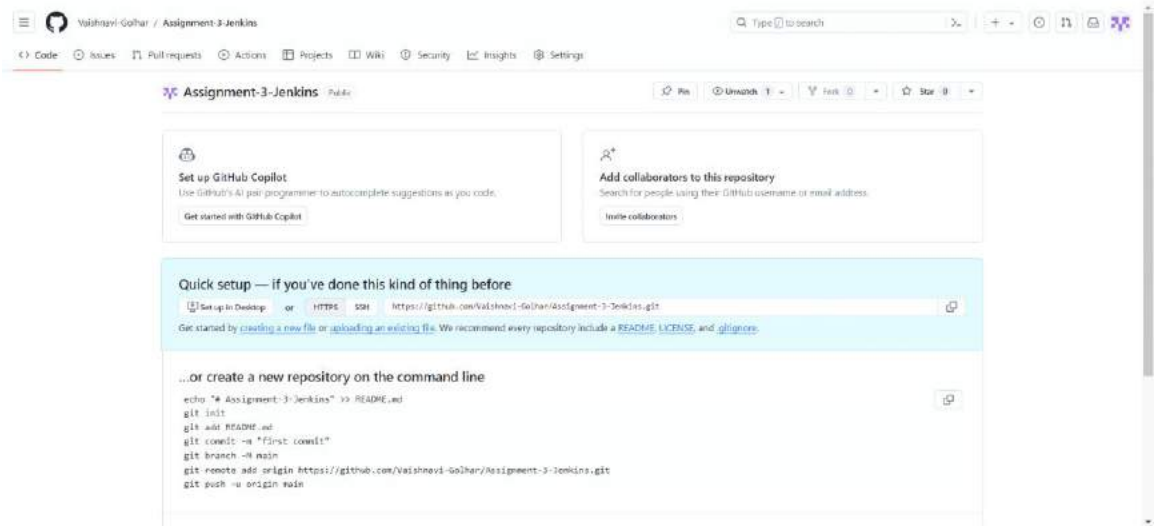


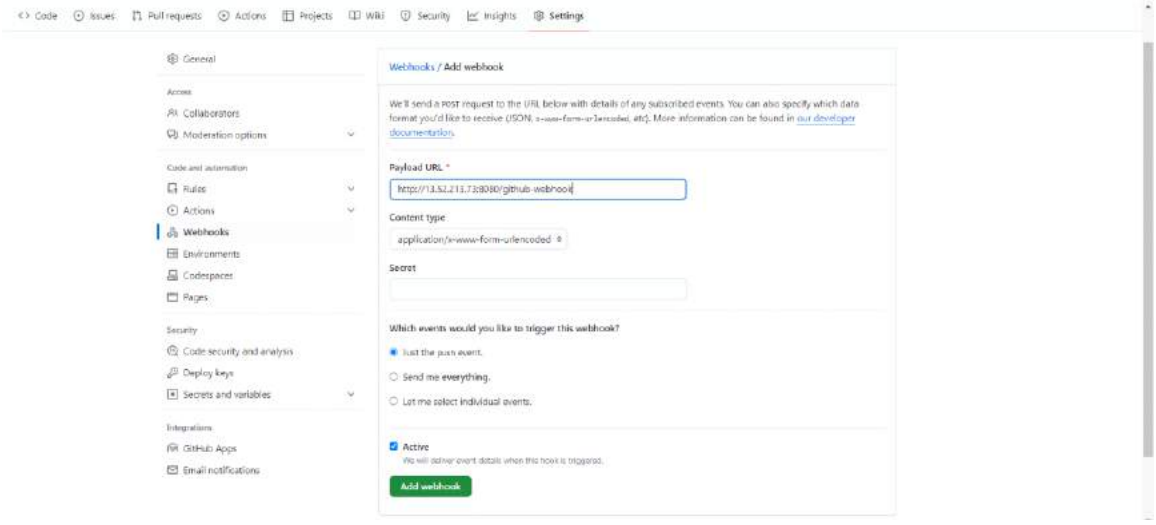

Dashboard > Manage Jenkins > Nodes > Prod-Node > Configure
Labels
prod
Usage
Use this node as much as possible
Launch method
Launch agents via SSH
Host
54.183.112.79
Credentials
ubuntu (ssh-key)
+ Add
Host Key Verification Strategy
Non verifying Verification Strategy

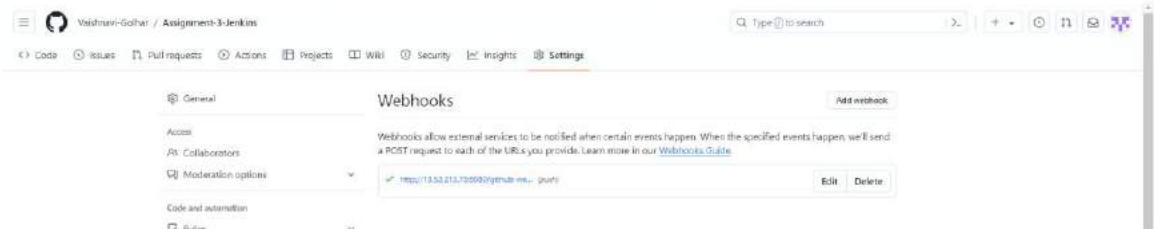

Dashboard > Manage Jenkins > Nodes > Prod-Node > Configure
Host Key Verification Strategy
Non verifying Verification Strategy
Advanced
Edited
Availability
Keep this agent online as much as possible
Node Properties
Disable deferred wipeout on this node
Disk Space Monitoring Thresholds
Environment variables
Tool Locations
Save

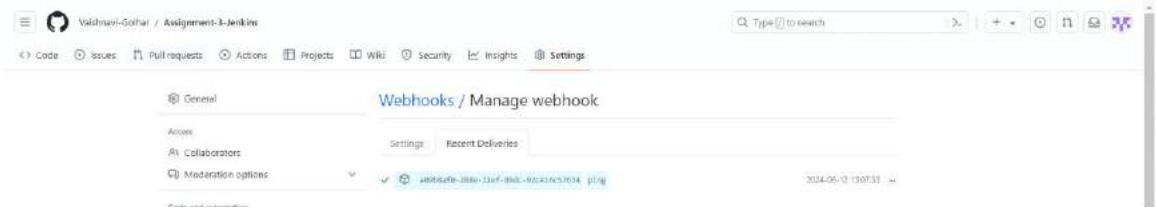

Jenkins
Search (CTRL+K)
admin
log out
Dashboard > Manage Jenkins > Nodes
Nodes
Clouds
Build Queue
No builds in the queue
Build Executor Status
Built-In Node
1 Idle
2 Idle
Nodes
+ New Node
Configure Monitors
S
Name
Architecture
Clock Difference
Free Disk Space
Free Swap Space
Free Temp Space
Response Time
Built-In Node
Linux (amd64)
In sync
4.21 GiB
0 B
4.21 GiB
0ms
Prod-Node
N/A
N/A
N/A
N/A
N/A
Test-Node
Linux (amd64)
In sync
4.73 GiB
0 B
4.73 GiB
36ms
Data obtained
2.8 sec
2.8 sec
3 min 57 sec
2.8 sec
3 min 57 sec
2.8 sec
Icon: S M L
Legend

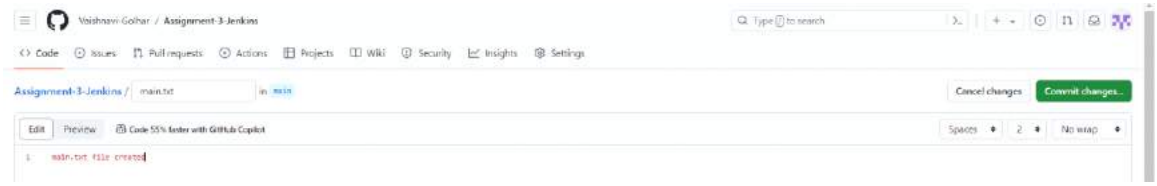
2. Create a Separate Git Hub Repository for this Assignment as “Assignment-3-Jenkins”

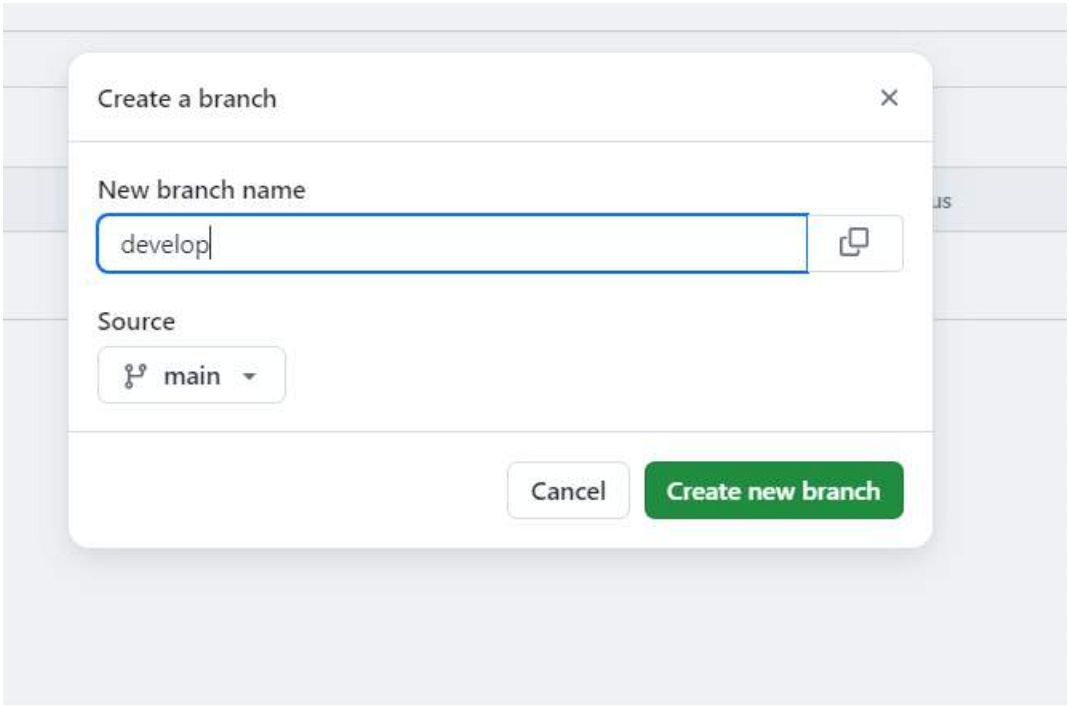


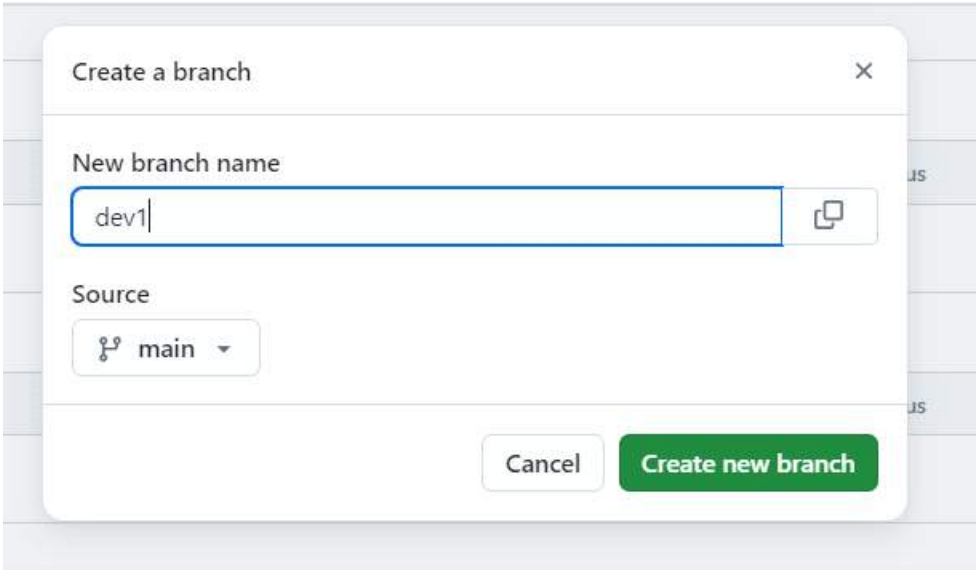


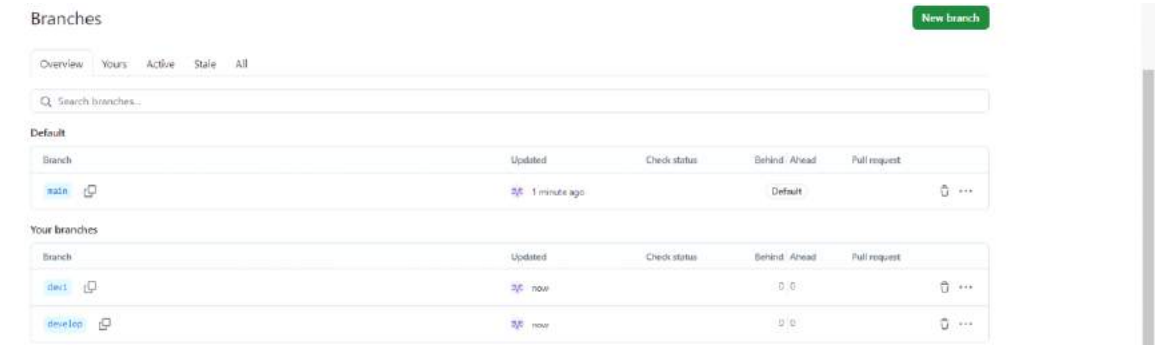


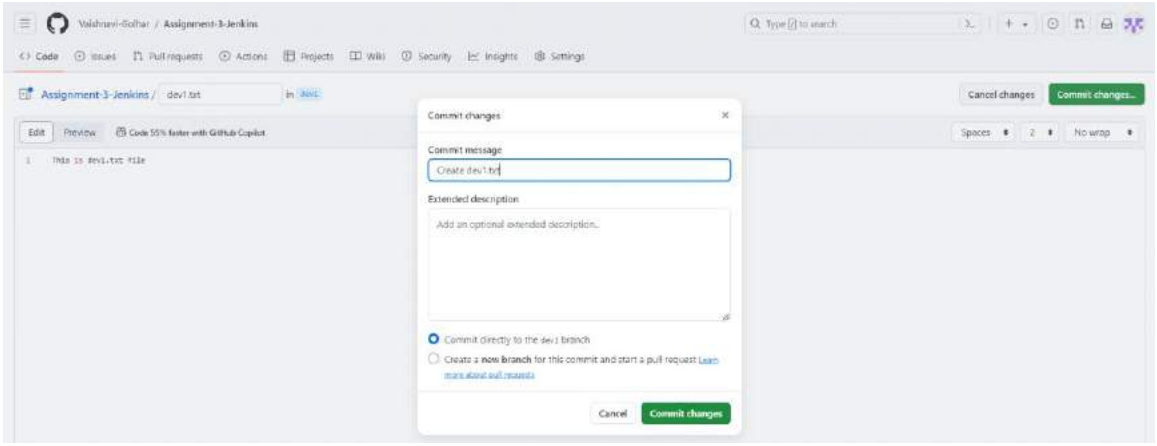

Vaishnavi-Golhar / Assignment-3-Jenkins
Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
General
Webhooks / Manage webhook
Collaborators
Moderation options
Settings
Recent Deliveries

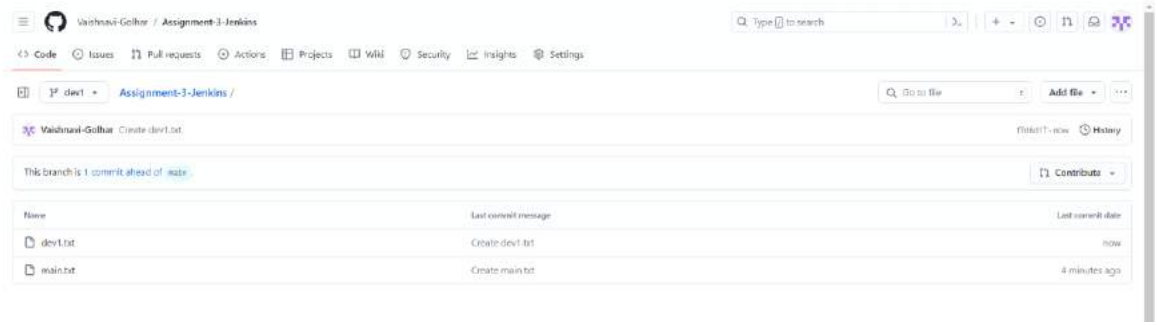

Vaishnavi-Golhar / Assignment-3-Jenkins
Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
Assignment-3-Jenkins / main.txt
Cancel changes
Commit changes...
Edit
Preview
Code 55% faster with GitHub Copilot
Spaces
No wrap
main.txt file created

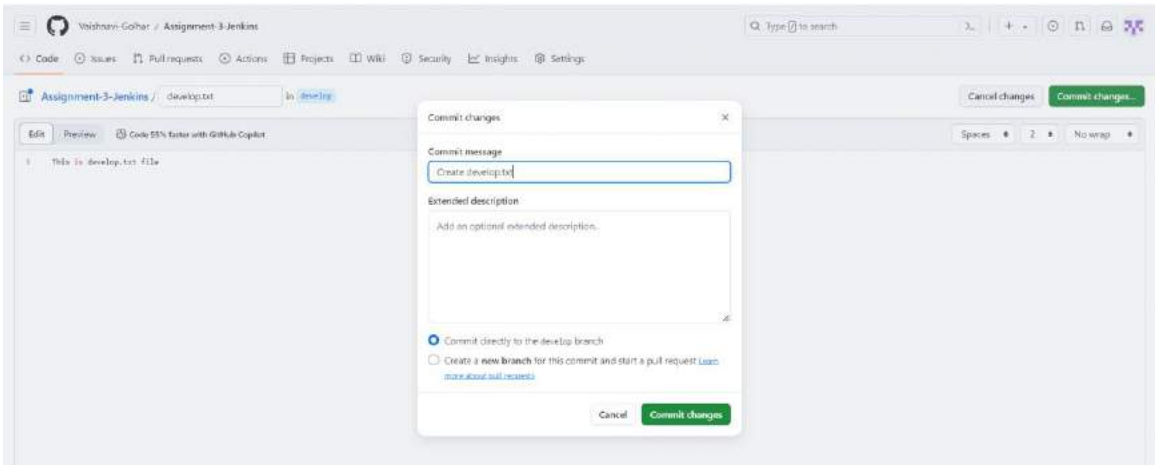

Create a branch
New branch name
develop
Source
main
Cancel
Create new branch

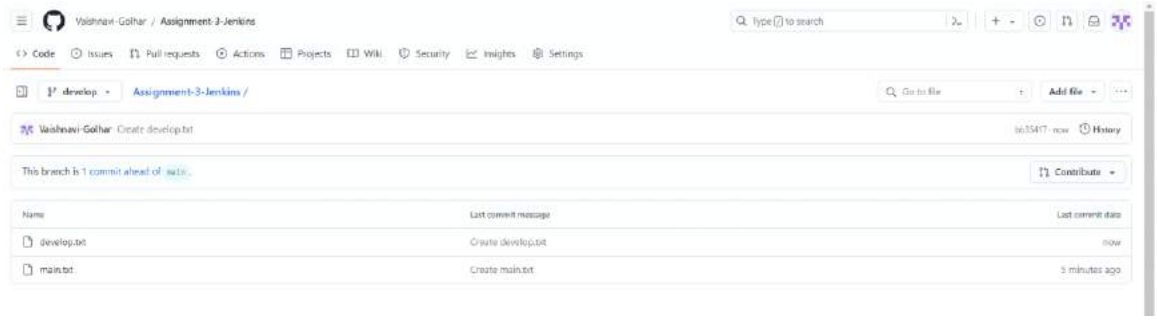

Create a branch
New branch name
dev1
Source
main
Cancel
Create new branch


Branches
New branch
Overview
Yours
Active
Stale
All
Search branches...
Default
Branch
Updated
Check status
Behind
Ahead
Pull request
main
1 minute ago
Default
Your branches
dev1
now
develop
now


Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
Assignment-3-Jenkins
dev1.txt
Edit
Preview
Cancel changes
Commit changes...
Commit changes
Commit message
Create dev1.txt
Extended description
Add an optional extended description...
Commit directly to the dev1 branch
Create a new branch for this commit and start a pull request
Cancel
Commit changes

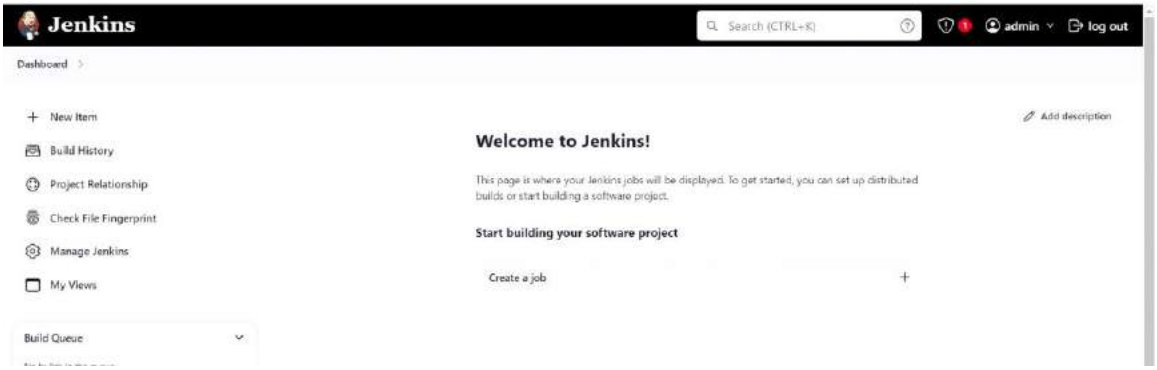


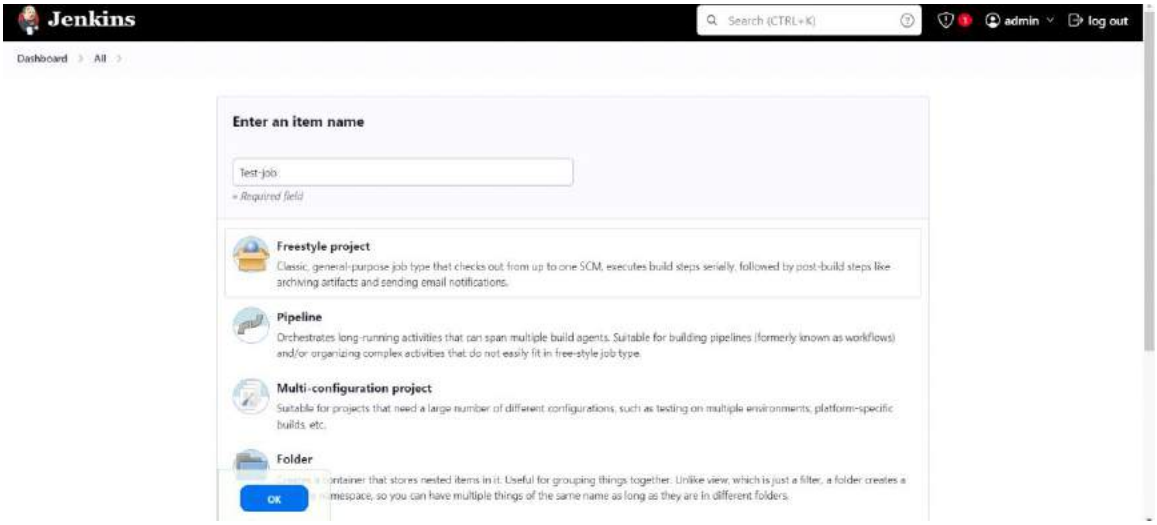


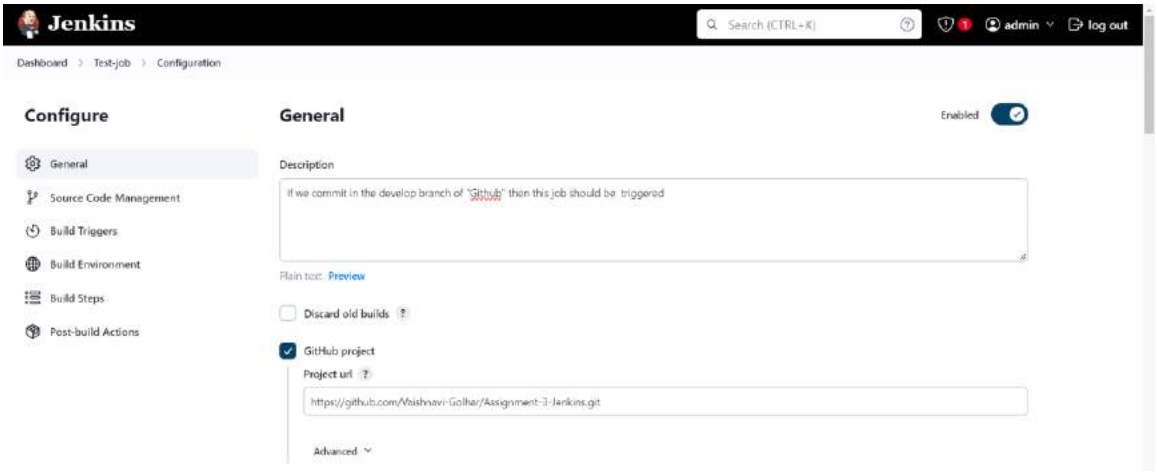


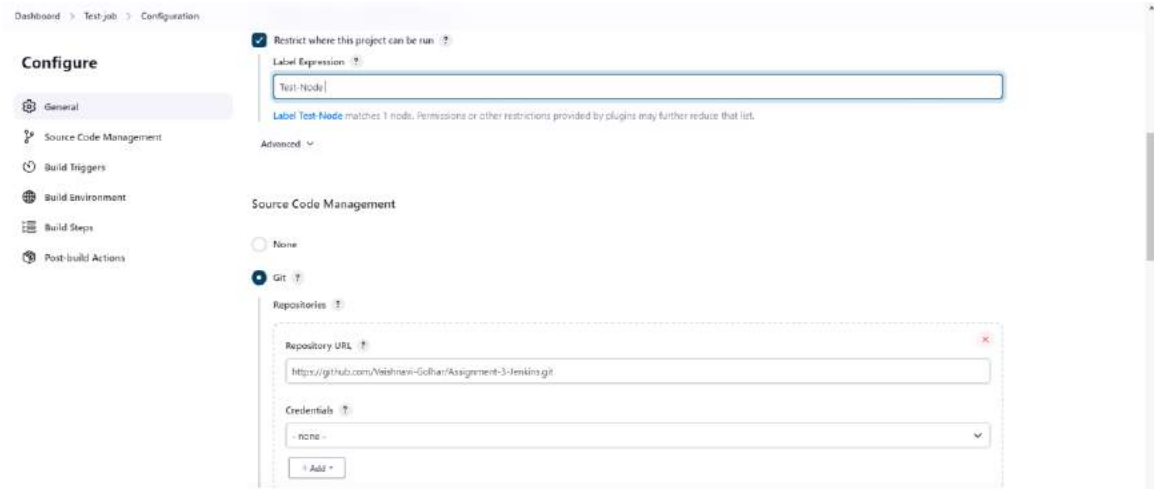
Problem (2) Solution: Once a push is made to “develop” a branch in Git, trigger job “test”. This will copy Git files to test node

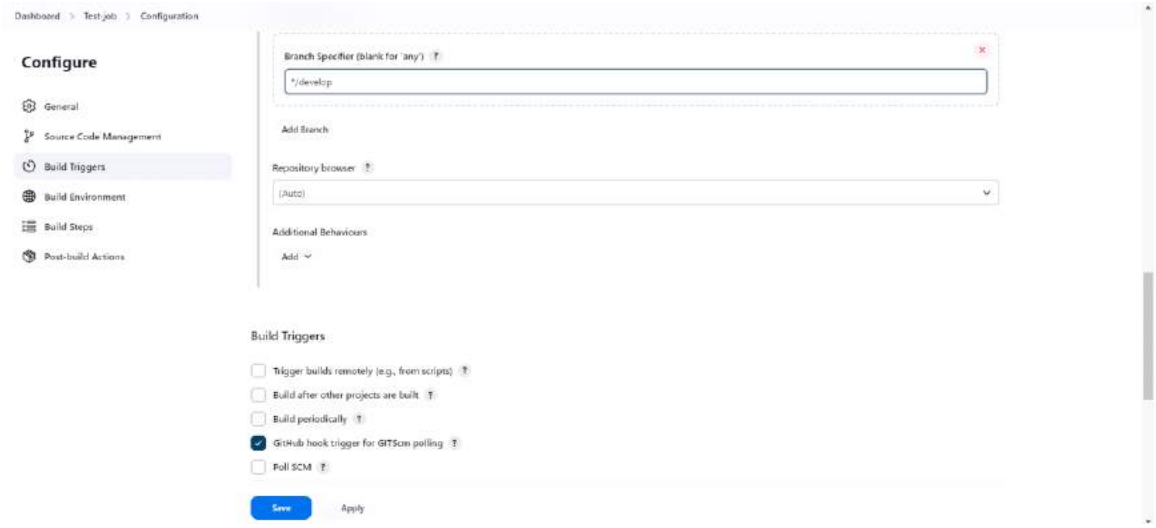
A. Create a Test Job & Put “develop” Branch Path Here


Jenkins
Search (CTRL+K)
admin
log out
Dashboard
New Item
Build History
Project Relationship
Check File Fingerprint
Manage Jenkins
My Views
Build Queue
Add description
Welcome to Jenkins!
This page is where your Jenkins jobs will be displayed. To get started, you can set up distributed builds or start building a software project.
Start building your software project
Create a job

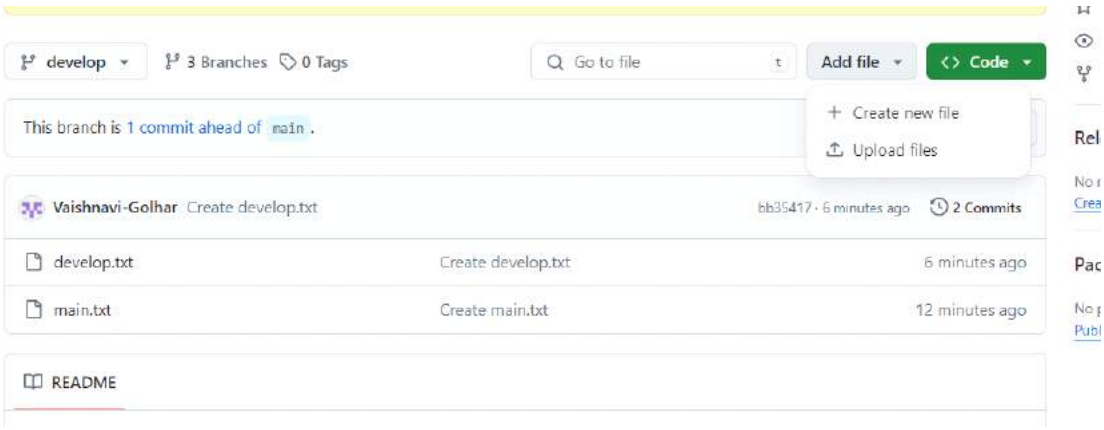

Jenkins
Search (CTRL+K)
admin
log out
Dashboard
All
Enter an item name
Test-job
» Required field
Freestyle project
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.
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
OK

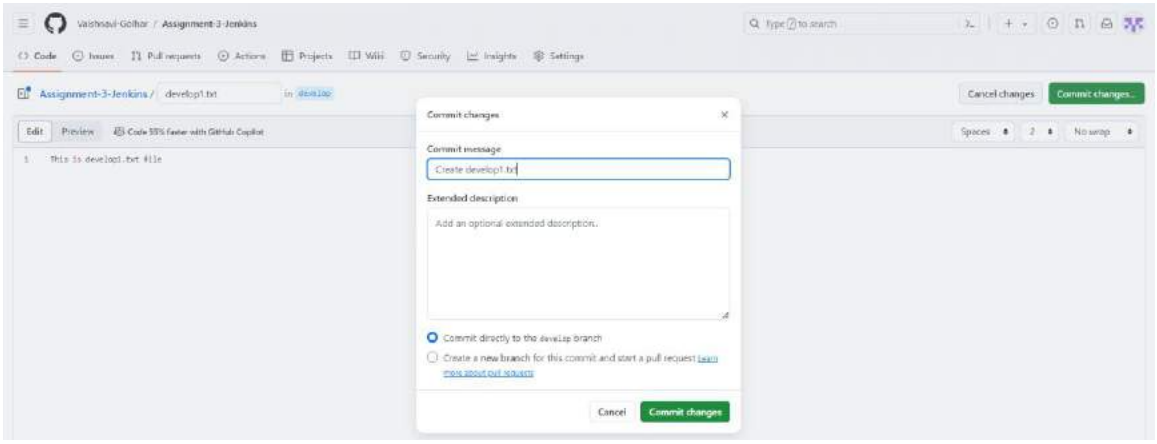

Jenkins
Search (CTRL+K)
admin
log out
Dashboard
Test-job
Configuration
Configure
General
Source Code Management
Build Triggers
Build Environment
Build Steps
Post-build Actions
General
Enabled
Description
If we commit in the develop branch of "Github" then this job should be triggered
Plain text Preview
Discard old builds
GitHub project
Project url
https://github.com/Vaishnavi-Golhar/Assignment-3-Jenkins.git
Advanced

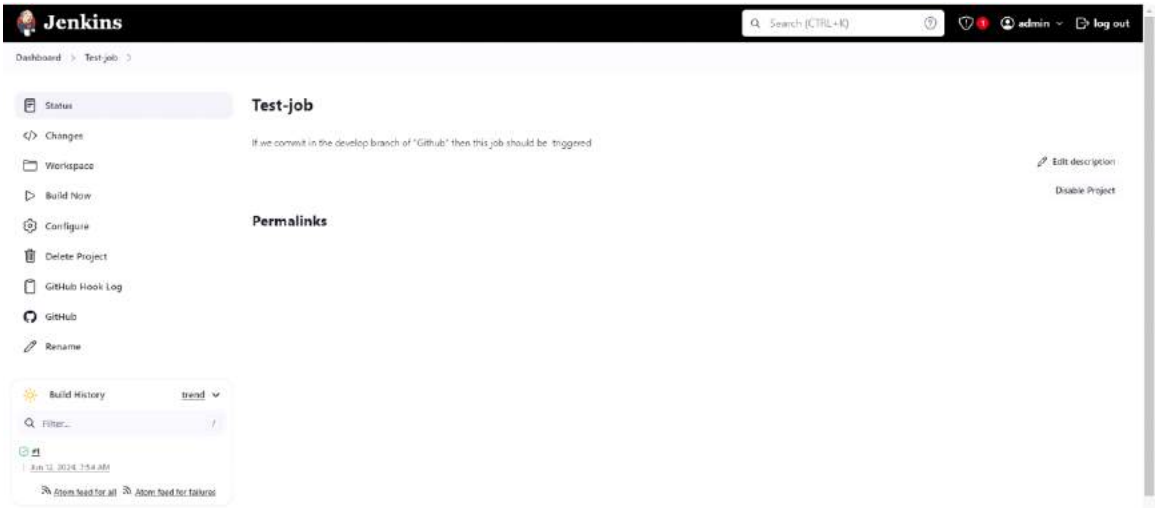


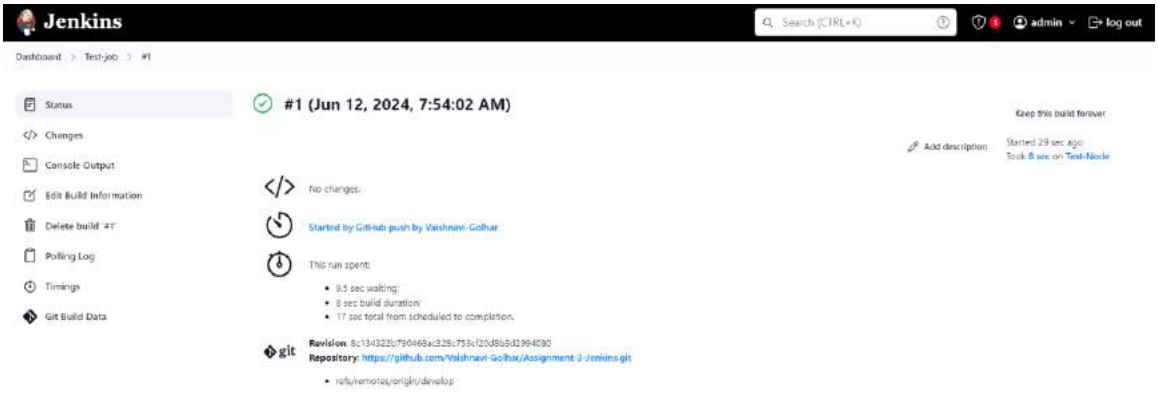


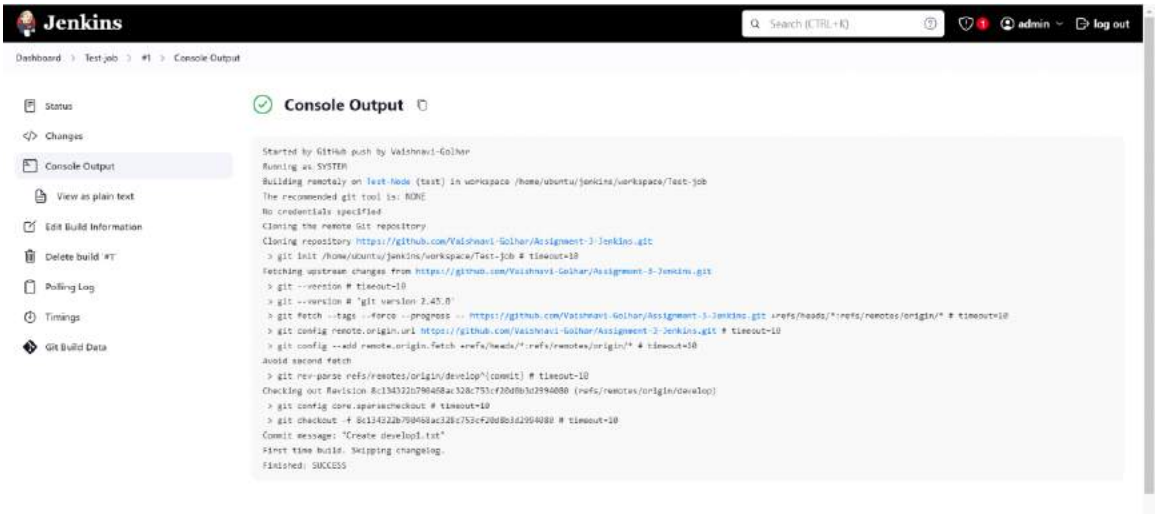
B. Commit in the “Develop” Branch & “Test” Job Should Be Automatically Triggered


develop
3 Branches
0 Tags
Go to file
t
Add file
Code
This branch is 1 commit ahead of main .
Create new file
Upload files
Vaishnavi-Golhar Create develop.txt
bb35417 · 6 minutes ago
2 Commits
develop.txt
Create develop.txt
6 minutes ago
main.txt
Create main.txt
12 minutes ago
README


Vaishnavi-Golhar / Assignment-3-Jenkins
Assignment-3-Jenkins / develop1.txt
Cancel changes
Commit changes...
Commit changes
Commit message
Create develop1.txt
Extended description
Add an optional extended description...
Commit directly to the develop branch
Create a new branch for this commit and start a pull request
Cancel
Commit changes


Jenkins
admin
log out
Dashboard > Test-job >
Status
Changes
Workspace
Build Now
Configure
Delete Project
GitHub Hook Log
GitHub
Rename
Test-job
If we commit in the develop branch of "Github" then this job should be triggered
Edit description
Disable Project
Permalinks
Build History
trend





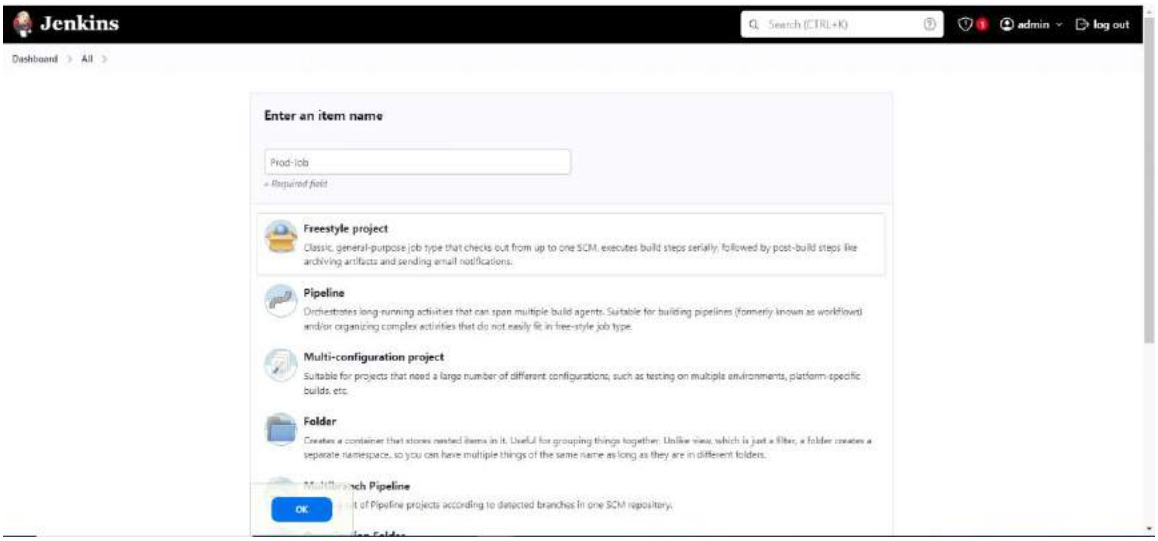

```
ubuntu@ip-172-31-4-129:~/jenkins$ pwd
/home/ubuntu/jenkins
ubuntu@ip-172-31-4-129:~/jenkins$ ls
remoting  remoting.jar  workspace
ubuntu@ip-172-31-4-129:~/jenkins$ cd workspace
ubuntu@ip-172-31-4-129:~/jenkins/workspace$ ls
Test-job
ubuntu@ip-172-31-4-129:~/jenkins/workspace$ ls
Test-job
ubuntu@ip-172-31-4-129:~/jenkins/workspace$ ls Test-job
develop.txt  develop1.txt  main.txt
ubuntu@ip-172-31-4-129:~/jenkins/workspace$
```

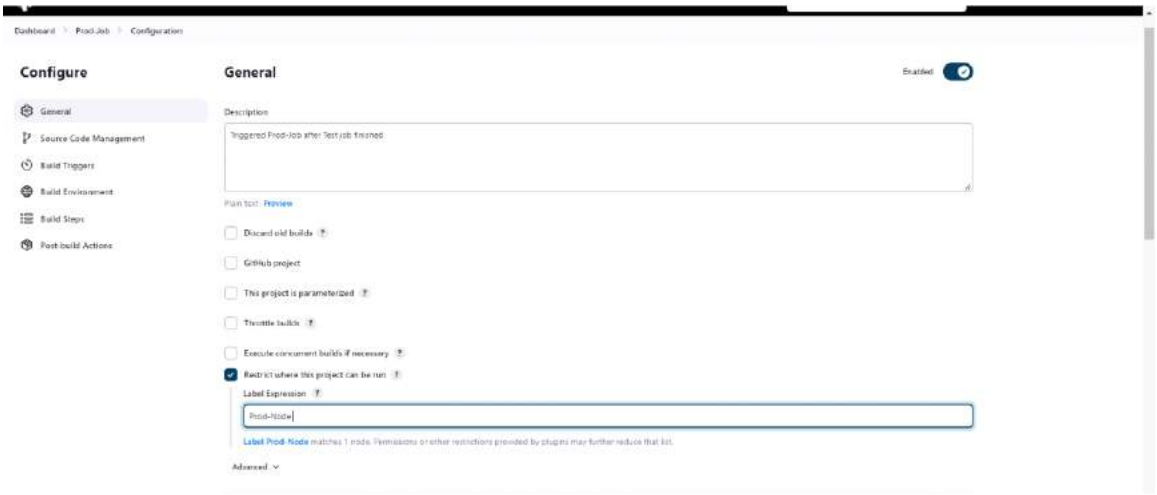
i-0d4f4e00c17398830 (Test)

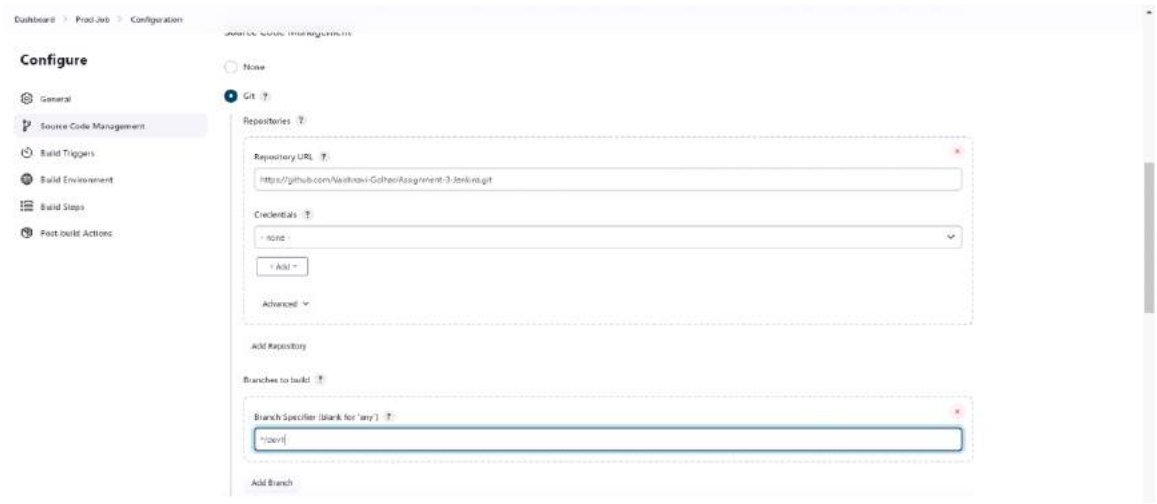
PublicIPs: 52.53.232.179 PrivateIPs: 172.31.4.129

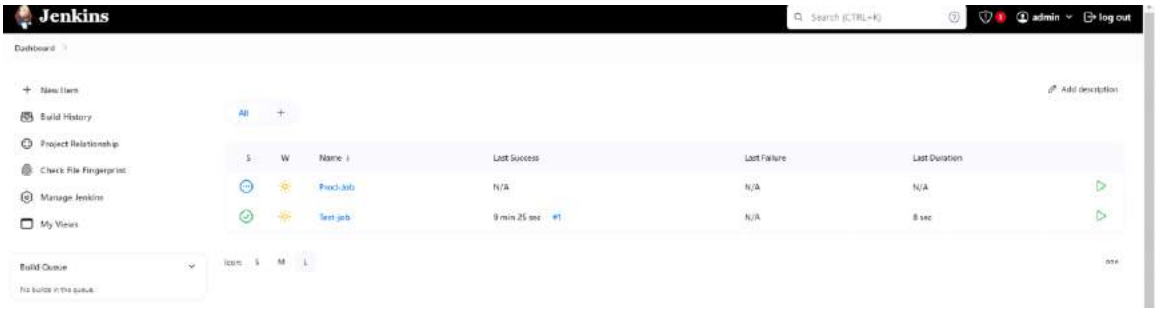
Problem (3) Solution: If the test job is successful, then the prod job should be triggered

A. Create a “Prod” Job & Put the “dev1” Branch Here

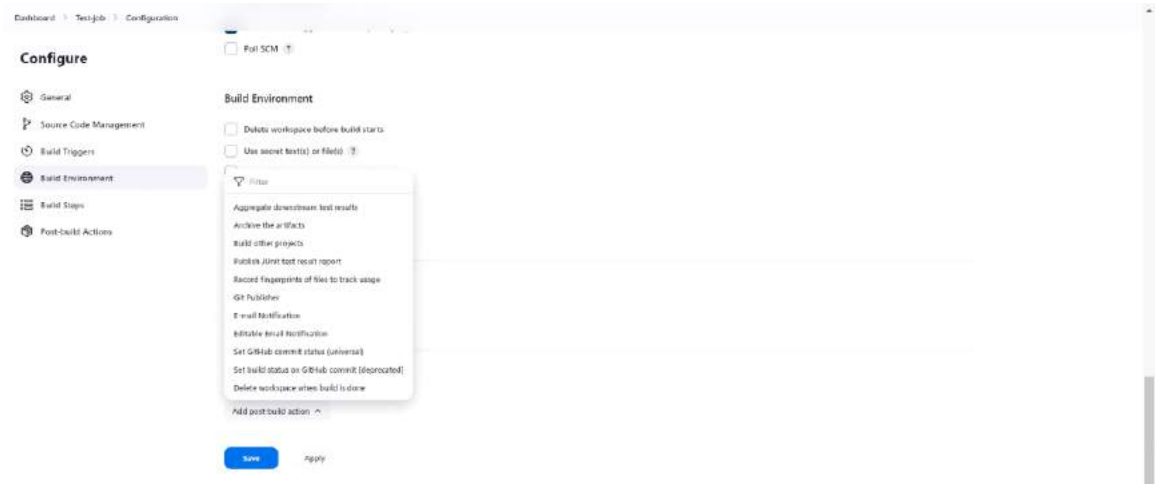


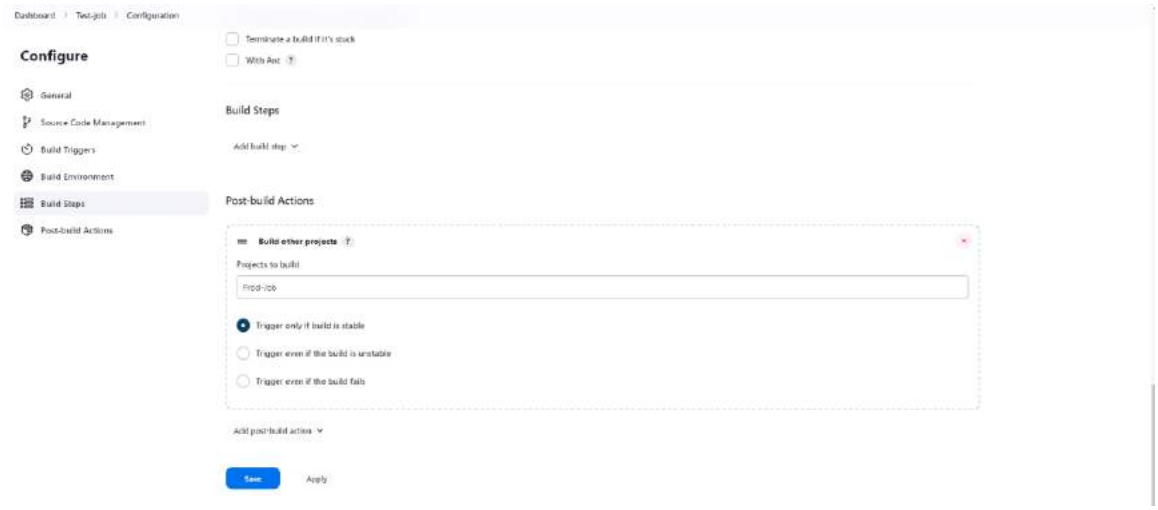


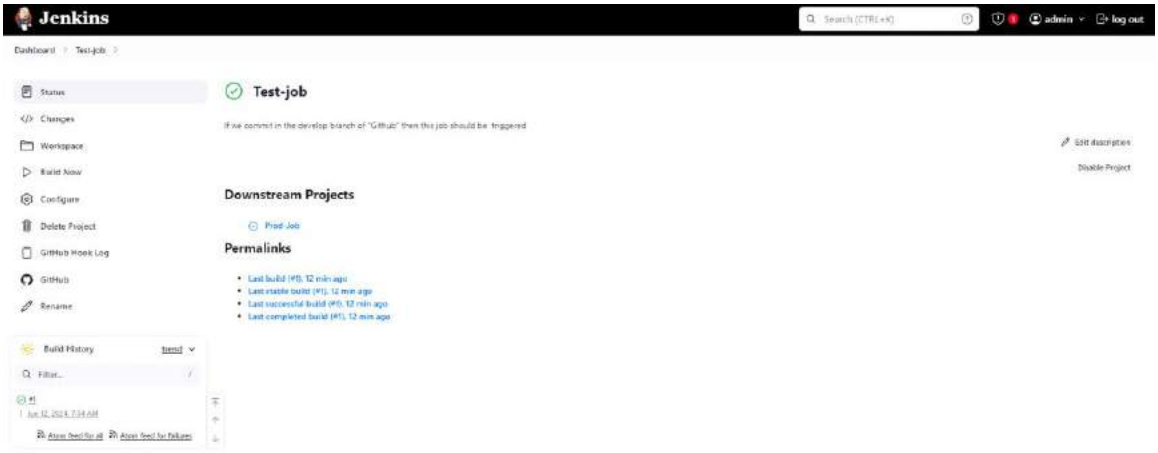




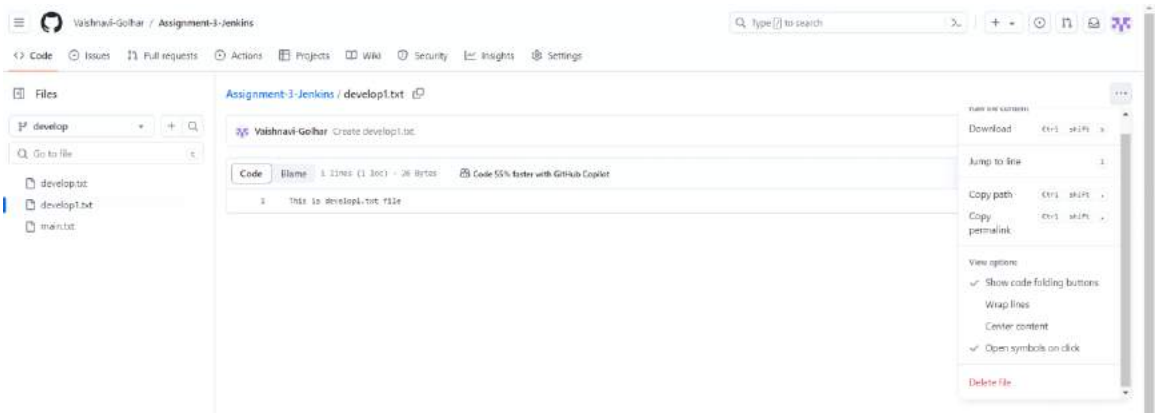
B. Now, Add the “Prod” Job to “Test” for Automatically Triggering

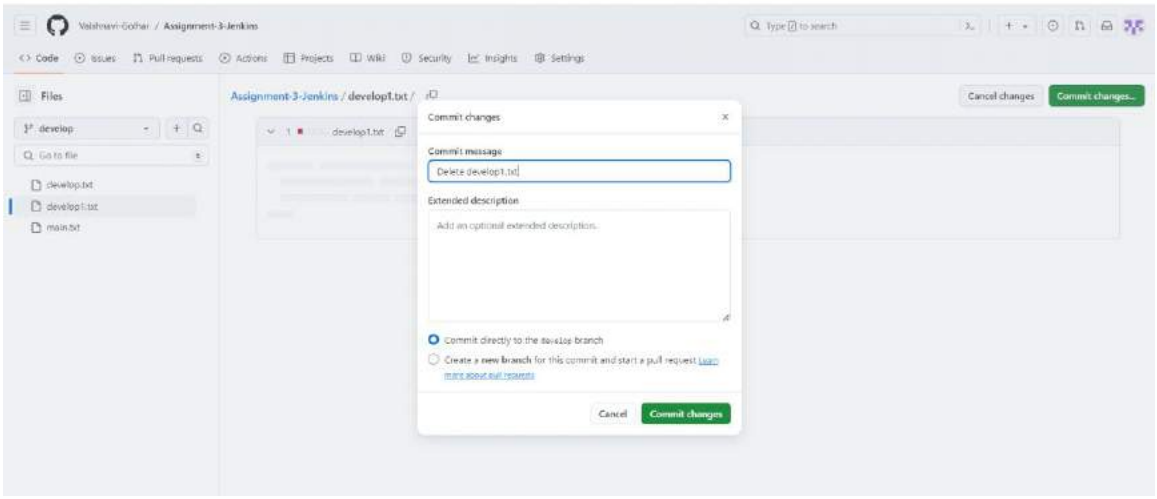


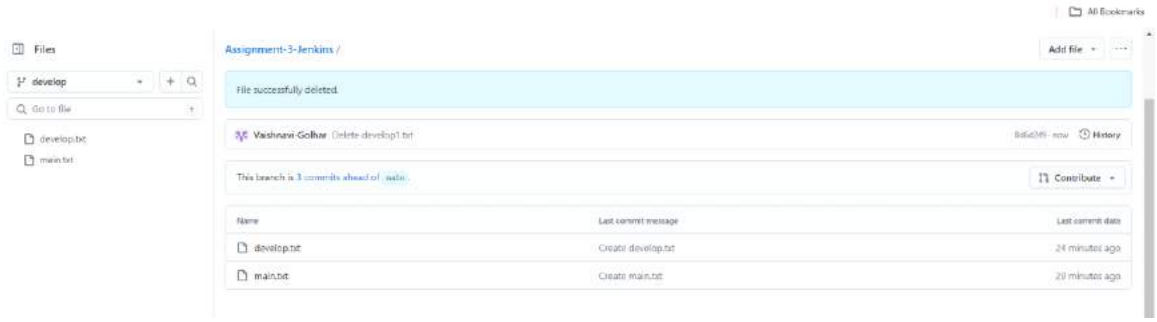


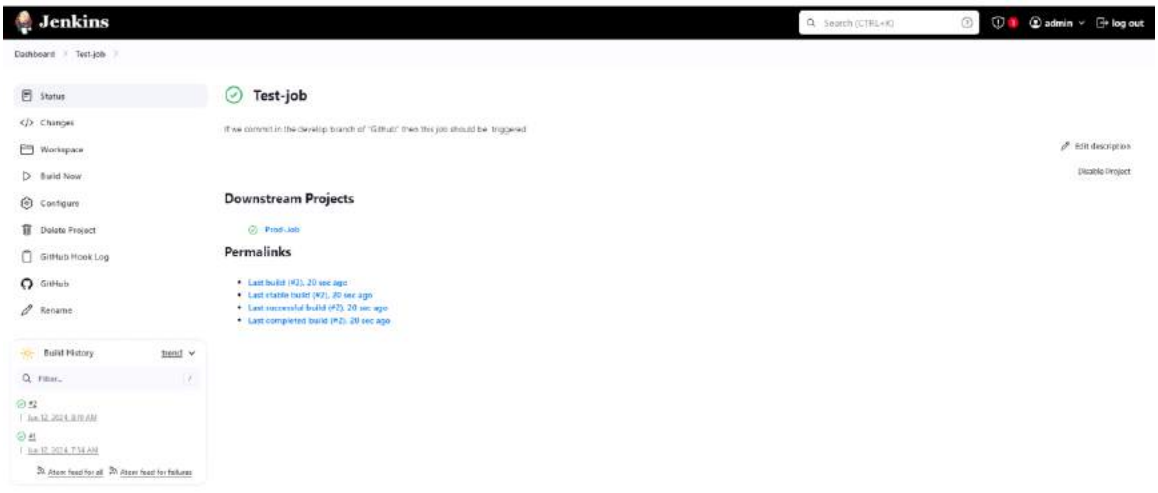


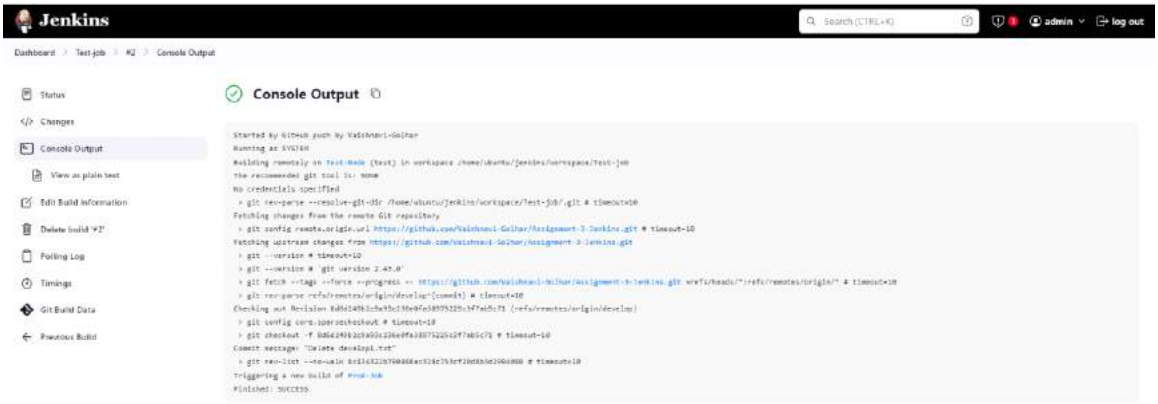
C. Now, Delete the “develop1.txt” file from GitHub to Trigger the Prod-Job via “Test-Job”.

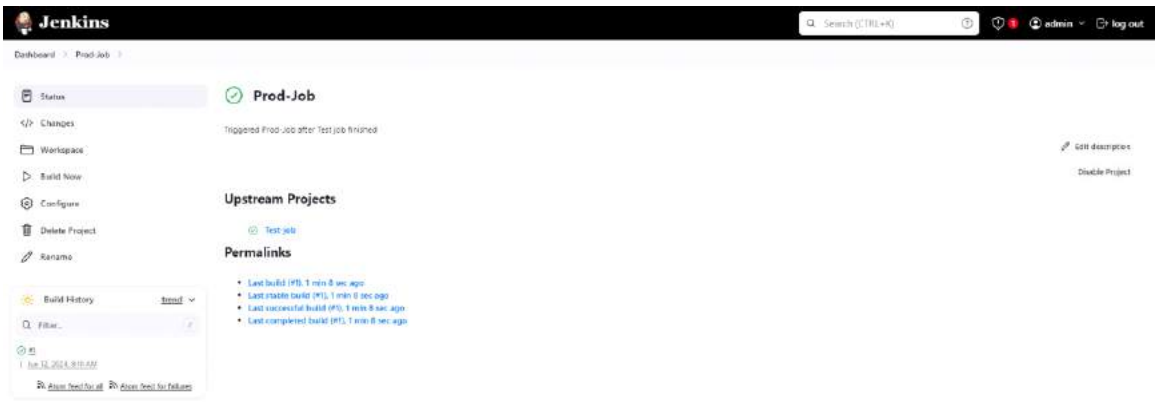


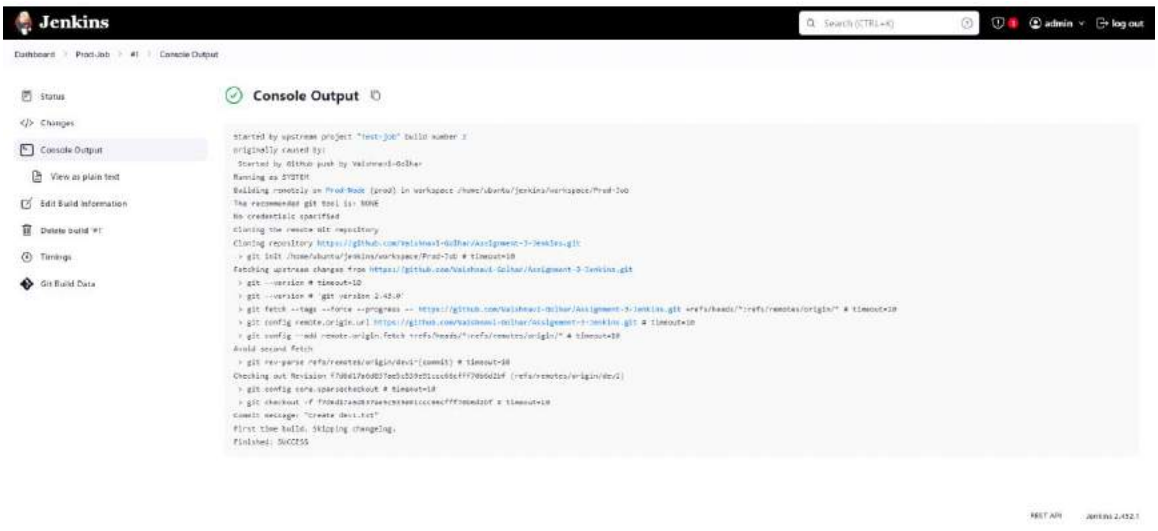

Vaishnavi-Golhar / Assignment-3-Jenkins
Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
Files
develop
develop.txt
develop1.txt
main.txt
Assignment-3-Jenkins / develop1.txt /
Cancel changes
Commit changes...
Commit changes
Commit message
Delete develop1.txt
Extended description
Add an optional extended description...
Commit directly to the develop branch
Create a new branch for this commit and start a pull request
Cancel
Commit changes


Files
develop
develop.txt
main.txt
Assignment-3-Jenkins /
Add file
File successfully deleted.
Vaishnavi-Golhar Delete develop1.txt
History
Contribute
Name
Last commit message
Last commit date
develop.txt
Create develop.txt
24 minutes ago
main.txt
Create main.txt
20 minutes ago

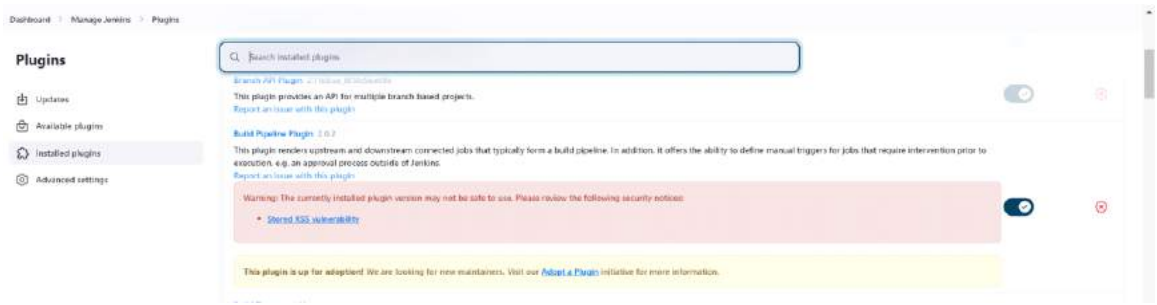

Jenkins
admin
log out
Dashboard
Test-job
Status
Changes
Workspace
Build Now
Configure
Delete Project
GitHub Hook Log
GitHub
Rename
Test-job
Edit description
Disable Project
Downstream Projects
Prod-job
Permalinks
Build History
trend

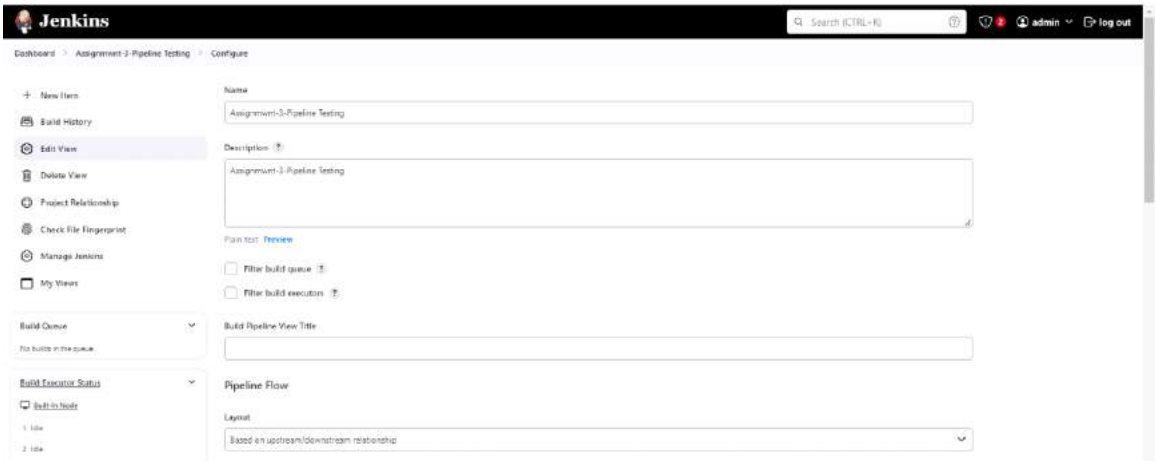




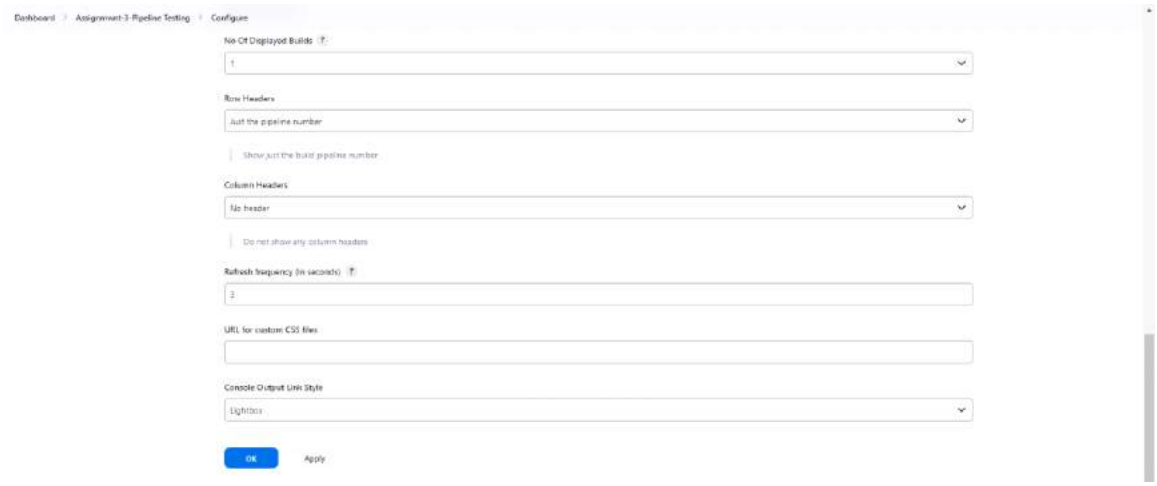


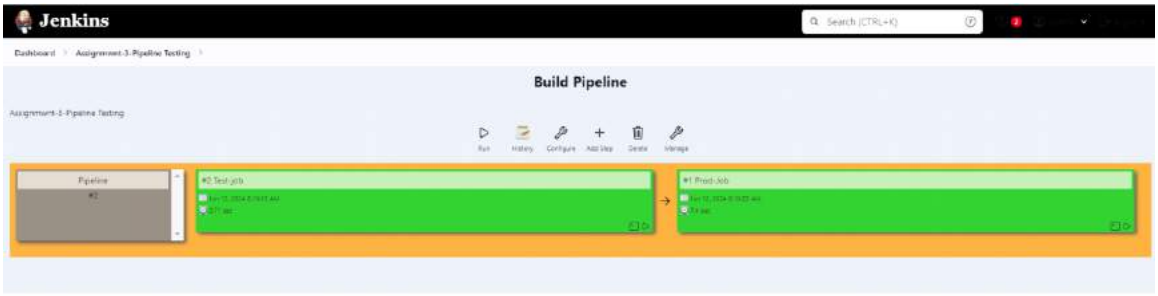
Problem (1) Solution: Create a Pipeline in Jenkins

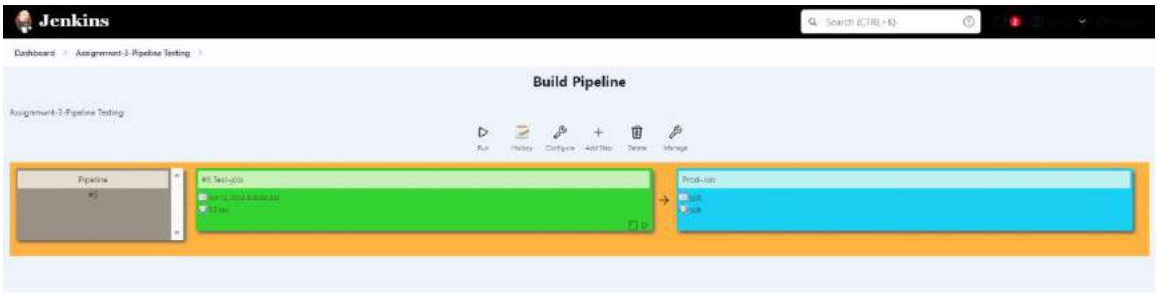

Dashboard > Manage Jenkins > Plugins
Plugins
Updates
Available plugins
Installed plugins
Advanced settings
Search installed plugins
This plugin provides an API for multiple branch based projects.
Report an issue with this plugin
Build Pipeline Plugin 1.6.2
This plugin renders upstream and downstream connected jobs that typically form a build pipeline. In addition, it offers the ability to define manual triggers for jobs that require intervention prior to execution, e.g. an approval process outside of Jenkins.
Report an issue with this plugin
Warning: The currently installed plugin version may not be safe to use. Please review the following security notices:
Stored XSS vulnerability
This plugin is up for adoption! We are looking for new maintainers. Visit our Adopt a Plugin initiative for more information.

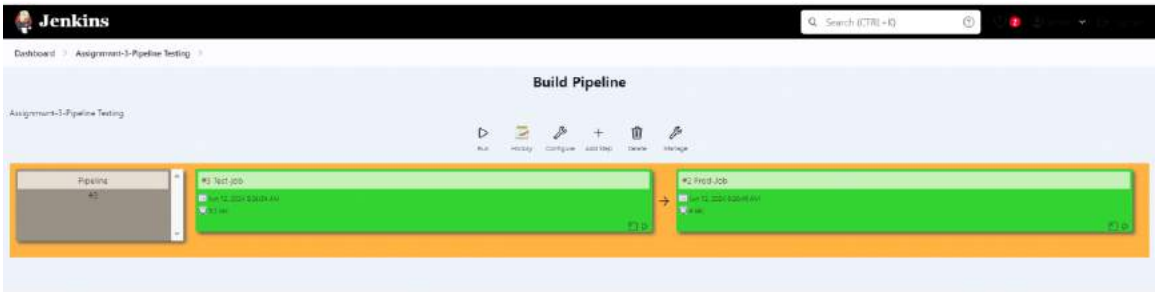

Jenkins
Search (CTRL+K)
admin
log out
Dashboard > Assignment-3-Pipeline Testing > Configure
New Item
Build History
Edit View
Delete View
Project Relationship
Check File Fingerprint
Manage Jenkins
My Views
Build Queue
No builds in the queue.
Build Executor Status
Built-In Node
1 Idle
2 Idle
Name
Assignment-3-Pipeline Testing
Description
Assignment-3-Pipeline Testing
Plain text Preview
Filter build queue
Filter build executors
Build Pipeline View Title
Pipeline Flow
Layout
Based on upstream/downstream relationship

All Bookmarks
Dashboard > Assignment-3-Pipeline Testing > Configure
No
Always allow manual trigger on pipeline steps
Yes
No
Display Options
No Of Displayed Builds
1
Row Headers
Just the pipeline number
Show just the build pipeline number
Column Headers
No header
Do not show any column headers
Refresh frequency (in seconds)
3


Dashboard
Assignment-3-Pipeline Testing
Configure
No Of Displayed Builds
Row Headers
Just the pipeline number
Show just the build pipeline number
Column Headers
No header
Do not show any column headers
Refresh frequency (in seconds)
URL for custom CSS files
Console Output Link Style
Lightbox
OK
Apply


Jenkins
Search (CTRL+K)
Dashboard
Assignment-3-Pipeline Testing
Build Pipeline
Assignment-3-Pipeline Testing
Run
History
Configure
Add Step
Delete
Manage
Pipeline
#2
#2 Test-job
#1 Prod-Job


Jenkins
Search (CTRL+K)
Dashboard
Assignment-3-Pipeline Testing
Build Pipeline
Assignment-3-Pipeline Testing
Run
History
Configure
Add Step
Delete
Manage
Pipeline
#3
#3 Test-job
Prod-Job


Jenkins
Search (CTRL+K)
Dashboard
Assignment-3-Pipeline Testing
Build Pipeline
Assignment-3-Pipeline Testing
Run
History
Configure
Add Step
Delete
Manage
Pipeline
#3
#3 Test-job
#2 Prod-Job