

Assignment 2 - Jenkins (Creating a DevOps pipeline, CI/CD tool)

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Task 1:

Screenshot of the running Docker Container after installing Jenkins

```
zsh - sudo docker run -p 8080:8080 -p 5000:5000 -it jenkins/PES2UG20CS206
2023-02-13 04:02:06.871+0000 [id=56] INFO jenkins.InitReactorRunner$1#onAttained: System config loaded
2023-02-13 04:02:06.872+0000 [id=68] INFO jenkins.InitReactorRunner$1#onAttained: System config adapted
2023-02-13 04:02:06.873+0000 [id=43] INFO jenkins.InitReactorRunner$1#onAttained: Loaded all jobs
2023-02-13 04:02:06.875+0000 [id=53] INFO jenkins.InitReactorRunner$1#onAttained: Configuration for all jobs upda
ated
2023-02-13 04:02:06.905+0000 [id=84] INFO hudson.util.Retrier#start: Attempt #1 to do the action check updates s
erver
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.codehaus.groovy.vmplugin.v7.Java$7$1 (file:/var/jenkins_home/war/WEB-INF/lib/
groovy-all-2.4.21.jar) to constructor java.lang.invoke.MethodHandles$Lookup(java.lang.Class,int)
WARNING: Please consider reporting this to the maintainers of org.codehaus.groovy.vmplugin.v7.Java$7$1
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release
2023-02-13 04:02:07.395+0000 [id=52] INFO jenkins.install.SetUpWizard#init:
*****
*****
*****
Jenkins initial setup is required. An admin user has been created and a password generated.
Please use the following password to proceed to installation:
59cd3378d9984f8d9a231ae0a2911ce9
This may also be found at: /var/jenkins_home/secrets/initialAdminPassword
*****
*****
*****
```

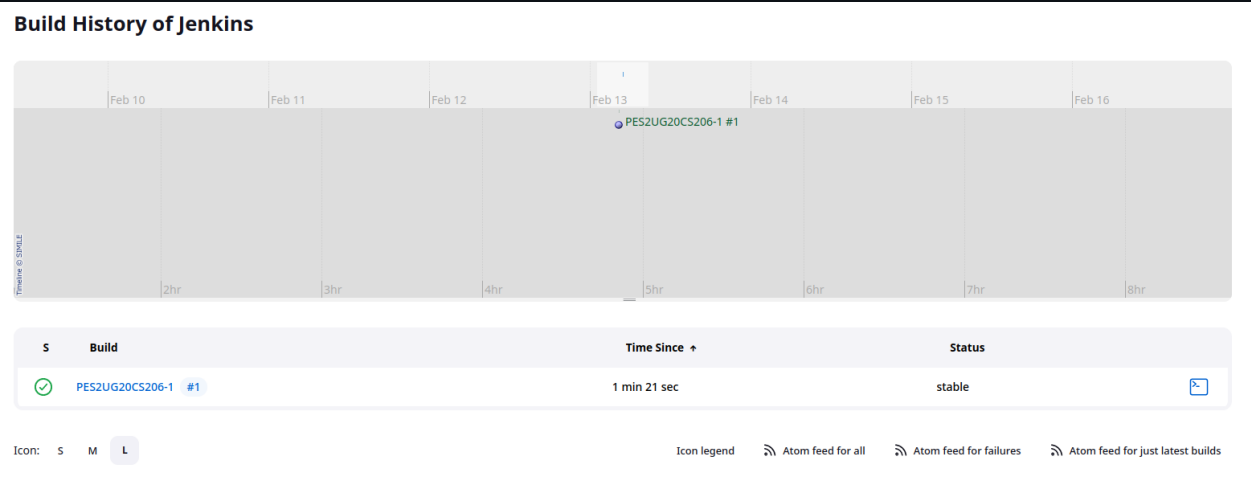
Task 2:

Picture showing the console output after the build is successful

✓ Console Output

```
Started by user PES2UG20CS206 Mukund Deepak
Running as SYSTEM
Building in workspace /var/jenkins_home/workspace/PES2UG20CS206-1
The recommended git tool is: NONE
No credentials specified
Cloning the remote Git repository
Cloning repository https://github.com/mukunddeepak/PES2UG20CS206_Jenkins
> git init /var/jenkins_home/workspace/PES2UG20CS206-1 # timeout=10
Fetching upstream changes from https://github.com/mukunddeepak/PES2UG20CS206_Jenkins
> git --version # timeout=10
> git --version # 'git version 2.30.2'
> git fetch --tags --force --progress -- https://github.com/mukunddeepak/PES2UG20CS206_Jenkins +refs/heads/*:refs/remotes/origin/* # timeout=10
> git config remote.origin.url https://github.com/mukunddeepak/PES2UG20CS206_Jenkins # timeout=10
> git config --add remote.origin.fetch +refs/heads/*:refs/remotes/origin/* # timeout=10
Avoid second fetch
Seen branch in repository origin/main
Seen 1 remote branch
> git show-ref --tags -d # timeout=10
Checking out Revision 11ca525b4406fc16d69bc88f8680e3c6d1dd54a2 (origin/main)
> git config core.sparsecheckout # timeout=10
> git checkout -f 11ca525b4406fc16d69bc88f8680e3c6d1dd54a2 # timeout=10
Commit message: "First Commit lezzgo"
First time build. Skipping changelog.
[PES2UG20CS206-1] $ /bin/sh -xe /tmp/jenkins8381256521653060401.sh
+ make -C main
make: Entering directory '/var/jenkins_home/workspace/PES2UG20CS206-1/main'
g++ hello.cpp -o hello_exec
make: Leaving directory '/var/jenkins_home/workspace/PES2UG20CS206-1/main'
Finished: SUCCESS
```

Picture showing the Stable state of the task in Build History of Jenkins



Task 3:

Console output of second job

Dashboard > PES2UG20CS206-2 > #2

Status

Changes

Console Output

View as plain text

Edit Build Information

Delete build #2

Previous Build

✓ Console Output

Started by upstream project "PES2UG20CS206-1" build number 3 originally caused by:
Started by user mukund deepak
Running as SYSTEM
Building in workspace /var/jenkins_home/workspace/PES2UG20CS206-2
[PES2UG20CS206-2] \$ /bin/sh -xe /tmp/jenkins7252776618139196204.sh
+ /var/jenkins_home/workspace/PES2UG20CS206-1/main/hello_exec
Hello, World
Hello, Jenkins
I have successfully built and run
Finished: SUCCESS

Status page of first job

Dashboard > All > PES2UG20CS206-1 >

Status

Changes

Workspace

Build Now

Configure

Delete Project

Git Polling Log

GitHub

Rename

Project PES2UG20CS206-1

Add description

Disable Project

Downstream Projects

PES2UG20CS206-2

Permalinks

Last build (#3), 2 min 7 sec ago

Last stable build (#3), 2 min 7 sec ago

Last successful build (#3), 2 min 7 sec ago

Last completed build (#3), 2 min 7 sec ago

Build History

trend

Filter builds...

#2

Feb 14, 2023, 4:09 PM

#2

Feb 14, 2023, 4:08 PM

#1

Feb 14, 2023, 4:03 PM

Atom feed for all

Atom feed for failures

Build History of Jenkins

Dashboard > All >

New Item

People

Build History

Manage Jenkins

My Views

Build Queue

No builds in the queue.

Build Executor Status

1 Idle

2 Idle

Build History of Jenkins

Feb 11

Feb 12

Feb 13

Feb 14

Feb 15

Feb 16

Feb 17

Feb 18

PES2UG20CS206-2 #2

PES2UG20CS206-1 #3

PES2UG20CS206-2 #1

PES2UG20CS206-1 #2

PES2UG20CS206-1 #1

13hr

14hr

15hr

16hr

17hr

18hr

19hr

| S | Build | Time Since + | Status |
|---|--------------------|--------------|----------------|
| 🟢 | PES2UG20CS206-2 #2 | 2 min 48 sec | back to normal |
| 🟢 | PES2UG20CS206-1 #3 | 2 min 56 sec | stable |

Jenkins Dashboard

Dashboard >

New Item

People

Build History

Manage Jenkins

My Views

Build Queue

No builds in the queue.

Build Executor Status

1 Idle

2 Idle

All +

| S | W | Name + | Last Success | Last Failure | Last Duration |
|---|----|-----------------|-----------------|-----------------|---------------|
| 🟢 | ☀️ | PES2UG20CS206-1 | 3 min 22 sec #3 | N/A | 0.94 sec |
| 🟢 | ☁️ | PES2UG20CS206-2 | 3 min 14 sec #2 | 4 min 34 sec #1 | 11 ms |

Icon: S W M L

Icon legend

Atom feed for all

Atom feed for failures

Atom feed for just latest builds

Task 4:

Webhook added to your GitHub repository:

General

Access

Collaborators

Moderation options

Code and automation

Branches

Tags

Actions

Webhooks

Webhooks

Add webhook

Webhooks allow external services to be notified when certain events happen. When the specified events happen, we'll send a POST request to each of the URLs you provide. Learn more in our [Webhooks Guide](#).

https://df9c-1-6-180-187.in.ngrok.... (push)

EditDelete

Console Output of second job displaying the change made in hello.cpp file.



Console Output

```
Started by upstream project "PES2UG20CS206-1" build number 3
originally caused by:
  Started by an SCM change
Running as SYSTEM
Building in workspace /var/jenkins_home/workspace/PES2UG20CS206-2
[PES2UG20CS206-2] $ /bin/sh -xe /tmp/jenkins9780952252385736553.sh
+ /var/jenkins_home/workspace/PES2UG20CS206-1/main/hello_exec
Hello, World
Hello, Jenkins
I have successfully built and run
This is to trigger an event in the repo
Finished: SUCCESS
```

Task 5:

Code/script written to create basic pipeline using GitHub repository

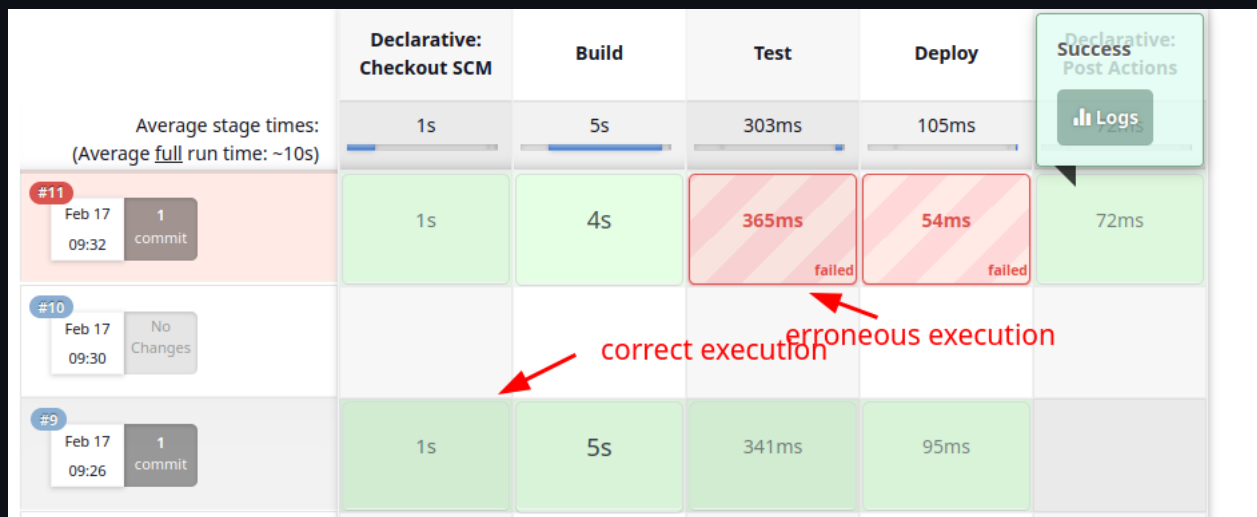
```

Open  ▾  +
1 pipeline {
2   agent any
3   stages{
4     stage('Build'){
5       steps{
6         sh 'g++ main/hello.cpp'
7         build 'PES2UG20CS206-1'
8         echo 'Build Successful'
9       }
10    }
11    stage('Test'){
12      steps{
13        sh './a.out'
14      }
15    }
16    stage('Deploy') {
17      when {
18        expression {
19          currentBuild.result == null || currentBuild.result == 'SUCCESS'
20        }
21      }
22      steps {
23        echo 'Deployment Successful'
24      }
25    }
26  }
27  post {
28    failure {
29      echo 'Pipeline failed'
30    }
31  }
32 }

```

Output of working created pipeline, the screenshot should include:

- Stage view / Execution status of pipeline with all stages succeeded
- Verify Declarative: Post Actions stage succeed for handling failures.



Console Output of the Pipeline

Correct Execution of Pipeline:



Console Output

```
Started by user Mukund Deepak
Lightweight checkout support not available, falling back to full checkout.
Checking out git https://github.com/mukunddeepak/PES2UG20CS206_Jenkins/ into /var/jenkins_home/workspace/PES2UG20CS206@script
/0a16c81f66b0567c27db013c363cef0cb1534aca2a7a0968e3230788b8699545 to read Jenkinsfile
The recommended git tool is: NONE
No credentials specified
> git rev-parse --resolve-git-dir /var/jenkins_home/workspace/PES2UG20CS206@script/0a16c81f66b0567c27db013c363cef0cb1534aca2a7a0968e3230788b8699545/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/mukunddeepak/PES2UG20CS206_Jenkins/ # timeout=10
Fetching upstream changes from https://github.com/mukunddeepak/PES2UG20CS206_Jenkins/
> git --version # timeout=10
> git --version # 'git version 2.30.2'
> git fetch --tags --force --progress -- https://github.com/mukunddeepak/PES2UG20CS206_Jenkins/ +refs/heads/*:refs/remotes/origin/* # timeout=10
Seen branch in repository origin/main
Seen 1 remote branch
> git show-ref --tags -d # timeout=10
Checking out Revision 575d18493c6ad161035aad37245af421b4ffa72b (origin/main)
> git config core.sparsecheckout # timeout=10
> git checkout -f 575d18493c6ad161035aad37245af421b4ffa72b # timeout=10
Commit message: "Added Jenkinsfile 3"
> git rev-list --no-walk 6e51c787df2a53cb2a1ac23f92f57597ff05a72f # timeout=10
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in /var/jenkins_home/workspace/PES2UG20CS206
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Declarative: Checkout SCM)
[Pipeline] checkout
The recommended git tool is: NONE
No credentials specified
> git rev-parse --resolve-git-dir /var/jenkins_home/workspace/PES2UG20CS206/.git # timeout=10
Fetching changes from the remote Git repository
```


```
> git config core.sparsecheckout # timeout=10
> git checkout -f 575d18493c6ad161035aad37245af421b4ffa72b # timeout=10
Commit message: "Added Jenkinsfile 3"
> git rev-list --no-walk 6e51c787df2a53cb2a1ac23f92f57597ff05a72f # timeout=10
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in /var/jenkins_home/workspace/PES2UG20CS206
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Declarative: Checkout SCM)
[Pipeline] checkout
The recommended git tool is: NONE
No credentials specified
> git rev-parse --resolve-git-dir /var/jenkins_home/workspace/PES2UG20CS206/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/mukunddeepak/PES2UG20CS206_Jenkins/ # timeout=10
Fetching upstream changes from https://github.com/mukunddeepak/PES2UG20CS206_Jenkins/
> git --version # timeout=10
> git --version # 'git version 2.30.2'
> git fetch --tags --force --progress -- https://github.com/mukunddeepak/PES2UG20CS206_Jenkins/ +refs/heads/*:refs/remotes/origin/* # timeout=10
Seen branch in repository origin/main
Seen 1 remote branch
> git show-ref --tags -d # timeout=10
Checking out Revision 575d18493c6ad161035aad37245af421b4ffa72b (origin/main)
> git config core.sparsecheckout # timeout=10
> git checkout -f 575d18493c6ad161035aad37245af421b4ffa72b # timeout=10
Commit message: "Added Jenkinsfile 3"
[Pipeline] }
[Pipeline] // stage
[Pipeline] withEnv
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Build)
[Pipeline] sh
+ g++ main/hello.cpp
[Pipeline] build (Building PES2UG20CS206-1)
Scheduling project: PES2UG20CS206-1
Starting building: PES2UG20CS206-1 #8
[Pipeline] echo
Build Successful
```

```

+ g++ main/hello.cpp
[Pipeline] build {Building PES2UG20CS206-1}
Scheduling project: PES2UG20CS206-1
Starting building: PES2UG20CS206-1 #8
[Pipeline] echo
Build Successful
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Test)
[Pipeline] sh
+ ./a.out
Hello, World
Hello, Jenkins
I have successfully built and run
This is to trigger an event in the repo
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Deploy)
[Pipeline] echo
Deployment Successful
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS

```

Erroneous Execution of Pipeline:

 Console Output

Started by user Mukund Deepak

Lightweight checkout support not available, falling back to full checkout.

Checking out git https://github.com/mukunddeepak/PES2UG20CS206_Jenkins/ into /var/jenkins_home/workspace/PES2UG20CS206@script/0a16c81f66b0567c27db013c363cef0cb1534aca2a7a0968e3230788b8699545 to read Jenkinsfile

The recommended git tool is: NONE

No credentials specified

> git rev-parse --resolve-git-dir /var/jenkins_home/workspace/PES2UG20CS206@script/0a16c81f66b0567c27db013c363cef0cb1534aca2a7a0968e3230788b8699545/.git # timeout=10

Fetching changes from the remote Git repository

> git config remote.origin.url https://github.com/mukunddeepak/PES2UG20CS206_Jenkins/ # timeout=10

Fetching upstream changes from https://github.com/mukunddeepak/PES2UG20CS206_Jenkins/

> git --version # timeout=10

> git --version # 'git version 2.30.2'

> git fetch --tags --force --progress -- https://github.com/mukunddeepak/PES2UG20CS206_Jenkins/ *refs/heads/*:refs/remotes/origin/* # timeout=10

Seen branch in repository origin/main

Seen 1 remote branch

> git show-ref --tags -d # timeout=10

Checking out Revision b356aac6535c8c9eea45011d27e36b21fa67c2b4 (origin/main)

> git config core.sparsecheckout # timeout=10

> git checkout -f b356aac6535c8c9eea45011d27e36b21fa67c2b4 # timeout=10

Commit message: "Added a deliberate error"

> git rev-list --no-walk 2ab233637e7eea2f05f668a079f24d98a07ad975 # timeout=10

[Pipeline] Start of Pipeline

[Pipeline] node

Running on Jenkins in /var/jenkins_home/workspace/PES2UG20CS206

[Pipeline] {

[Pipeline] stage

[Pipeline] { (Declarative: Checkout SCM)

[Pipeline] checkout

The recommended git tool is: NONE

No credentials specified

> git rev-parse --resolve-git-dir /var/jenkins_home/workspace/PES2UG20CS206/.git # timeout=10

Fetching changes from the remote Git repository

```
no credentials specified
> git rev-parse --resolve-git-dir /var/jenkins_home/workspace/PES2UG20CS206/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/mukunddeepak/PES2UG20CS206_Jenkins/ # timeout=10
Fetching upstream changes from https://github.com/mukunddeepak/PES2UG20CS206_Jenkins/
> git --version # timeout=10
> git --version # 'git version 2.30.2'
> git fetch --tags --force --progress -- https://github.com/mukunddeepak/PES2UG20CS206_Jenkins/ +refs/heads/*:refs/remotes/origin/* # timeout=10
Seen branch in repository origin/main
Seen 1 remote branch
> git show-ref --tags -d # timeout=10
Checking out Revision b356aac6535c8c9eea45011d27e36b21fa67c2b4 (origin/main)
> git config core.sparsecheckout # timeout=10
> git checkout -f b356aac6535c8c9eea45011d27e36b21fa67c2b4 # timeout=10
Commit message: "Added a deliberate error"
[Pipeline] }
[Pipeline] // stage
[Pipeline] withEnv
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Build)
[Pipeline] sh
+ g++ main/hello.cpp
[Pipeline] build (Building PES2UG20CS206-1)
Scheduling project: PES2UG20CS206-1
Starting building: PES2UG20CS206-1 #13
[Pipeline] echo
Build Successful
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Test)
[Pipeline] sh
+ ./a
/var/jenkins_home/workspace/PES2UG20CS206/tmp/durable-e8baf259/script.sh: 1: ./a: not found
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Deploy)
Stage "Deploy" skipped due to earlier failure(s)
```

Stage "Deploy" skipped due to earlier failure(s)

```
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Declarative: Post Actions)
[Pipeline] echo
Pipeline failed
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
ERROR: script returned exit code 127
Finished: FAILURE
```

Link to Github Repo

[Github Repo](#)