

PROJECT 1

DevOps Assembly Lines

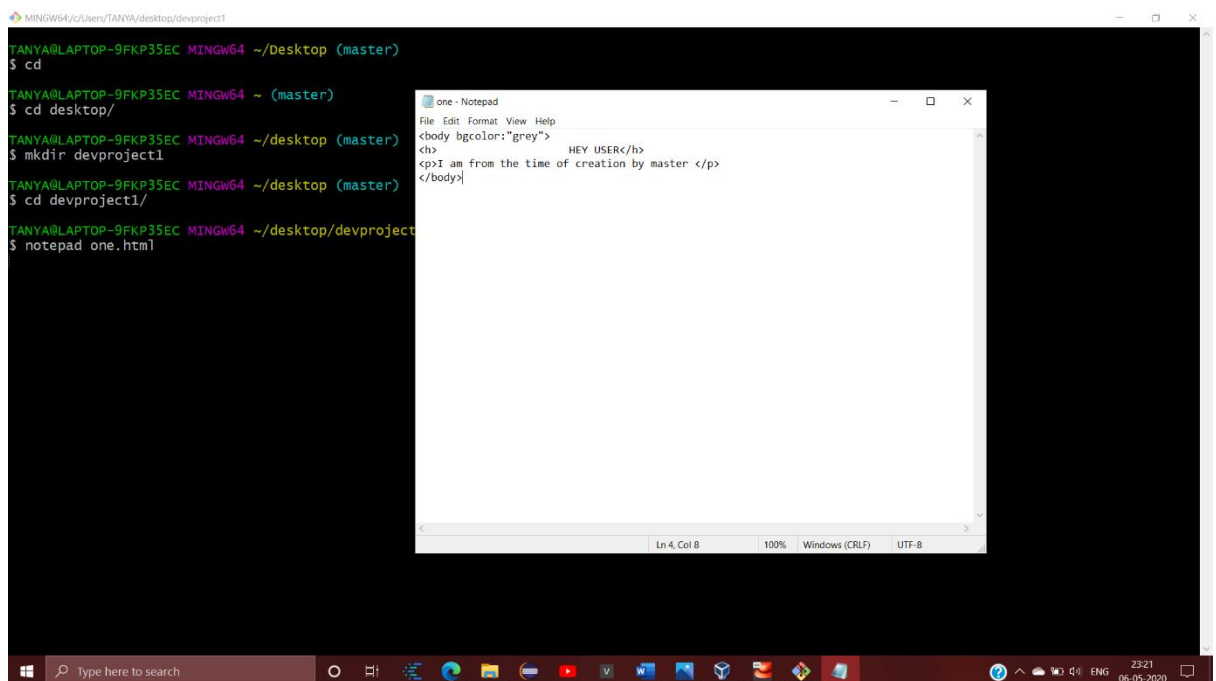
(2020)

TOPIC: Setup a Jenkins production and testing pipeline using docker

Assumptions: Git is installed on Windows. The user must have GitHub profile. Docker and Jenkins must be installed ,here it is installed on RHEL8 running on VMWare. Webserver and docker server is configured. There is active internet connection.

Setting up Git and GitHub repositories and branches:

- Create a folder (here on Desktop) -devproject1 and in it create a one.html file with data.



The screenshot shows a Windows command prompt window with the following commands and output:

```
TANYA@LAPTOP-9FKP35EC MINGW64 ~/Desktop (master)
$ cd
TANYA@LAPTOP-9FKP35EC MINGW64 ~ (master)
$ cd desktop/
TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop (master)
$ mkdir devproject1
TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop (master)
$ cd devproject1/
TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1
$ notepad one.html
```

Simultaneously, a Notepad window is open, showing the following HTML code:

```
File Edit Format View Help
<body bgcolor="grey">
<h> HEY USER</h>
<p>I am from the time of creation by master </p>
</body>
```

The Windows taskbar at the bottom shows the time as 23:21 on 06-05-2020.

- Create a GitHub repository. And copy the following command onto your git and run it. It will create README file.

The image shows a GitHub repository page for 'devproject1git' and a terminal window demonstrating the setup process.

GitHub Repository Page:

- Quick setup — if you've done this kind of thing before
- Set up in Desktop or HTTPS SSH `https://github.com/TanyaChetnaVaish/devproject1git.git`
- Get started by creating a new file or uploading an existing file. We recommend every repository include a README, LICENSE, and .gitignore.
- ...or create a new repository on the command line
- ...or push an existing repository from the command line
- ...or import code from another repository

Terminal Window (MINGW64):

```
TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (master)
$ git init
Initialized empty Git repository in C:/Users/TANYA/Desktop/devproject1/.git/

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (master)
$ echo "# devproject1git" >> README.md
git add README.md
git commit -m "first commit"
git remote add origin https://github.com/TanyaChetnaVaish/devproject1git.git
git push -u origin master

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (master)
$ git init
Reinitialized existing Git repository in C:/Users/TANYA/Desktop/devproject1/.git/

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (master)
$ git add README.md
Warning: LF will be replaced by CRLF in README.md.
The file will have its original line endings in your working directory

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (master)
$ git commit -m "first commit"
[master (root-commit) a3b0215] first commit
1 file changed, 1 insertion(+)
create mode 100644 README.md

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (master)
$ git remote add origin https://github.com/TanyaChetnaVaish/devproject1git.git

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (master)
$ git push -u origin master
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Writing objects: 100% (3/3), 234 bytes | 14.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To https://github.com/TanyaChetnaVaish/devproject1git.git
 * [new branch] master -> master
Branch 'master' set up to track remote branch 'master' from 'origin'.

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (master)
$
```

- Make the dev1 branch

```
MINGW64/c/Users/TANYA/desktop/devproject1
TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (master)
$ git init
Reinitialized existing Git repository in C:/Users/TANYA/Desktop/devproject1/.git/

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (master)
$ git add README.md
warning: LF will be replaced by CRLF in README.md.
The file will have its original line endings in your working directory

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (master)
$ git commit -m "first commit"
[master (root-commit) a3b0215] first commit
1 file changed, 1 insertion(+)
create mode 100644 README.md

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (master)
$ git remote add origin https://github.com/TanyaChetnaVaish/devproject1git.git

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (master)
$ git push -u origin master
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Writing objects: 100% (3/3), 234 bytes | 14.00 KiB/s, done.
total 3 (delta 0), reused 0 (delta 0)
To https://github.com/TanyaChetnaVaish/devproject1git.git
 * [new branch] master -> master
Branch 'master' set up to track remote branch 'master' from 'origin'.

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (master)
$ git branch dev1

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (master)
$ git log
commit a3b0215a17526d748f80e2319620d987c002fea2 (HEAD -> master, origin/master, dev1)
Author: unknown <tanya.vaish.743@gmail.com>
Date:   Wed May 6 23:26:28 2020 +0530

    first commit

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (master)
$
```

To get into this branch use git branch dev1 command

```
MINGW64/c/Users/TANYA/desktop/devproject1
TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (dev1)
$ git checkout dev1
Already on 'dev1'

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (dev1)
$ |
```

- Now make changes to one.html file in this branch and add and commit it

```
MINGW64~/Users/TANYA/desktop/devproject1
TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (dev1)
$ git checkout dev1
Already on 'dev1'

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (dev1)
$ cat >>one.html
I am update 1 done by dev1

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (dev1)
$ git add one.html
warning: LF will be replaced by CRLF in one.html.
The file will have its original line endings in your working directory

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (dev1)
$ git commit one.html -m "By dev1 update1"
warning: LF will be replaced by CRLF in one.html.
The file will have its original line endings in your working directory
[dev1 7f95200] By dev1 update1
1 file changed, 4 insertions(+)
create mode 100644 one.html

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop/devproject1 (dev1)
$ git pus
```

- Now checkout into master branch and push the updates and file on GitHub. Here, we will notice neither of the branch merges or hampers the other, thereby maintaining isolation.

```
MINGW64~/Users/TANYA/desktop
TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop (dev1)
$ git checkout master
Switched to branch 'master'
Your branch is ahead of 'origin/master' by 1 commit.
(use "git push" to publish your local commits)

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop (master)
$ git log
commit de6b827597ef2bae0ffcd5bc06dc455b6a9cdb33 (HEAD -> master, origin/dev1)
Author: unknown <tanya.vaish.743@gmail.com>
Date: Wed May 6 23:51:09 2020 +0530

    Up1master

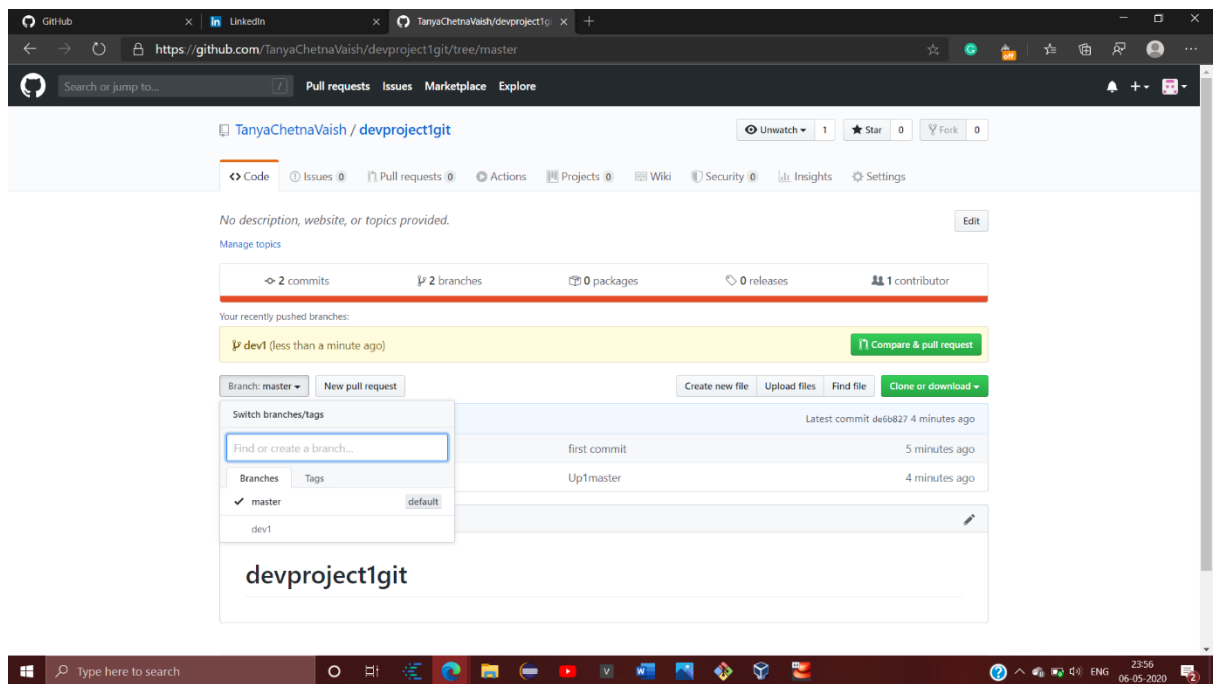
commit 037afb7d6d3e1f089897436c1439162ce60f1de6 (origin/master)
Author: unknown <tanya.vaish.743@gmail.com>
Date: Wed May 6 23:50:36 2020 +0530

    first commit

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop (master)
$ git push -all
error: did you mean '--all' (with two dashes ?)

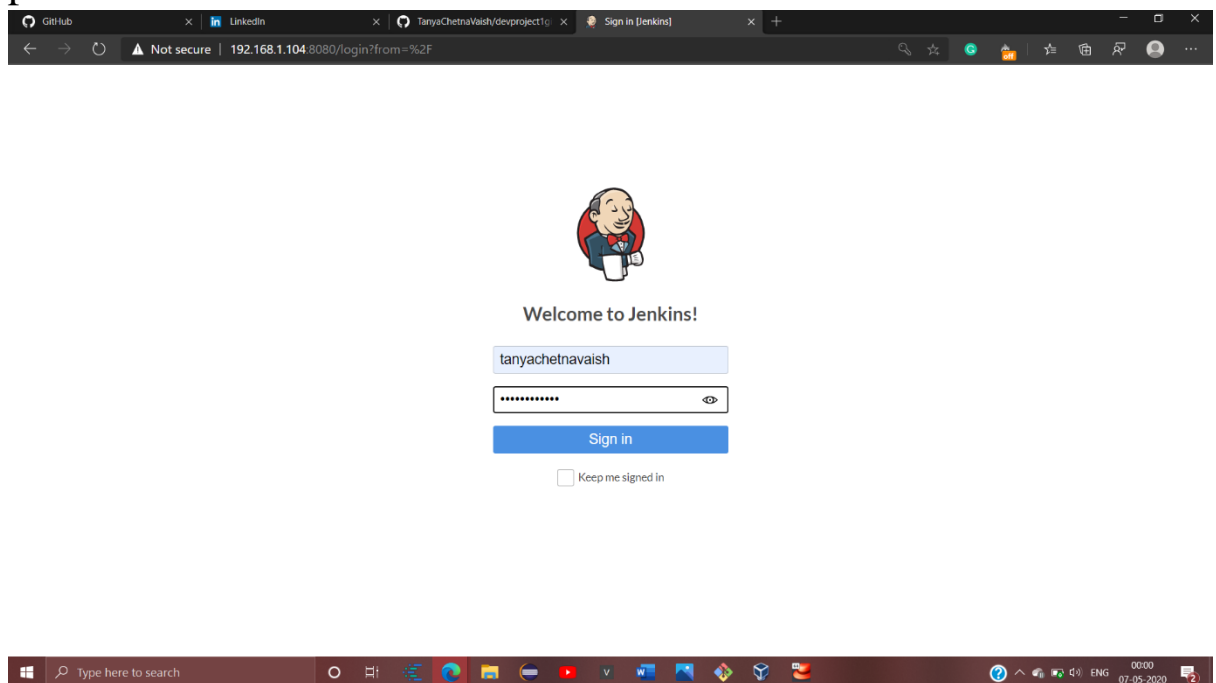
TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop (master)
$ git push --all
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 328 bytes | 82.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/TanyaChetnaVaish/devproject1git.git
   de6b827..1fd06e9 dev1 -> dev1
   037afb7..de6b827 master -> master

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop (master)
$
```

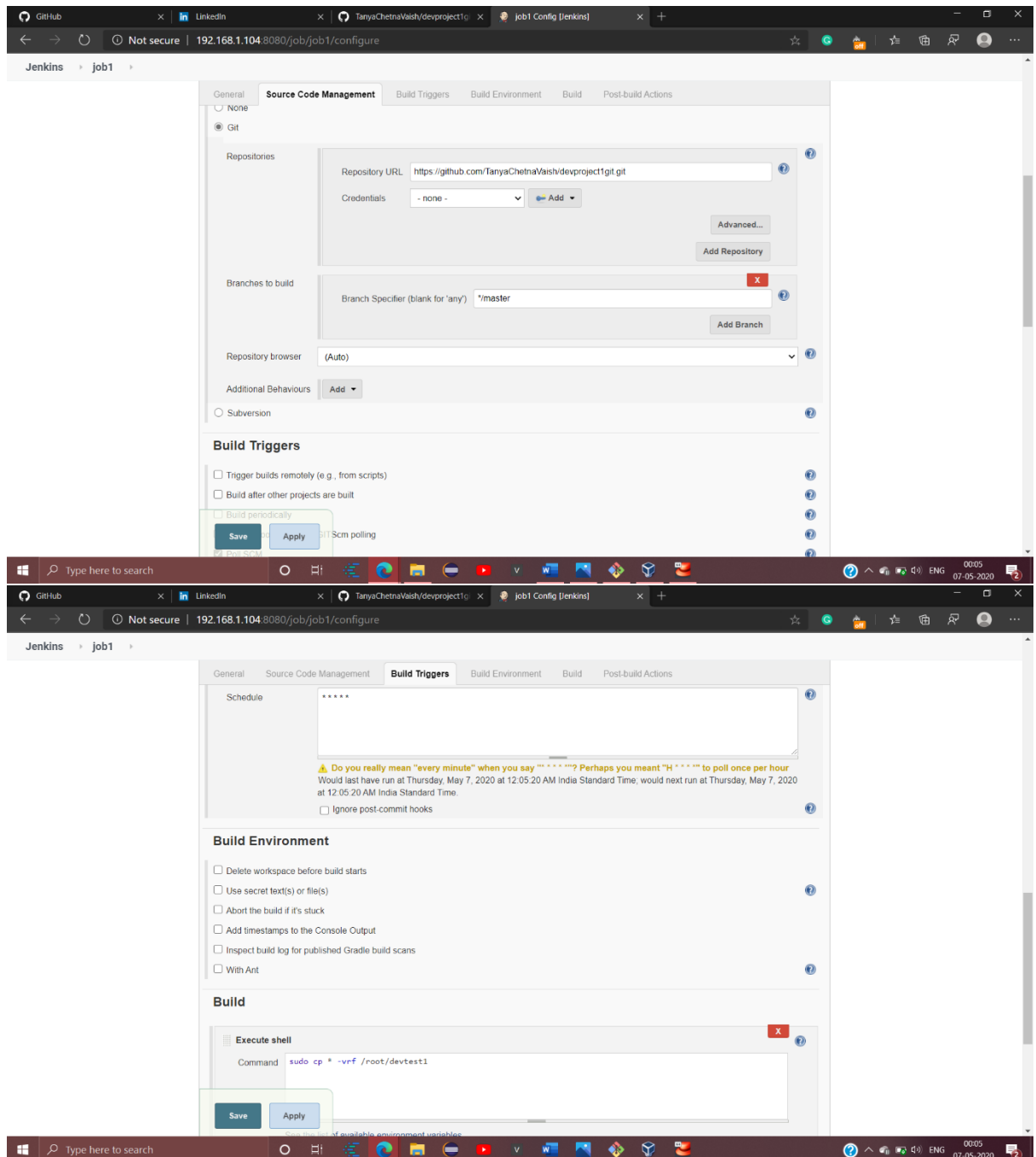


Setting up Jenkins with useful Configurations required for automation:

Login into Jenkins using the IP Address of RHEL8 and 8080 port.

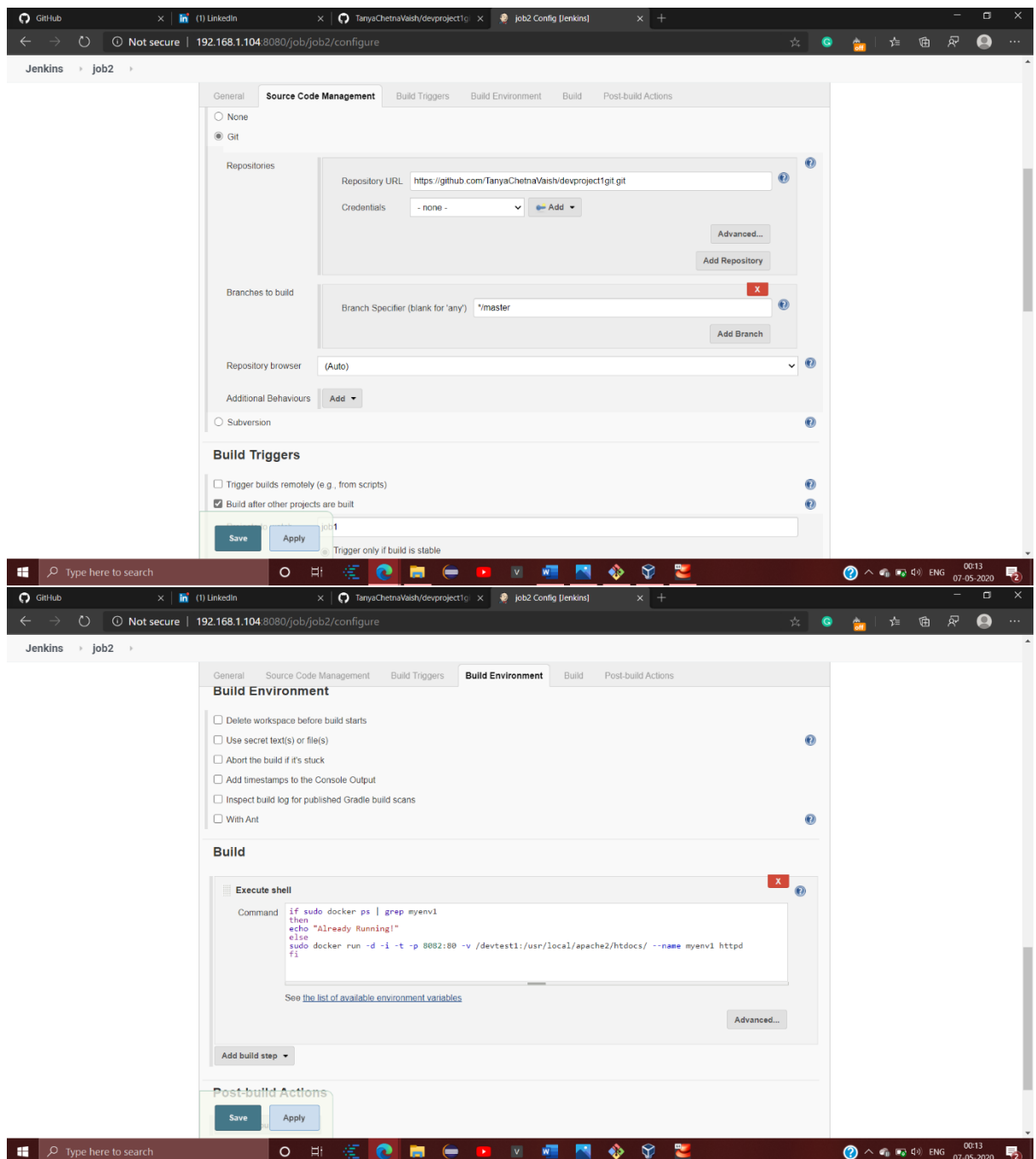


- Now create job1 (Freestyle project) with following Configurations. Use the GitHub URL of the repository here and enable POLL SCM



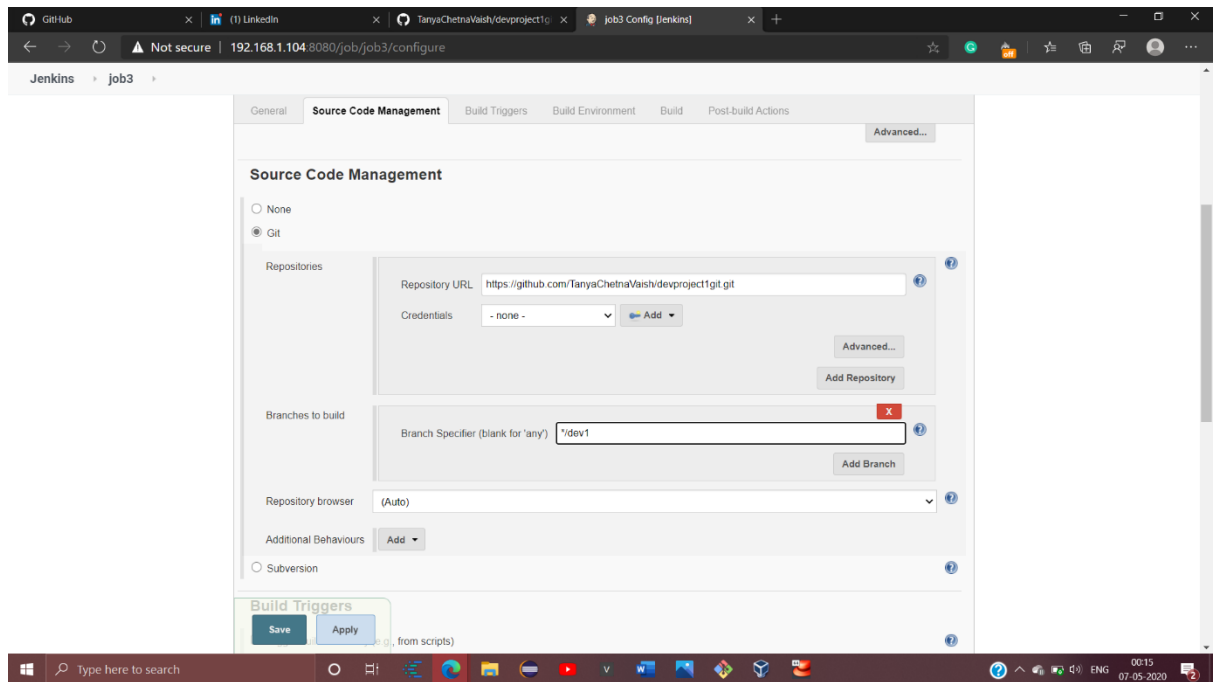
Write the above command in Execute Shell of Build. Remember the path or file specified is the already existing folder in our RHEL8.

- Create job2 with following configurations: Use the GitHub repository URL here, enable POLL SCM



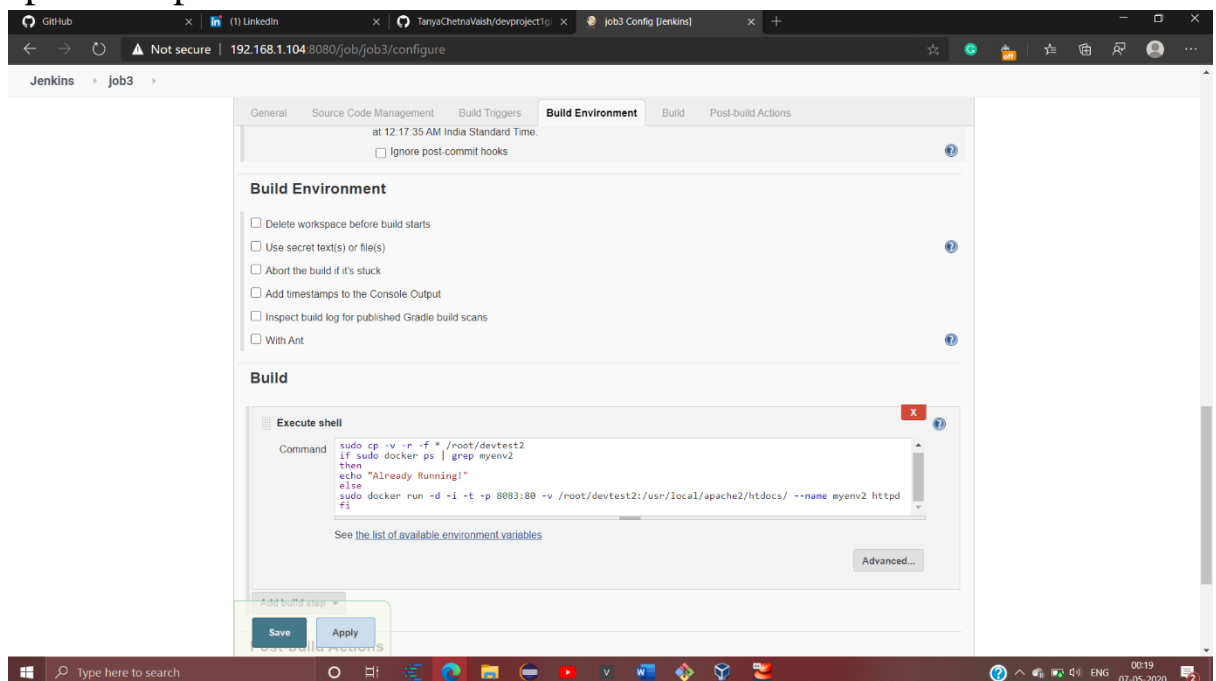
Save the job2 now .

- Create job3(Freestyle project) and copy the GitHub repository URL .

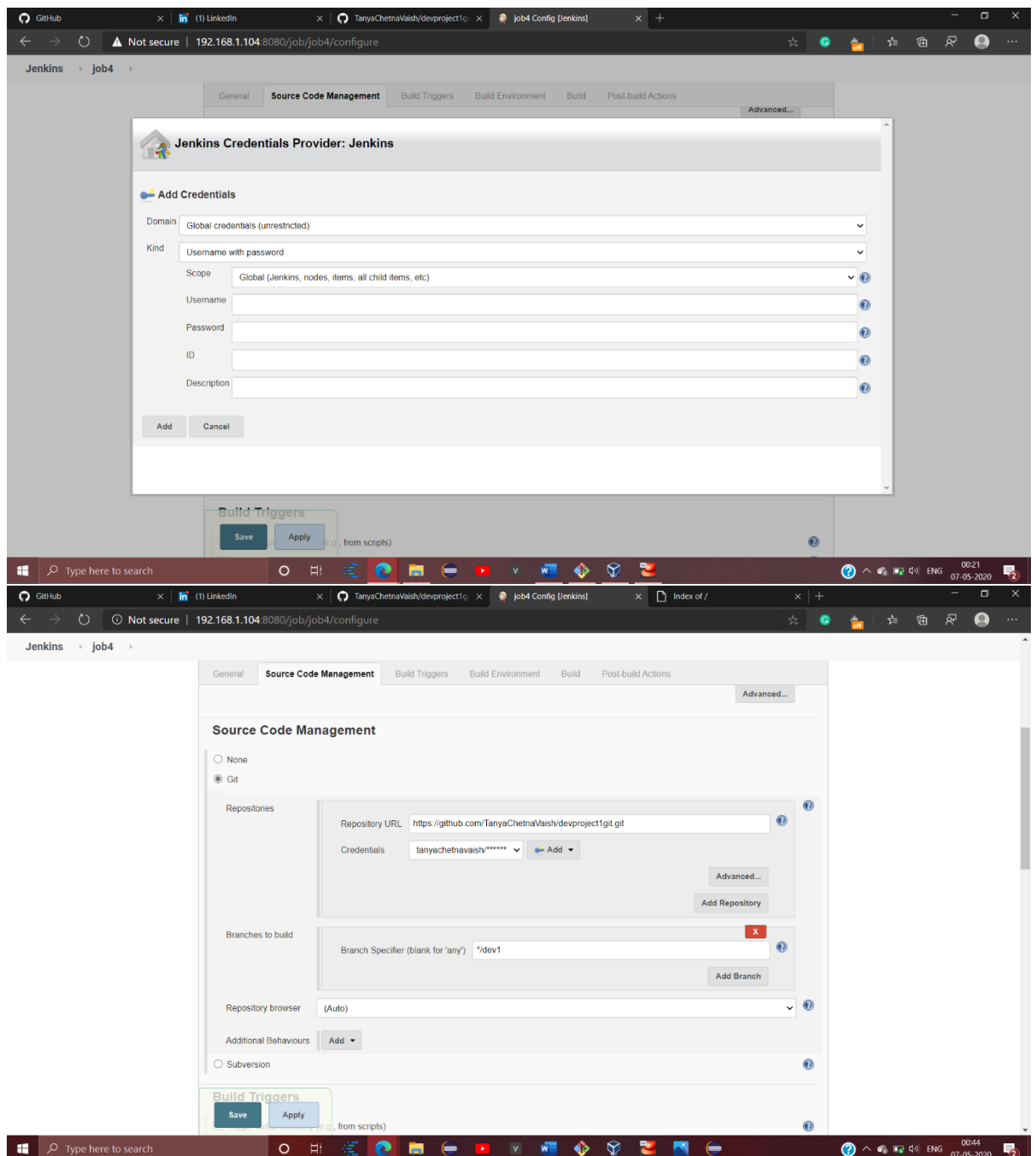


Remember here the branch specification has to be done that is write the alternate created branch here (in this it's dev1)

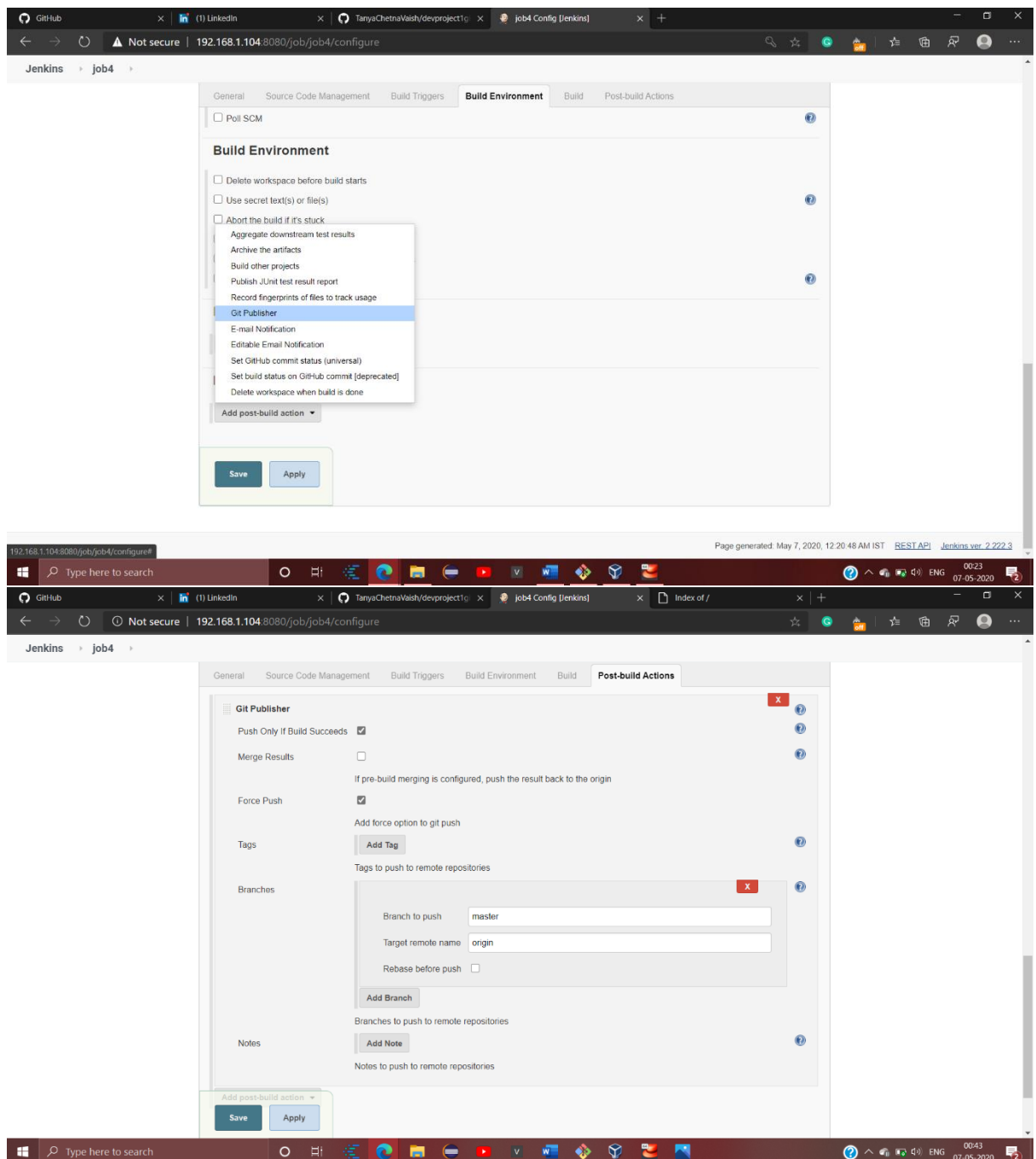
Write the following code on Execute shell. Remember to specify the right folder name from RHEL8 one that exists on the right specified path



- Now create the last job4 with following configurations:



Now in the post-build actions select Git publisher option and proceed with following configurations:

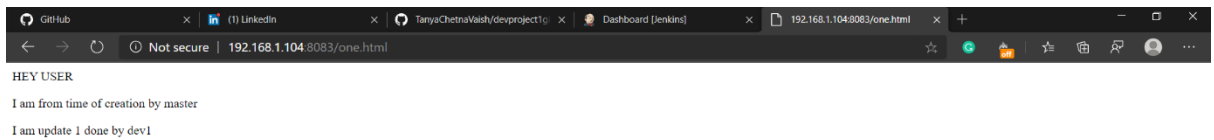


Now save job4 too with the above-mentioned configurations.

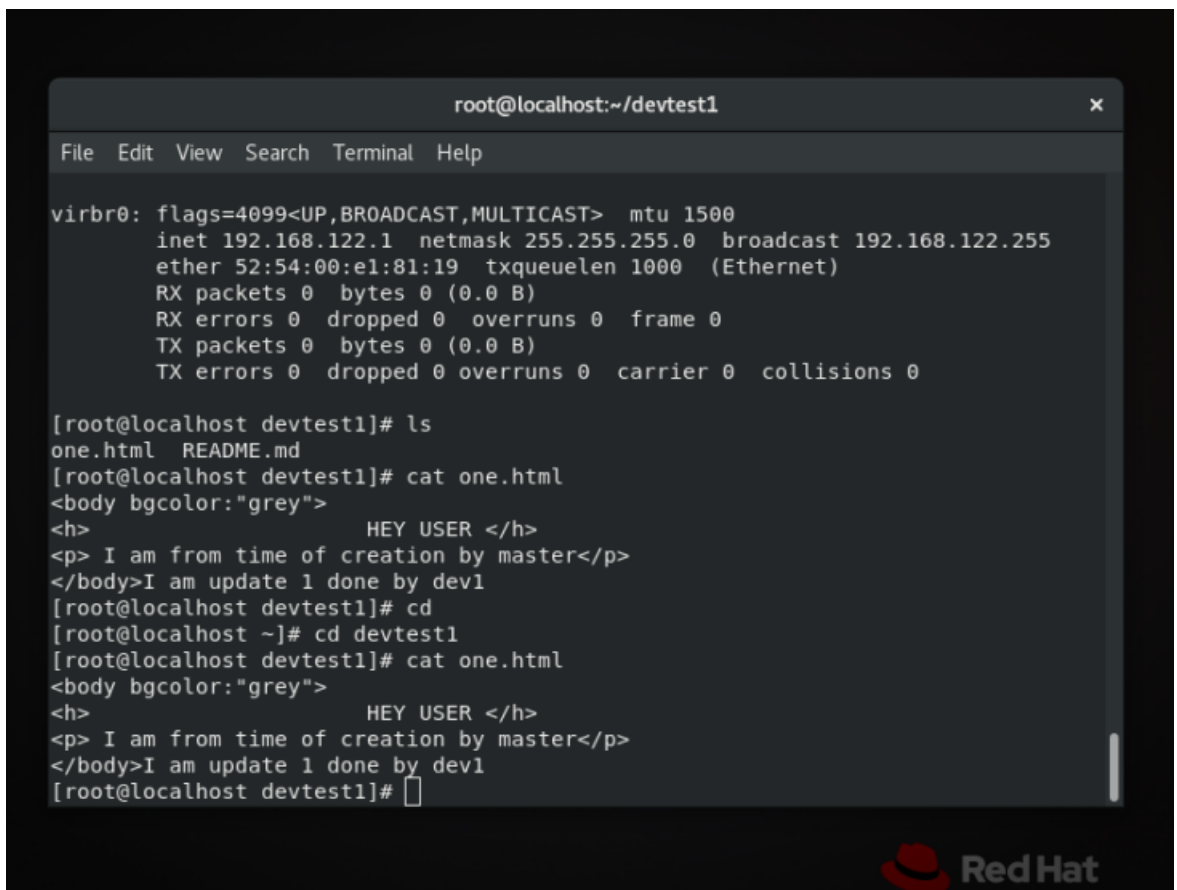
That's it!

Now you're done with your automation.

You can access your one.html file and see the data merged. But job4 has to be built by us, thus insisting security as well from the users side.



Further we can from RHEL8, both the files from devtest1 and devtest2 contain data from both master and dev1 branch in one



		job1	12 min - #3	N/A	2.8 sec	
		job2	12 min - #5	N/A	1.8 sec	
		job3	13 min - #2	N/A	3.4 sec	
		job4	13 min - #1	N/A	10 sec	

If we make changes in the file from dev branch then

```
MINGW64/c/Users/TANYA/desktop
TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop (master)
$ git checkout dev1
Switched to branch 'dev1'
Your branch is up to date with 'origin/dev1'.

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop (dev1)
$ cat>>one.html
Trying expl by dev1

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop (dev1)
$ git commit one.html -m "Trying1"
warning: LF will be replaced by CRLF in one.html.
The file will have its original line endings in your working directory
warning: LF will be replaced by CRLF in one.html.
The file will have its original line endings in your working directory
[dev1 6ed07d4] Trying1
1 file changed, 1 insertion(+)

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop (dev1)
$ git push
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 324 bytes | 81.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/TanyaChetnaVaish/devproject1git.git
   1fd06e9..6ed07d4  dev1 -> dev1

TANYA@LAPTOP-9FKP35EC MINGW64 ~/desktop (dev1)
$ git checkout master
Switched to branch 'master'
Your branch is up to date with 'origin/master'.
```

It will get updated after running job4

```
GitHub (1) LinkedIn TanyaChetnaVaish/devproject1git Dashboard [Jenkins] 192.168.1.104:8083/one.html
Not secure | 192.168.1.104:8083/one.html

HEY USER

I am from time of creation by master

I am update 1 done by dev1 Trying expl by dev1
```

I hope it helps. Thank-you!