You have been hired as a Sr. DevOps Engineer in Abode Software. They want to implement DevOps Lifecycle in their company. You have been asked to implement this lifecycle as fast as possible. Abode Software is a product-based company and their product is available on this GitHub link.

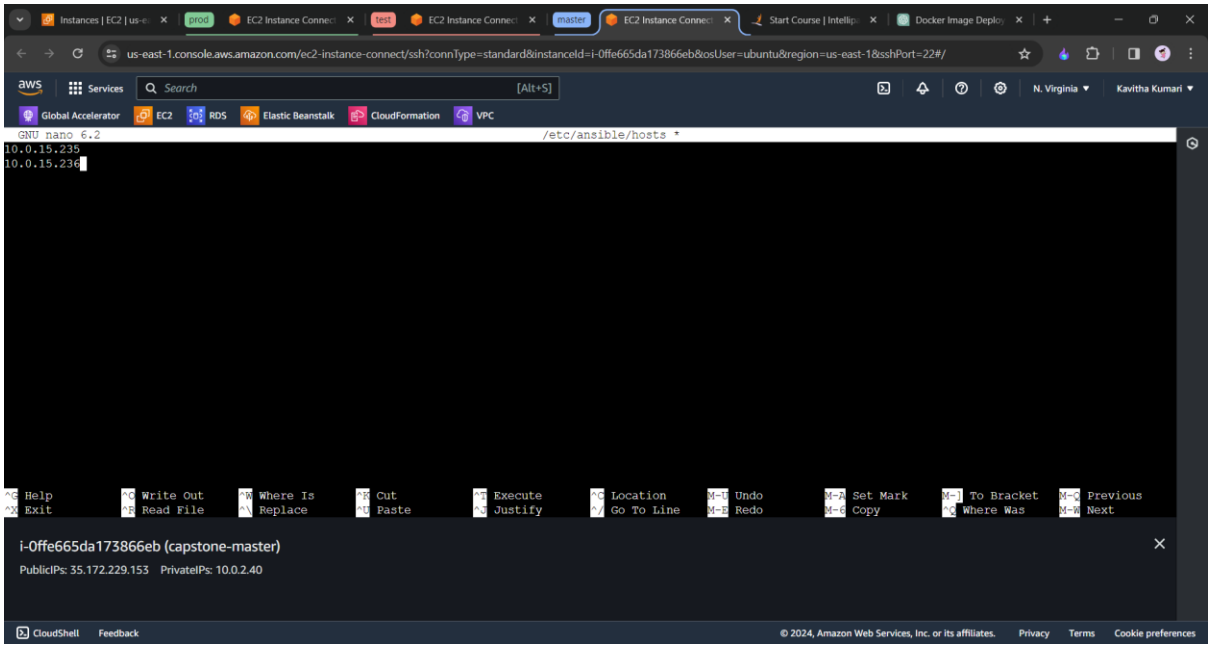
https://github.com/hshar/website.git

Following are the specifications of the lifecycle:

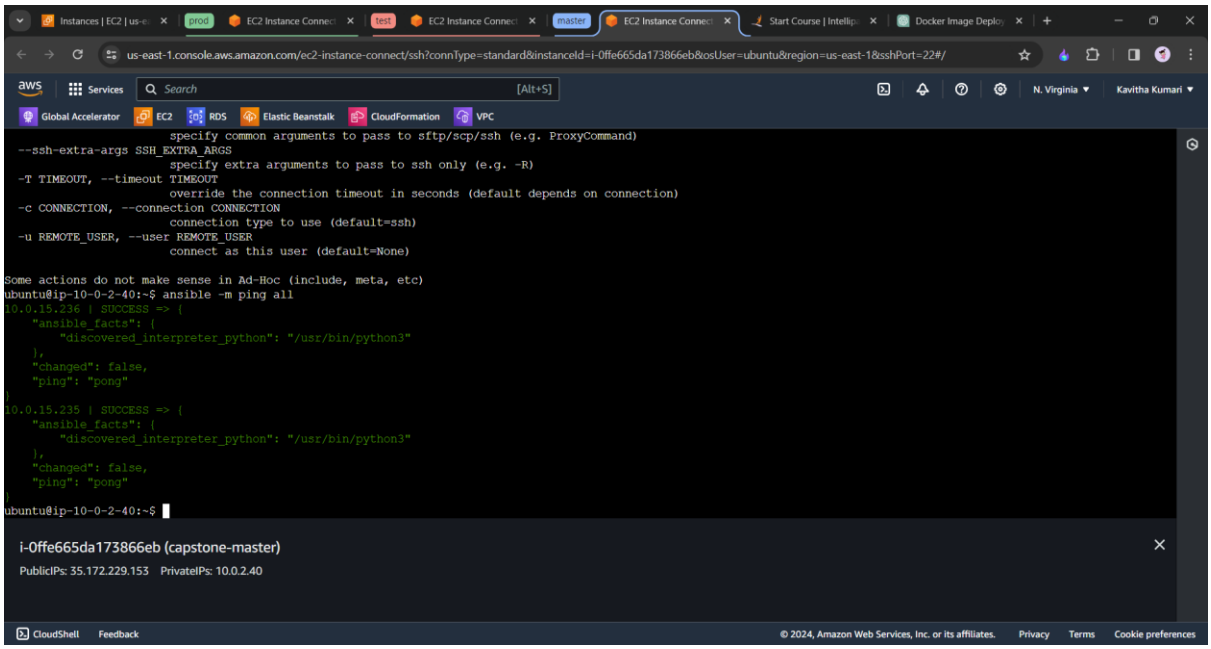
1. Install the necessary software on the machines using a configuration management tool
2. Git workflow must be implemented
3. CodeBuild should automatically be triggered once a commit is made to master branch or develop branch.
   a. If a commit is made to master branch, test, and push to prod
   b. If a commit is made to develop branch, just test the product, do not push to prod
4. The code should be containerized with the help of a Dockerfile. The Dockerfile should be built every time there is a push to GitHub. Use the following pre-built container for your application: hshar/webapp the code should reside in '/var/www/html'
5. The above tasks should be defined in a Jenkins Pipeline with the following jobs:
   a. Job1: build
   b. Job2:test
   c.Job3: prod

Procedure: -

- Ansible master= jenkins and java with the help of ansibles
- java, docker on the slaves
- one = master, two and three= slaves. Total three instances
- install ansible on the master
- keygen to connect all the slave with the master
- sudo nano /etc/ansible/hosts and paste the private ips of both of the slaves



- save and exit from the file.
- Check whether we are sucessfully ping the test and prod “ansible -m ping all”



- Now we will create playbook to install jenkins and java on the slave machine
- Sudo nano play.yaml

```
---
- name: tasks for the master
  hosts: localhost //master machine
  become: true
  tasks:
    - name: executing script on master
      script: master.sh

- name: tasks for slave
```

```
  hosts: all //refers to all the slave machine
  become: true
  tasks:
    - name: executing script on slave
      script: slave.sh
```

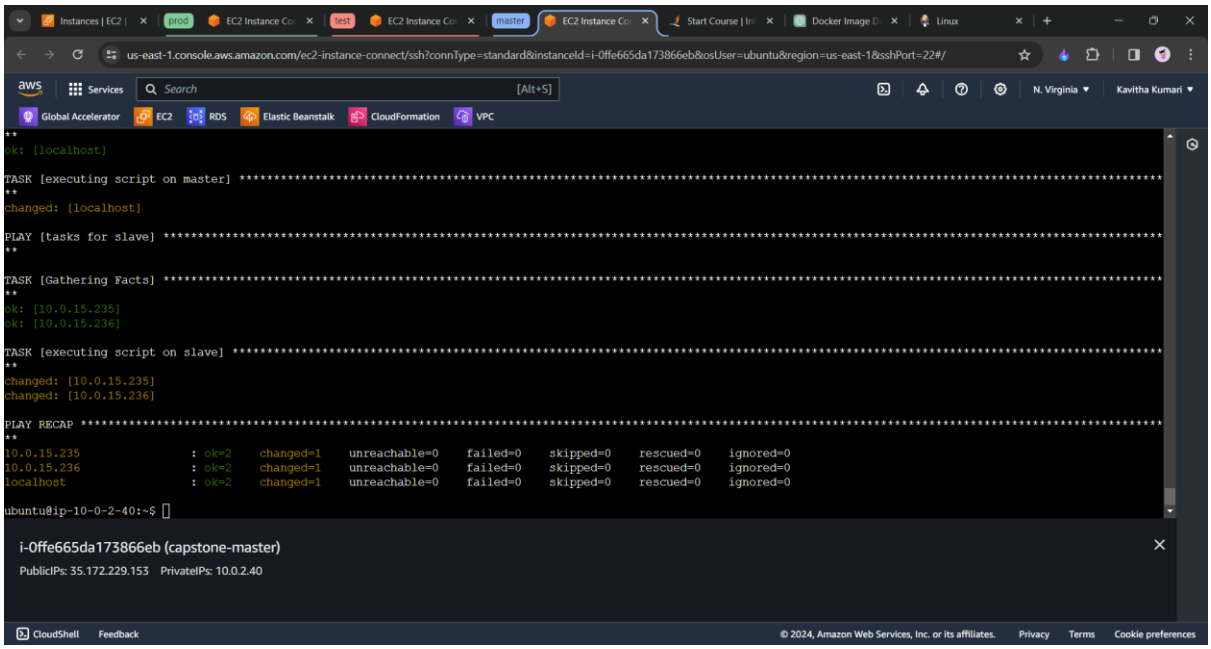
- sudo nano master.sh

```
sudo apt update
sudo apt install openjdk-11-jdk -y

sudo wget -O /usr/share/keyrings/jenkins-keyring.asc \

  https://pkg.jenkins.io/debian/jenkins.io-2023.key

echo deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] \

  https://pkg.jenkins.io/debian binary/ | sudo tee \

  /etc/apt/sources.list.d/jenkins.list > /dev/null

sudo apt-get update

sudo apt-get install jenkins
---------------------------------or-------------------
```

- slave.sh

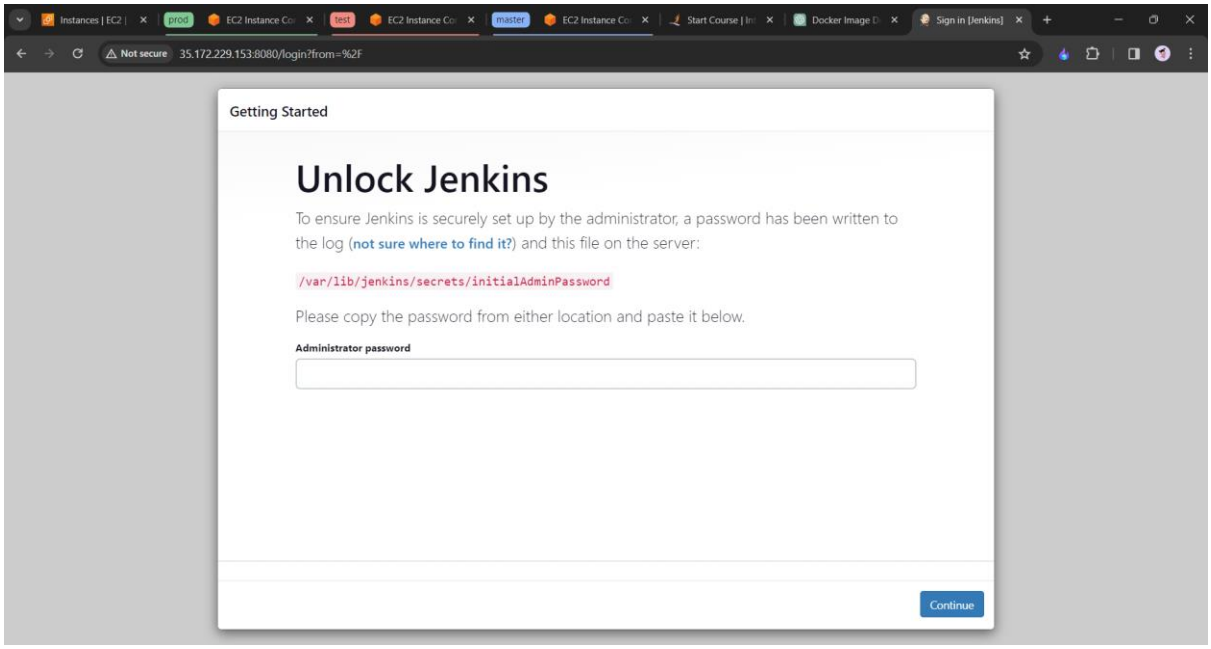
```
sudo apt update
sudo apt install openjdk-11-jdk -y
sudo apt install docker.io -y
```

- ansible-playbook play.yaml –-syntax-check
- ansible-playbook play.yaml –-check //for the dry run
- ansible-playbook play.yaml

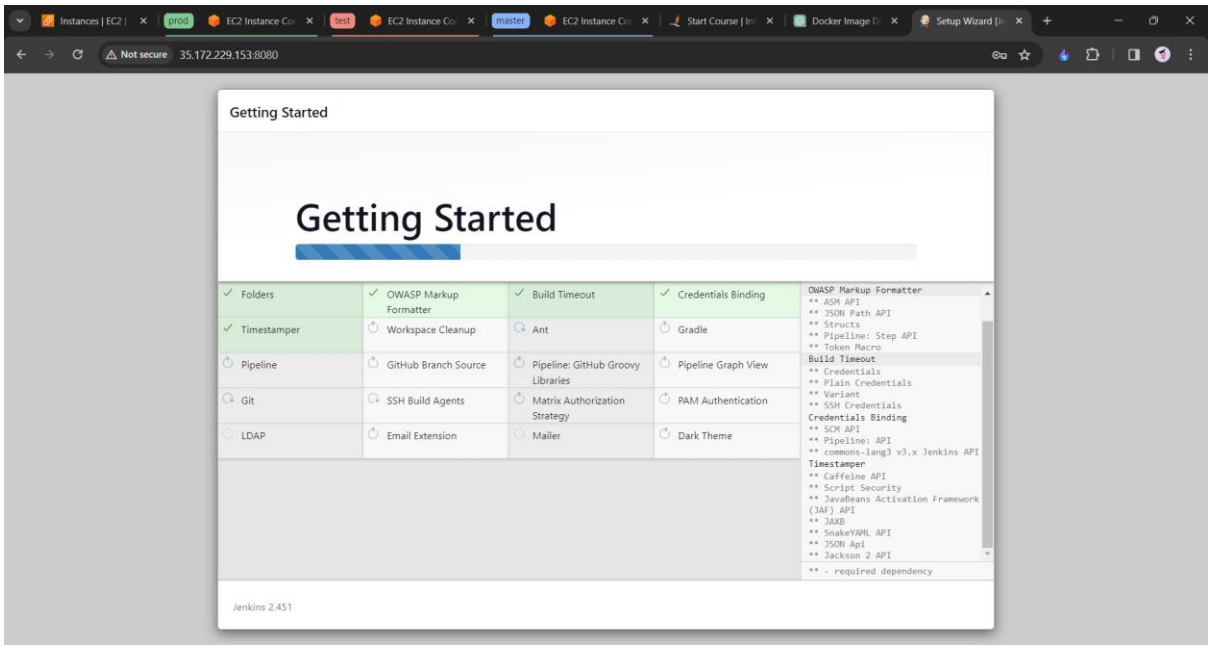


- We need to set the jenkins dashborad and to add the nodes over jenkins

Dashboard setting of jenkins

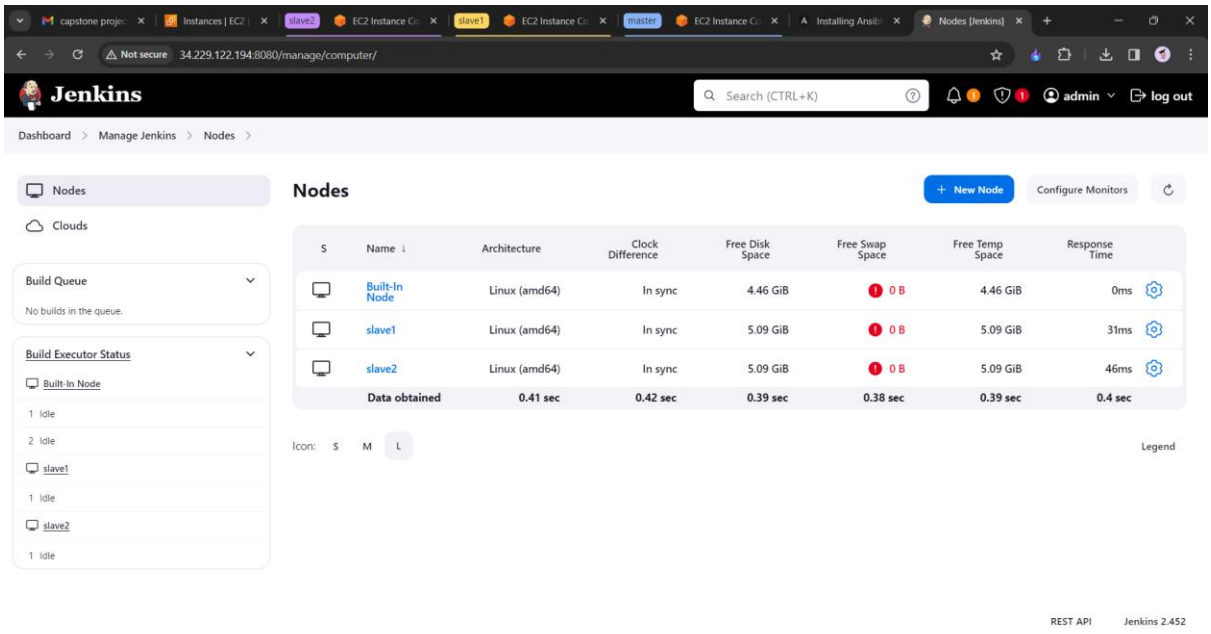


- Unlock jenkins with the password
- Install the suggested pluggins



- We need to create the admin user(username,password and emailID)
- Please install the plugin called “SSH Agent” to connect the nodes.
- We are ready to see the dashboard.
- We will add the nodes now.
- Goto to manage jenkins>add nodes>newnode>
- Give “name” permanent agent and create
- Add description “remote root directory as :**home/ubuntu/jenkins**

- Launch method. Launch agent via ssh
- Hosts : add ip address of the slave private ip
- Credentials: click on add and click on jenkis “select kind ssh username with private key”
- Below scroll username as ubuntu private key copy its content and paste it
- Host key verification strategy to non verifying strategy
- Click on save

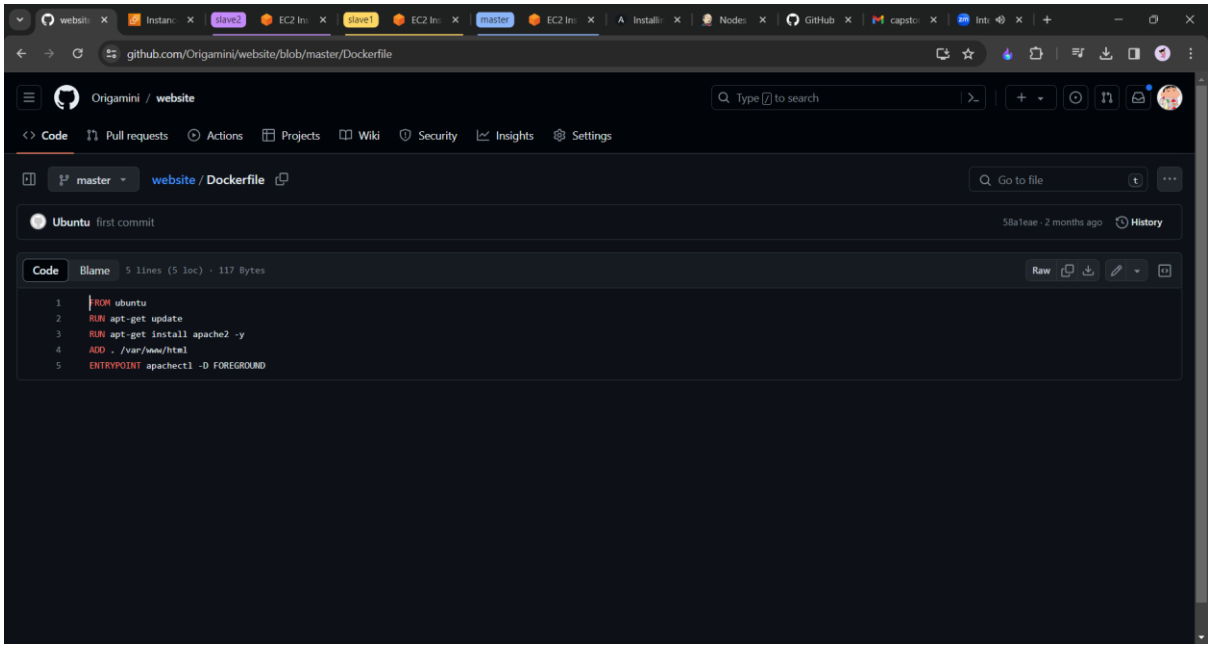


We will create the repository in github that we are going to use for the project.

- Fork the repository that is give by the project.
- Then we will create the docker file to containarize
- On the github create a new file with the name “Dockerfile”

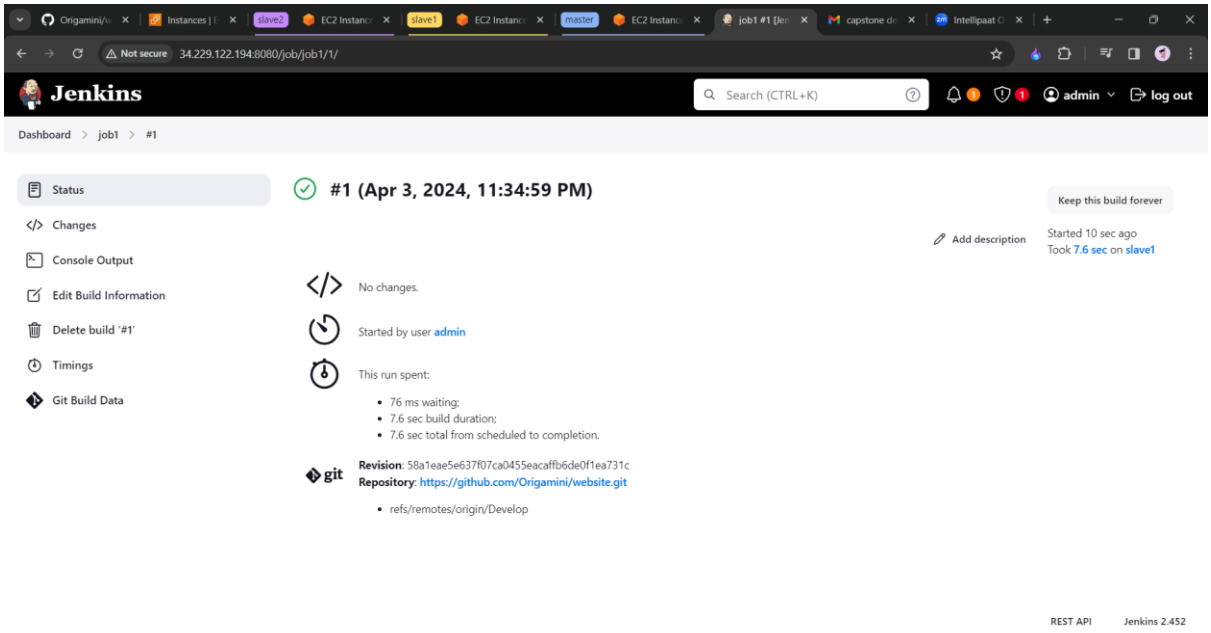
```
FROM ubuntu
RUN apt update
RUN apt install apache2 -y
ADD . /var/www/html
ENTRYPOINT apachectl -D FOREGROUND
```

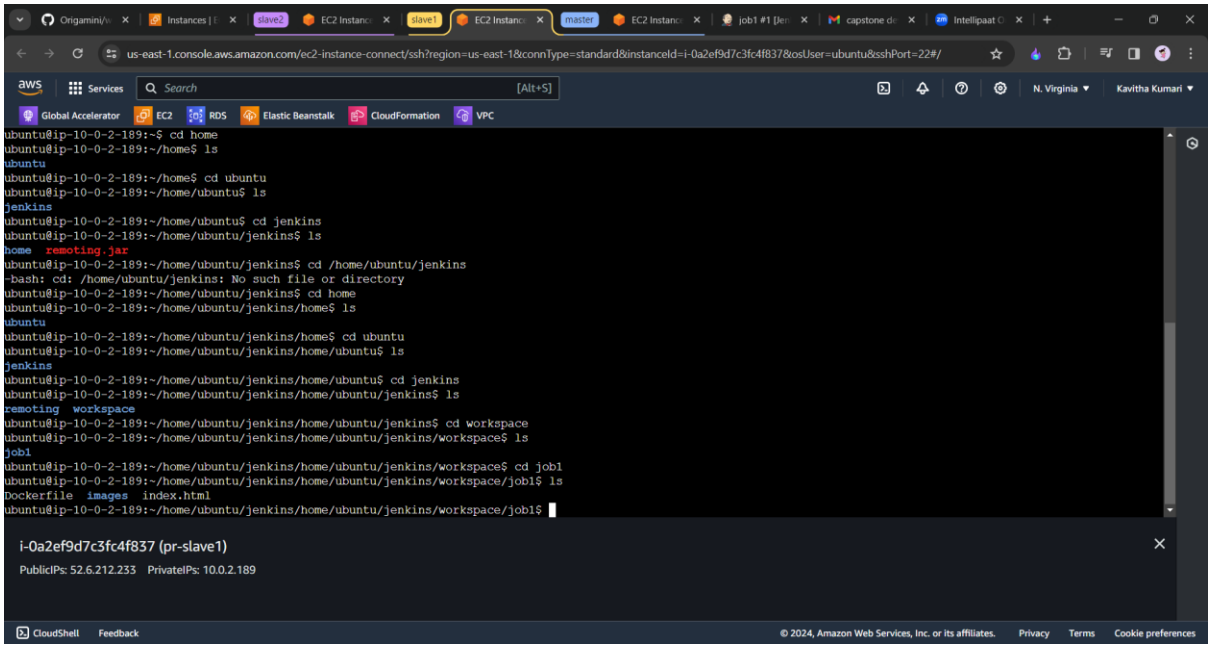
- Commit the changes
- We need to also create a new branch with the name develop.



Now we will create the jobs on the jenkins dashboard.

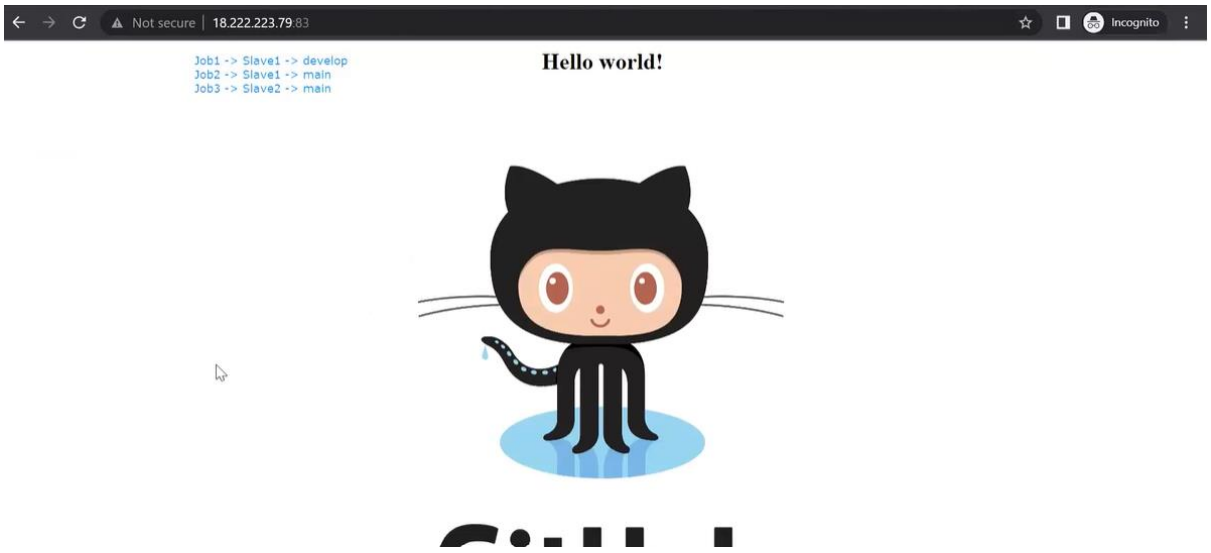
- Job1 = slave1-develop,job2=slave1-main,job3=slave2-main
- Click on newitem name it as job1 and select freesyle project click on next.
- Restrict where this project can be run checkbox
- Slave1 click on that
- Source code management select “git”
- Repo url :https://
- Branches to build : name of the branch “*/develop”
- Goto buildstep and select execute shell





After this again configure the file with the following command.

```
sudo docker rm -f c1
sudo docker build /home/ubuntu/home/ubuntu/jenkins/home/ubuntu/jenkins/workspace/job1/ -t job1
//name of the image
sudo docker run -itd -p 83:80 --name=c1 job1
```



Goto to build trigger and click on github hook trigger for GItSCM pollling

Now we will create webhook

- Goto to settings and webhooks click on add webhook put the url of the jenkins
- https://address/github-webhook/
- Refresh it
- Now if we make any changes to the repository the job1 will be automatically executed.
- Now we will not be able to add the sudo docker rm -f c1 command,

Now we will create the job2(slave1 machine, select the master branch) and job3(select the slave2 machine , select the master branch)