DAY-2

DEVOPS

STEP -1 :INSTALL DOCKER

1) sudo apt update

```
jeeva@Jeeva:~$ sudo apt update
[sudo] password for jeeva:
Ign:1 https://pkg.jenkins.io/debian-stable binary/ InRelease
Hit:2 https://pkg.jenkins.io/debian-stable binary/ Release
Hit:3 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:5 http://archive.ubuntu.com/ubuntu noble InRelease
Get:6 http://archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB
Hit:7 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Fetched 126 kB in 3s (50.2 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
13 packages can be upgraded. Run 'apt list --upgradable' to see them.
```

2) sudo apt install -y docker.io

```
jeeva@Jeeva:~$ sudo apt install -y docker.io
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base iptables libip4tc2 libip6tc2 libnetfilter-conntrack3
  libnfnetlink0 libnftables1 libnftnl11 nftables pigz runc ubuntu-fan
Suggested packages:
  ifupdown aufs-tools btrfs-progs cgroupfs-mount | cgroup-lite debootstrap docker-buildx docker-compose-v2 docker-doc
  rinse zfs-fuse | zfsutils firewalld
The following NEW packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base docker.io iptables libip4tc2 libip6tc2 libnetfilter-conntrack3
  libnfnetlink0 libnftables1 libnftnl11 nftables pigz runc ubuntu-fan
0 upgraded, 16 newly installed, 0 to remove and 13 not upgraded.
Need to get 79.6 MB of archives.
After this operation, 306 MB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu noble/universe amd64 pigz amd64 2.8-1 [65.6 kB]
Get:2 http://archive.ubuntu.com/ubuntu noble/main amd64 libip4tc2 amd64 1.8.10-3ubuntu2 [23.3 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble/main amd64 libip6tc2 amd64 1.8.10-3ubuntu2 [23.7 kB]
Get:4 http://archive.ubuntu.com/ubuntu noble/main amd64 libnfnetlink0 amd64 1.0.2-2build1 [14.8 kB]
Get:5 http://archive.ubuntu.com/ubuntu noble/main amd64 libnetfilter-conntrack3 amd64 1.0.9-6build1 [45.2 kB]
Get:6 http://archive.ubuntu.com/ubuntu noble/main amd64 libnftnl11 amd64 1.2.6-2build1 [66.0 kB]
Get:7 http://archive.ubuntu.com/ubuntu noble/main amd64 iptables amd64 1.8.10-3ubuntu2 [381 kB]
Get:8 http://archive.ubuntu.com/ubuntu noble/main amd64 libnftables1 amd64 1.0.9-1build1 [358 kB]
Get:9 http://archive.ubuntu.com/ubuntu noble/main amd64 nftables amd64 1.0.9-1build1 [69.8 kB]
Get:10 http://archive.ubuntu.com/ubuntu noble/main amd64 bridge-utils amd64 1.7.1-1ubuntu2 [33.9 kB]
Get:11 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 runc amd64 1.1.12-0ubuntu3.1 [8599 kB]
```

STEP 2: ENABLE AND DISABLE

1) sudo systemctl enable docker

2)sudo systemctl start docker

```
jeeva@Jeeva:~$ sudo systemctl enable docker
jeeva@Jeeva:~$ sudo systemctl start docker
```

STEP 3:VERIFY THE INSTALLATION:

docker –version

```
jeeva@Jeeva:~$ docker --version
Docker version 26.1.3, build 26.1.3-0ubuntu1~24.04.1
```

STEP 4:INSTALL DOCKER COMPOSE

sudo curl -L "https://github.com/docker/compose/releases/latest/download/docker-compose-$(uname -s)-$(uname -m)" -o /usr/local/bin/docker-compose

```
jeeva@Jeeva:~$ sudo curl -L "https://github.com/docker/compose/releases/latest/download/docker-compose-$(uname -s)-$(una
me -m)" -o /usr/local/bin/docker-compose
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
  0     0    0     0    0     0      0      0 --:--:-- --:--:-- --:--:--     0
  0     0    0     0    0     0      0      0 --:--:-- --:--:-- --:--:--     0
100 71.4M  100 71.4M    0     0  3211k      0  0:00:22  0:00:22 --:--:-- 4038k
```

Give execution permission:

```
jeeva@Jeeva:~$ sudo chmod +x /usr/local/bin/docker-compose
```

VERIFY INSTALLATION

```
jeeva@Jeeva:~$ docker-compose --version
Docker Compose version v2.34.0
```

CREATE AN “HELLO WOLRD: APPLICATION

Create a project directory

```
jeeva@Jeeva:~$ mkdir ~/docker-python-app
jeeva@Jeeva:~$ cd ~/docker-python-app
```

Create the python Application File

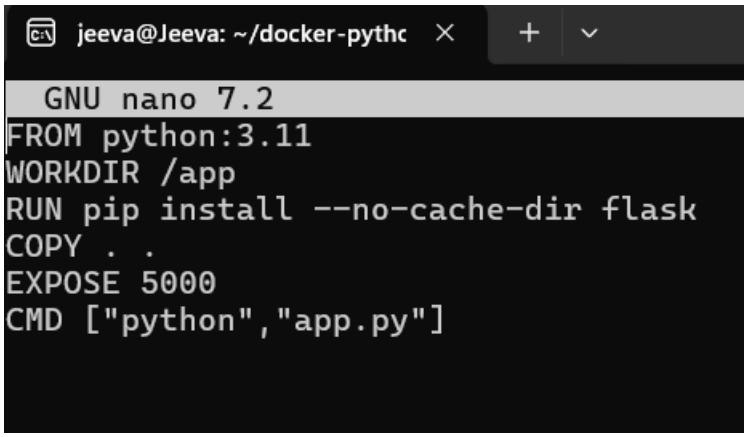
Create a file

```
jeeva@Jeeva:~/docker-python-app$ nano app.py
jeeva@Jeeva:~/docker-python-app$ cat app.py
from flask import Flask
app=Flask(__name__)
@app.route("/")
def hello():
        return "Hello,World!"
if __name__ == "__main__":
        app.run(host="0.0.0.0",port=5000)

jeeva@Jeeva:~/docker-python-app$ nano requirements.txt
```

IN REQUIREMENTS.TXT TERMINAL WILL BE OPEN TYPE flask AND SAVE THE FILE BY CTRL+X,YES,ENTER.

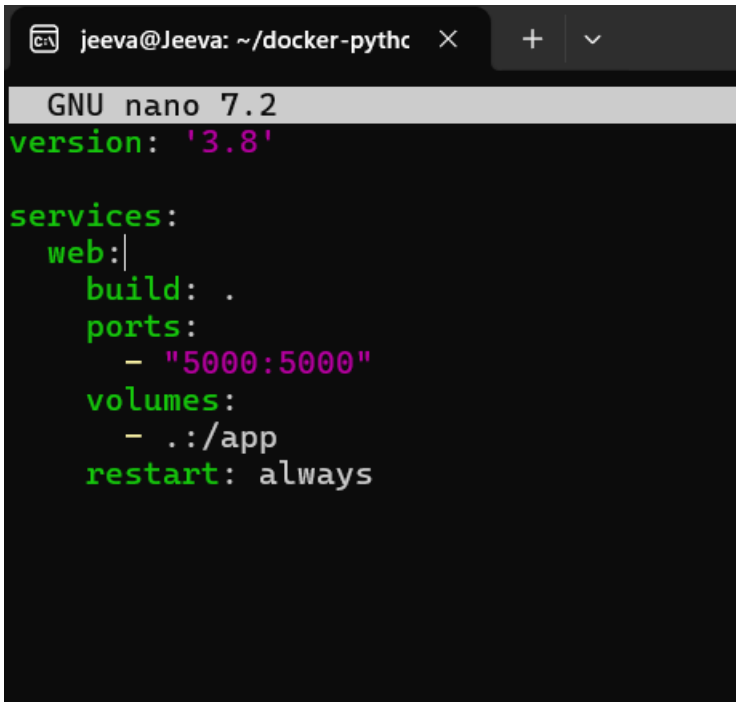
STEP -5 : CREATE A DOCKER FILE

```
jeeva@Jeeva:~/docker-python-app$ nano Dockerfile
```



CREATE A DOCKER COMPOSE

```
jeeva@Jeeva:~/docker-python-app$ nano docker-compose.yml
```

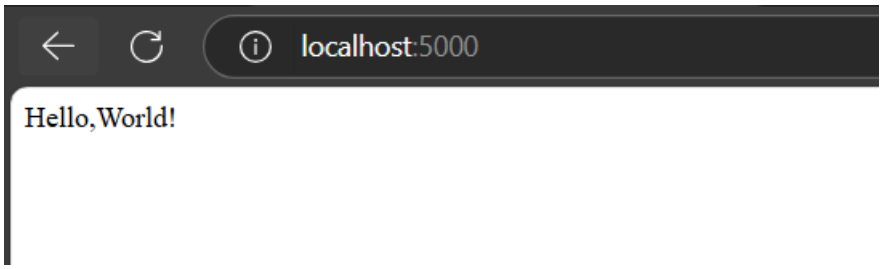


STEP 6:BUILD AND RUN THE DOCKER CONTAINER

```
jeeva@Jeeva:~/docker-python-app$ nano docker-compose.yml
jeeva@Jeeva:~/docker-python-app$ sudo docker-compose build
```

```
jeeva@Jeeva:~/docker-python-app$ sudo docker-compose up --build
```

OPEN THE LOCALHOST:5000 IT WILL DISPLAY OUTPUT OF CODE




```
jeeva@Jeeva:~/docker-python-app$ sudo docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES
jeeva@Jeeva:~/docker-python-app$ sudo docker ps -a
CONTAINER ID   IMAGE                  COMMAND           CREATED          STATUS                      PORTS     NAMES
c1c028722180   docker-python-app-web   "python app.py"   31 seconds ago   Exited (137) 8 seconds ago            docker-
python-app-web-1
```

STEP-7 CREATE A NEW REPO IN GITHUB

https://github.com/Jeeva-21BSR017/devops-sample.git

STEP-8 GO TO THE LINK https://github.com/settings/tokens/new

STEP-9 CLICK TOKEN CLASSIC AND GENERARTE TOKEN CLASSIC

STEP-10 IN GENERATE TOKEN CLASSIC GIVE THE NAME AND CLICK THE WORKFLOW AND ADMIN HOOK REPO

STEP-11 GENERATE TOKEN

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

STEP-12 START THE JENKINS

Username:admin

Password:b0e507d6b0f14097ba040a5e1dd67f6d

STEP-13 Create a new ITEM AND PIPELINE THEN CLICK THE PIPLELINE THEN PILELINE SCM THEN GIT

STEP-14 PASTE THE GITHUB LINK AND IN CREDITIONALS ADD OPTIONS THEN JENKIN.

STEP-15 PROVIDE GITHUB USERNAME AND GENERATED TOKEN PASSWORD IN PASSWORD THEN GIVE THE ID AS YOUR PREFERENCE AFTER COMPLETING CLICK ADD

STEP-16 TO PUSH INTO GITHUB

1)Clone

```
jeeva@Jeeva:~$ git clone https://github.com/Jeeva-21BSR017/devops-sample.git
Cloning into 'devops-sample'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (3/3), done.
```

2)check file

```
jeeva@Jeeva:~$ ls
devops-sample  docker-python-app
jeeva@Jeeva:~$ cd docker-python-app
jeeva@Jeeva:~/docker-python-app$ ls
Dockerfile  app.py  docker-compose.yml  requirements.txt
```

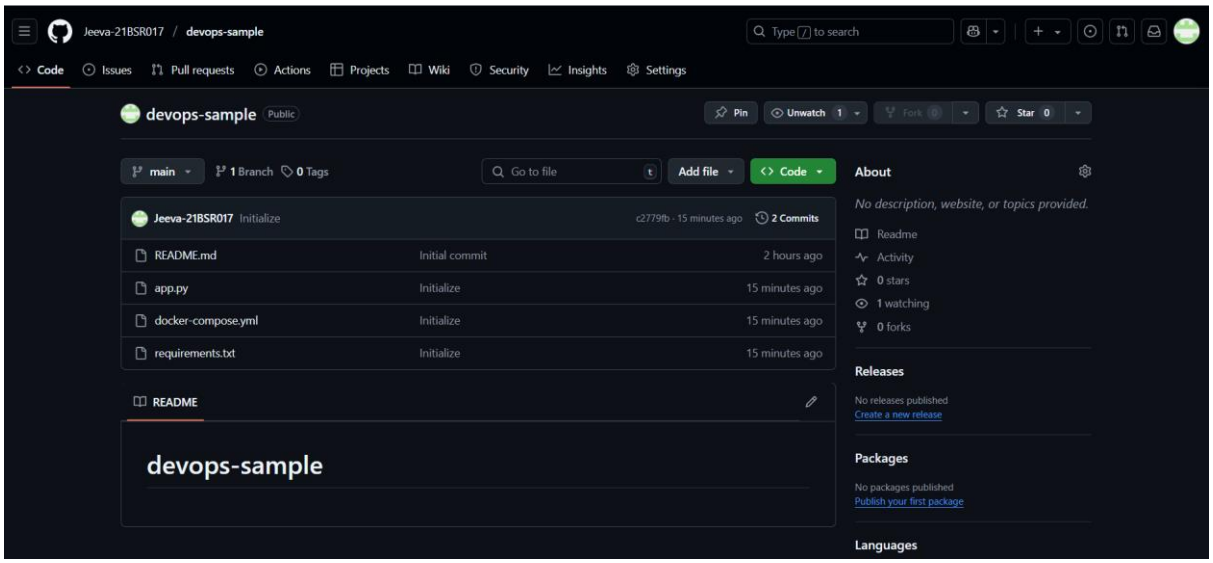
```
jeeva@Jeeva:~/docker-python-app$ mv app.py docker-compose.yml requirements.txt ../devops-sample/
jeeva@Jeeva:~/docker-python-app$ cd ..
jeeva@Jeeva:~$ ls
devops-sample  docker-python-app
```

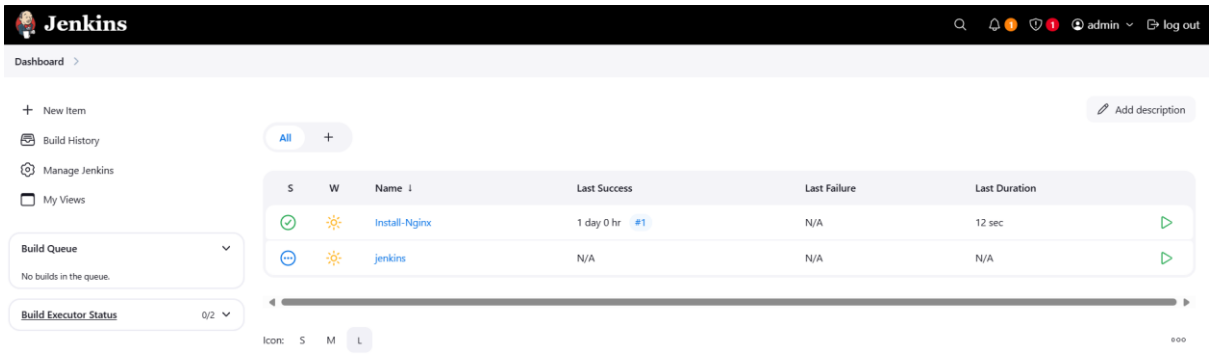
3)Add to the repository

```
jeeva@Jeeva:~$ cd devops-sample
jeeva@Jeeva:~/devops-sample$ git add .
jeeva@Jeeva:~/devops-sample$ git commit -m "Initialize"
Author identity unknown

*** Please tell me who you are.

Run

  git config --global user.email "you@example.com"
  git config --global user.name "Your Name"

to set your account's default identity.
Omit --global to set the identity only in this repository.

fatal: empty ident name (for <jeeva@Jeeva.>) not allowed
jeeva@Jeeva:~/devops-sample$ git config --global user.email "jeevaa.21bsr@kongu.edu"
jeeva@Jeeva:~/devops-sample$ git config --global user.name "Jeeva-21BSR017"
jeeva@Jeeva:~/devops-sample$ git commit -m "Initialize"
[main c2779fb] Initialize
 3 files changed, 19 insertions(+)
 create mode 100644 app.py
 create mode 100644 docker-compose.yml
 create mode 100644 requirements.txt
```

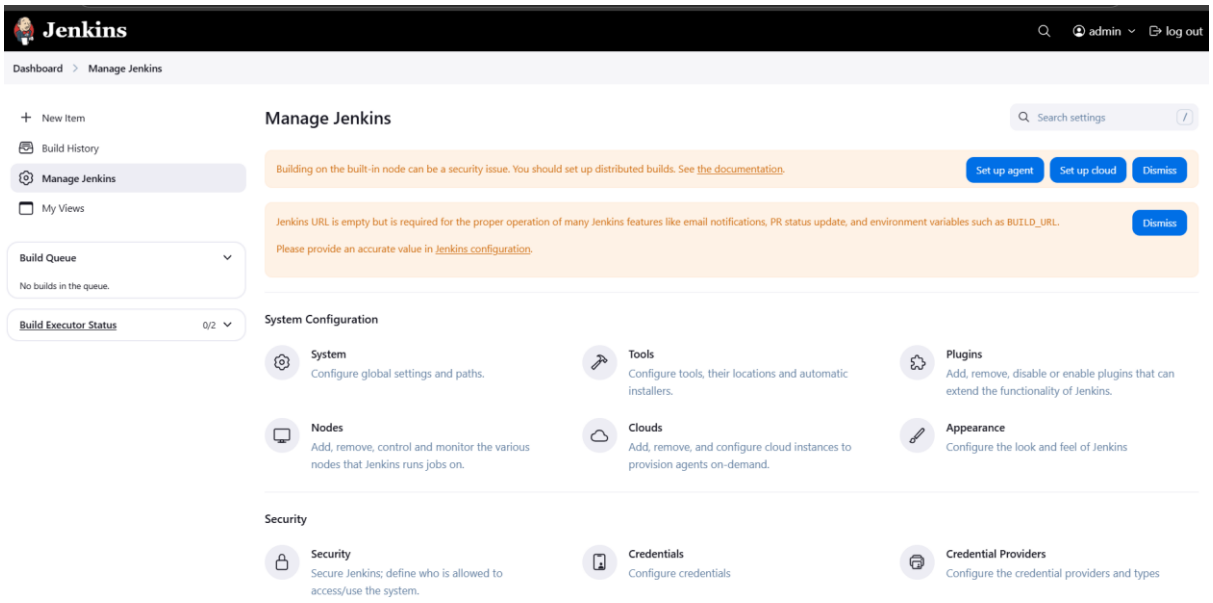
```
jeeva@Jeeva:~/devops-sample$ git push https://Jeeva-21BSR017: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@github.com/Jeeva-21BSR017/devops-sample.git
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 12 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (5/5), 612 bytes | 612.00 KiB/s, done.
Total 5 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/Jeeva-21BSR017/devops-sample.git
   dd86655..c2779fb  main -> main
```

STEP-17 Open docker image app.docker.com

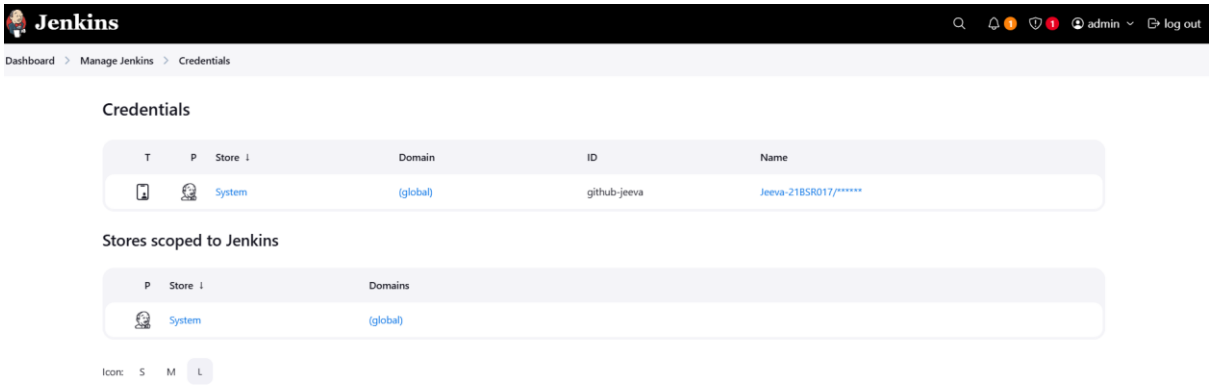




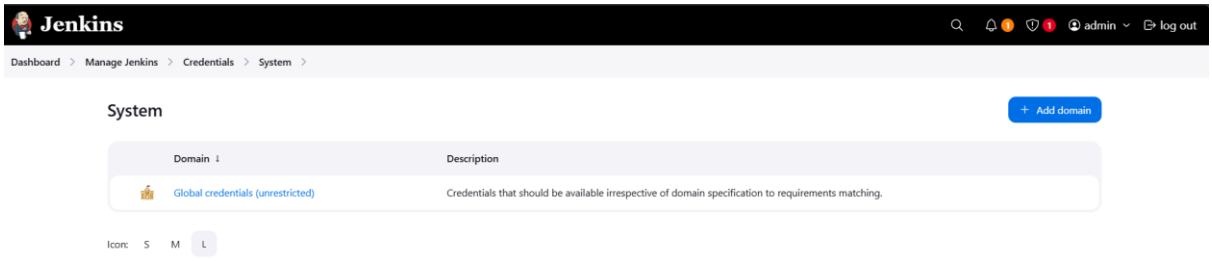
STEP-18 OPEN MANAGE JENKINS



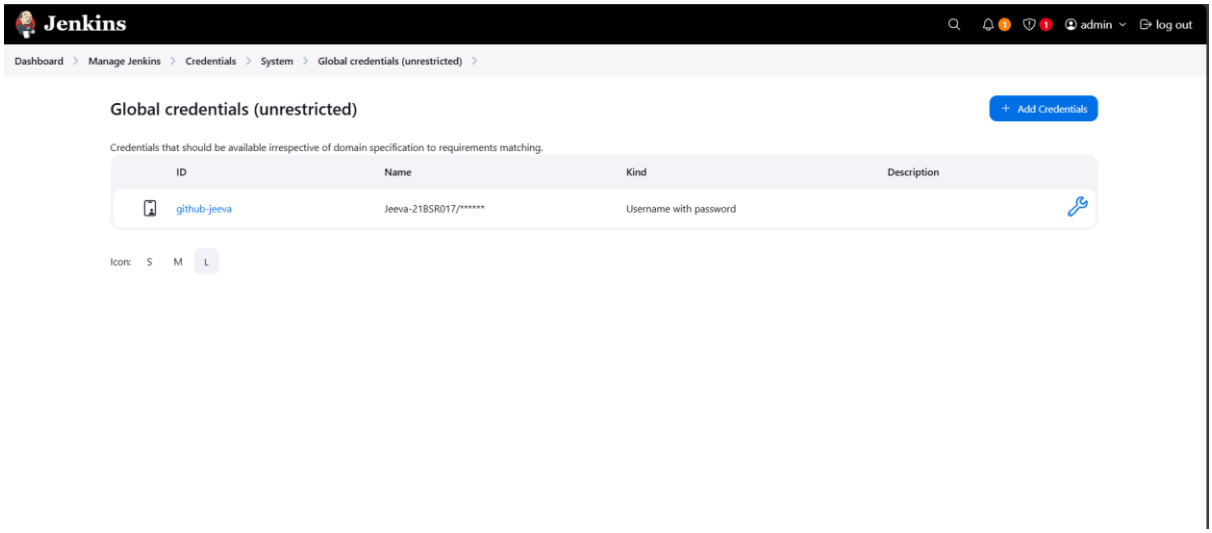
STEP-19 OPEN CREDENTIALS



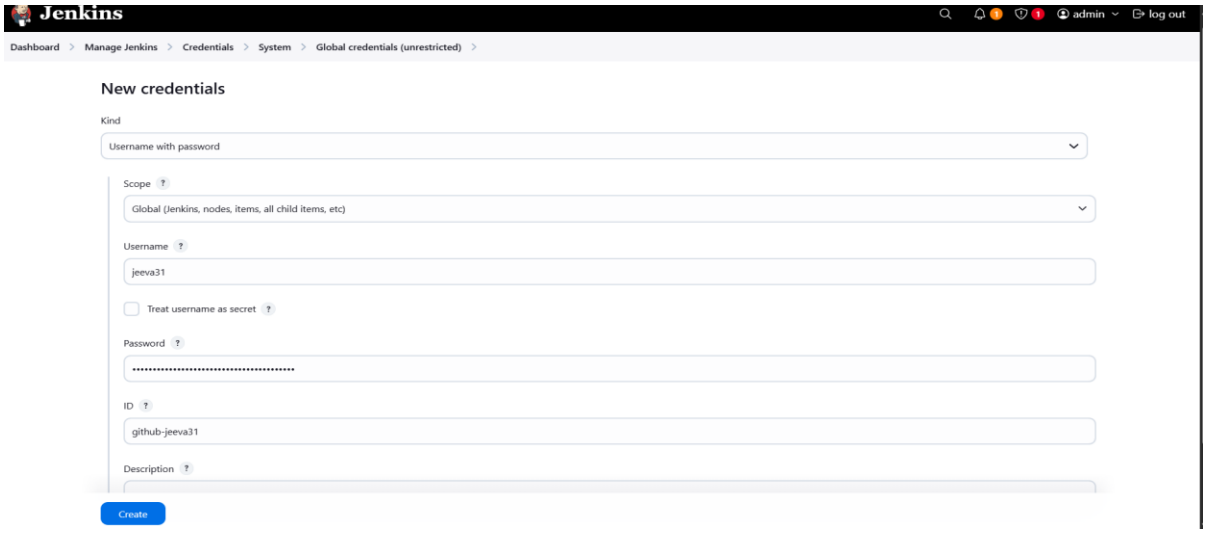
STEP-20 OPEN SYSTEM



STEP-21 OPEN MANAGE JENKINS

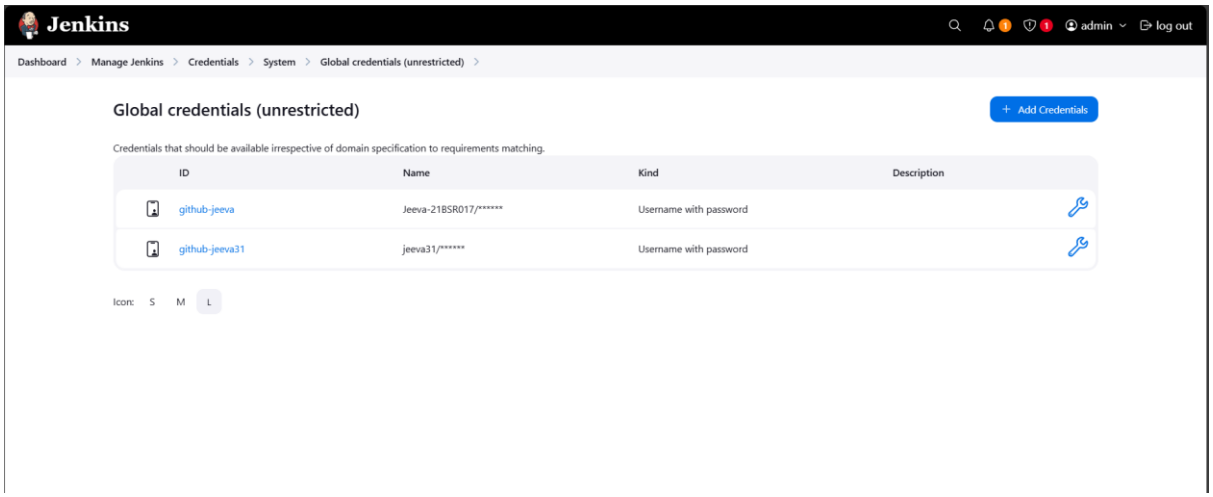


STEP-22 OPEN GLOBAL CREDENTIALS



STEP-23 OPEN MANAGE JENKINS

=>IT DISPLAYS THE GITHUB CREDENTIALS ID AND DOCKER CREDENTIALS ID



STEP 24:OPEN UBUNTU AND CREATE nano Jenkinsfile

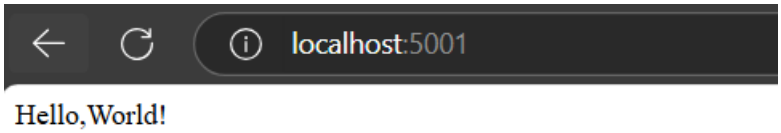
STEP 25:

```
                if [ "$(docker ps -aq -f name=$CONTAINER_NAME)" ]; then
                    docker stop $CONTAINER_NAME || true
                    docker rm $CONTAINER_NAME || true
                fi
                '''
            }
        }
    }


    stage('Run Docker Container') {
        steps {
            sh 'docker run -d -p 5001:5000 --name $CONTAINER_NAME
$DOCKER_IMAGE'
        }
    }
}
```

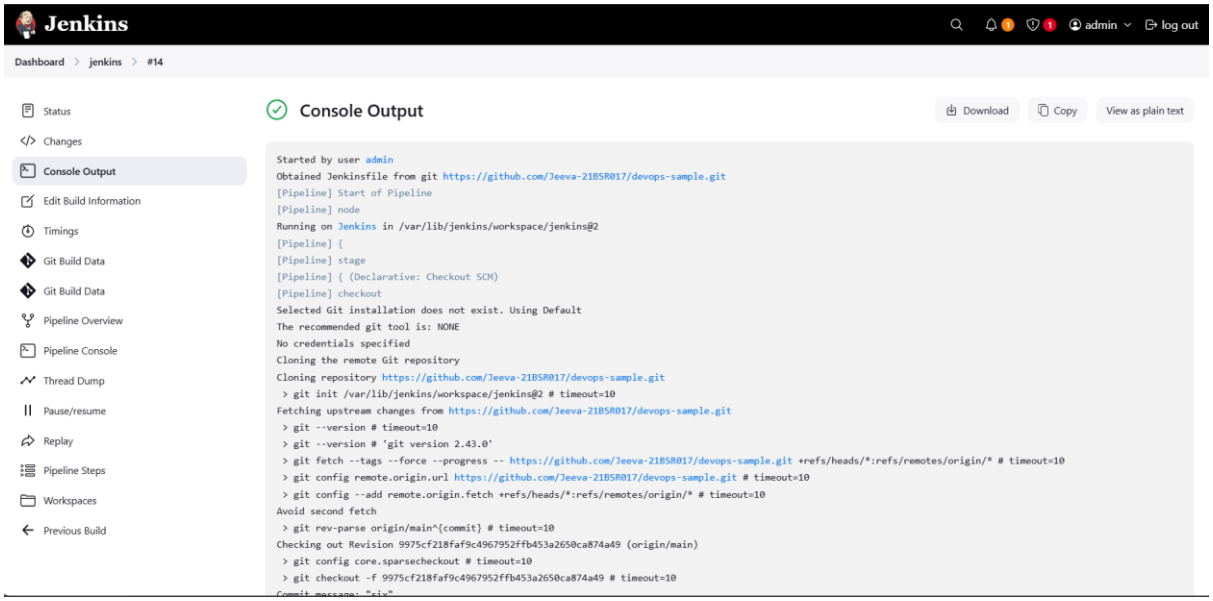
```
    post {
        success {
            echo "Build, push, and container execution successful!"
        }
        failure {
            echo "Build or container execution failed."
        }
    }
}
```

STEP 26:IN JENKINS BUILD NOW THE Jenkins

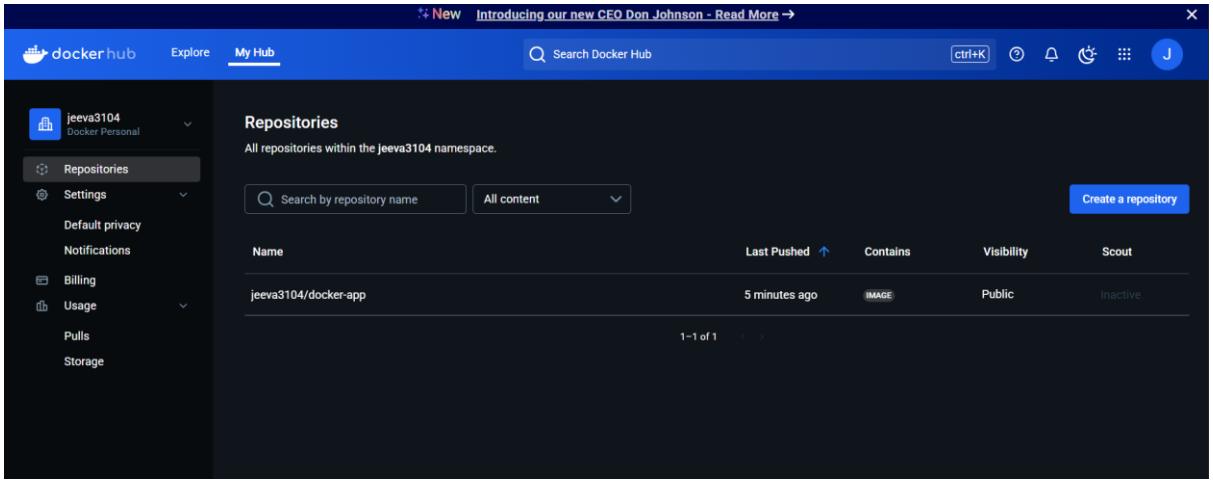
STEP 27:IN LOCALHOST:5001 IT DISPLAYS THE OUTPUT.

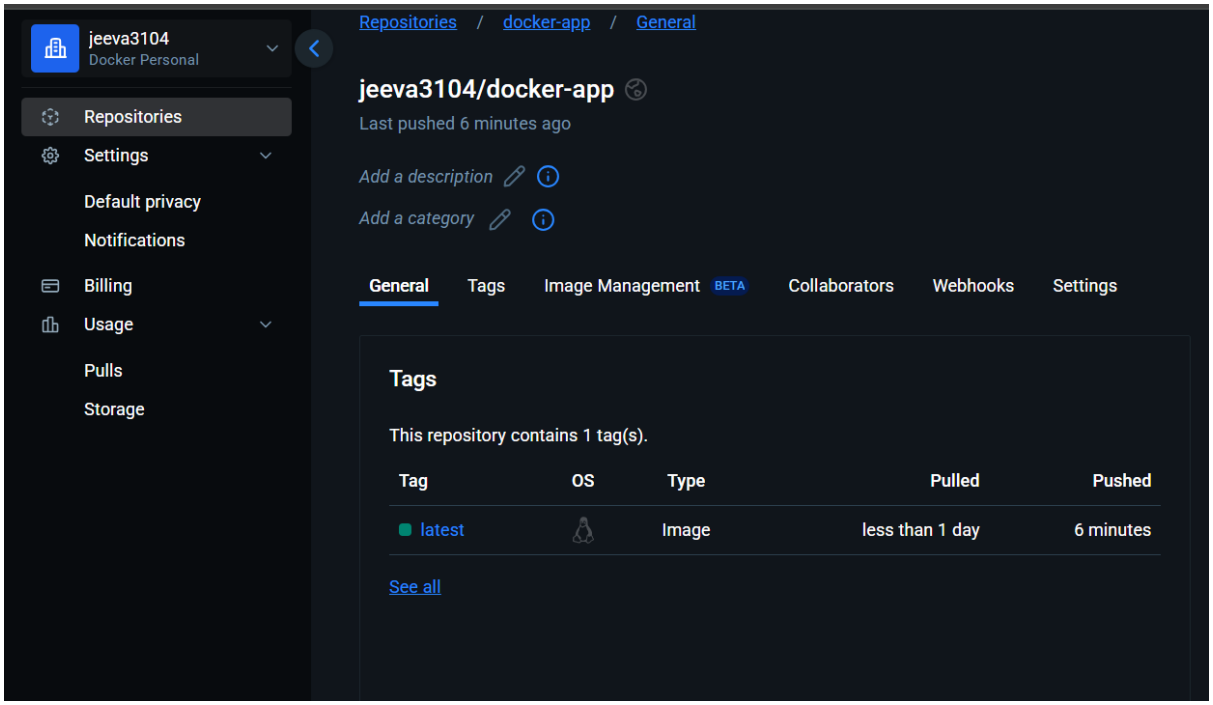


Hello,World!



STEP-28 : IN DOCKERHUB THE PROCESS ARE TO DONE AND THEN THE LINUX IMAGE HAS TO BE DISPLAY.




jeeva3104
Docker Personal
Repositories
Settings
Default privacy
Notifications
Billing
Usage
Pulls
Storage
Repositories / docker-app / General
jeeva3104/docker-app
Last pushed 6 minutes ago
Add a description
Add a category
General
Tags
Image Management BETA
Collaborators
Webhooks
Settings
Tags
This repository contains 1 tag(s).
Tag
OS
Type
Pulled
Pushed
latest
Image
less than 1 day
6 minutes
See all