Question1 :

You are provided with a ReactJS application and it can be found on the repository with the link provided below.
Create a Dockerfile for this React application and also create image and run the image as container and the output of the ReactJS application should be shown on the localhost.

Link to github :https://github.com/snehal-herovired/sample_react_aditya_devops

Provide the screenshots of each process from creating the image and running the container using appropriate commands

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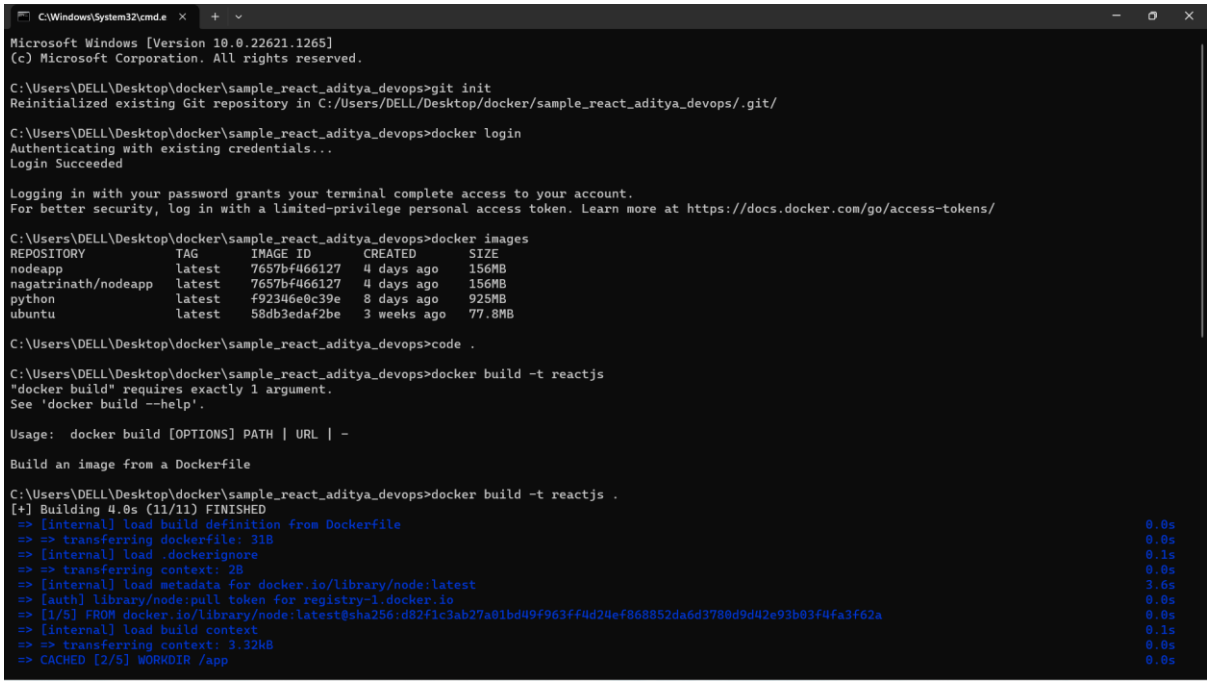
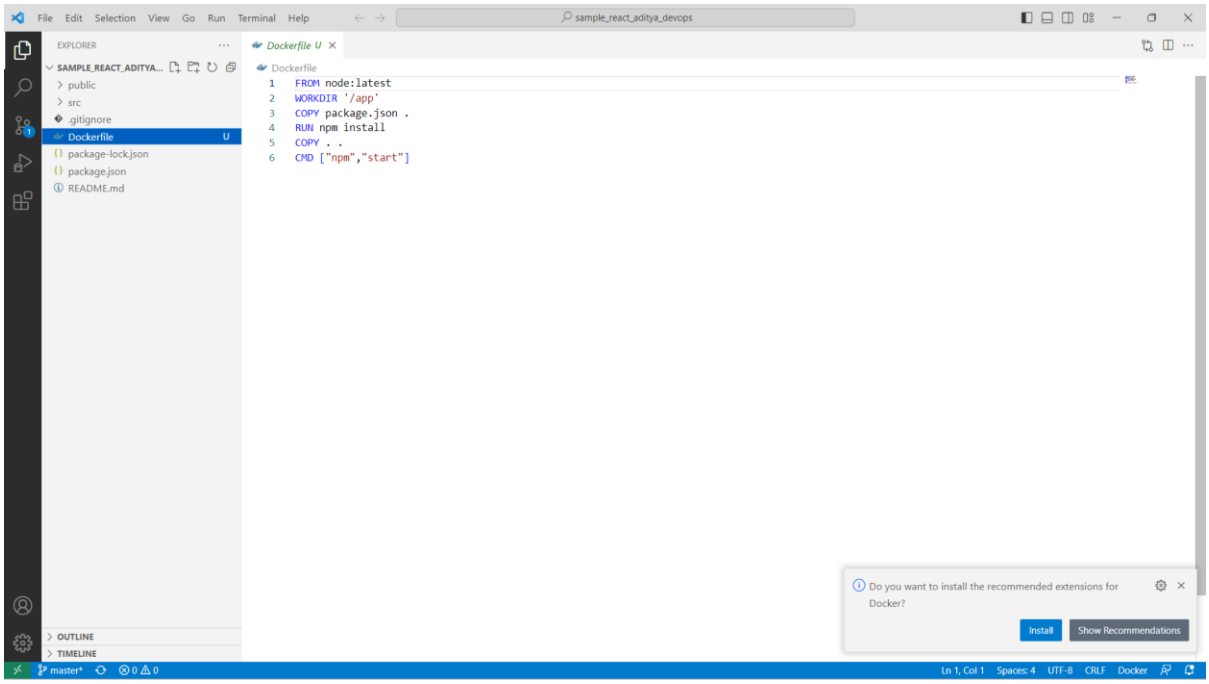
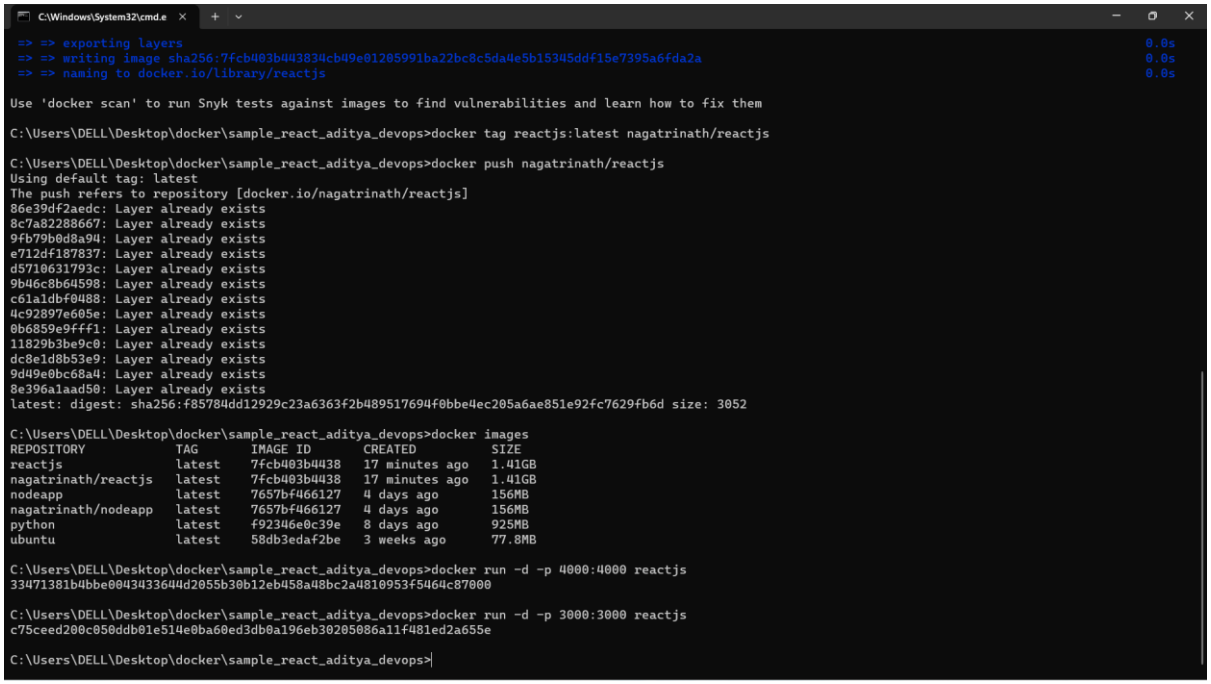
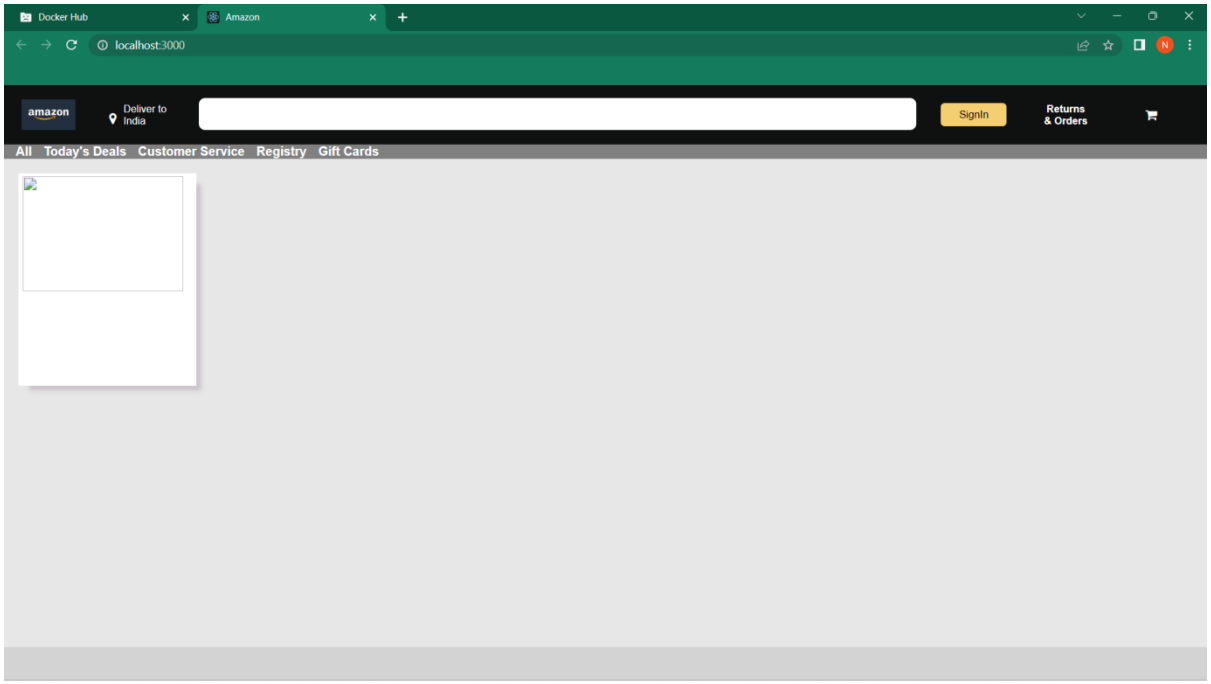



File Edit Selection View Go Run Terminal Help
sample_react_aditya_devops
EXPLORER
SAMPLE_REACT_ADITYA...
public
src
.gitignore
Dockerfile U
package-lock.json
package.json
README.md
Dockerfile U
Dockerfile
1 FROM node:latest
2 WORKDIR '/app'
3 COPY package.json .
4 RUN npm install
5 COPY . .
6 CMD ["npm","start"]
OUTLINE
TIMELINE
Do you want to install the recommended extensions for Docker?
Install
Show Recommendations
master*
Ln 1, Col 1
Spaces: 4
UTF-8
CRLF
Docker


C:\Windows\System32\cmd.e
=> => exporting layers 0.0s
=> => writing image sha256:7fcb403b443834cb49e01205991ba22bc8c5da4e5b15345ddf15e7395a6fda2a 0.0s
=> => naming to docker.io/library/reactjs 0.0s
Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them
C:\Users\DELL\Desktop\docker\sample_react_aditya_devops>docker tag reactjs:latest nagatrinath/reactjs
C:\Users\DELL\Desktop\docker\sample_react_aditya_devops>docker push nagatrinath/reactjs
Using default tag: latest
The push refers to repository [docker.io/nagatrinath/reactjs]
86e39df2aedc: Layer already exists
8c7a82288667: Layer already exists
9fb79b0d8a94: Layer already exists
e712df187837: Layer already exists
d5710631793c: Layer already exists
9b46c8b64598: Layer already exists
c61a1dbf0488: Layer already exists
4c92897e605e: Layer already exists
0b6859e9fff1: Layer already exists
11829b3be9c0: Layer already exists
dc8e1d8b53e9: Layer already exists
9d49e0bc68a4: Layer already exists
8e396a1aad50: Layer already exists
latest: digest: sha256:f85784dd12929c23a6363f2b489517694f0bbe4ec205a6ae851e92fc7629fb6d size: 3052
C:\Users\DELL\Desktop\docker\sample_react_aditya_devops>docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
reactjs latest 7fcb403b4438 17 minutes ago 1.41GB
nagatrinath/reactjs latest 7fcb403b4438 17 minutes ago 1.41GB
nodeapp latest 7657bf466127 4 days ago 156MB
nagatrinath/nodeapp latest 7657bf466127 4 days ago 156MB
python latest f92346e0c39e 8 days ago 925MB
ubuntu latest 58db3edaf2be 3 weeks ago 77.8MB
C:\Users\DELL\Desktop\docker\sample_react_aditya_devops>docker run -d -p 4000:4000 reactjs
33471381b4bbe0043433644d2055b30b12eb458a48bc2a4810953f5464c87000
C:\Users\DELL\Desktop\docker\sample_react_aditya_devops>docker run -d -p 3000:3000 reactjs
c75ceed200c050ddb01e514e0ba60ed3db0a196eb30205086a11f481ed2a655e
C:\Users\DELL\Desktop\docker\sample_react_aditya_devops>



Question 2:

Describe the CI-CD pipeline and also describe the role of jenkins here.
You have to create a manual ci-cd pipeline through bash script and cron jobs for a nodejs simple application.
For the Node JS application you can have the same application provided to you on the repository here : https://github.com/snehal-herovired/LearningGIt.

Please provide the screenshot of steps followed and upload it on Github and share the link on VLearn.

CI-CD PIPELINE:

CI-CD stands for Continuous integration/continuous deployment which is a software engineering practice that helps teams to collaborate better and improve their overall software.

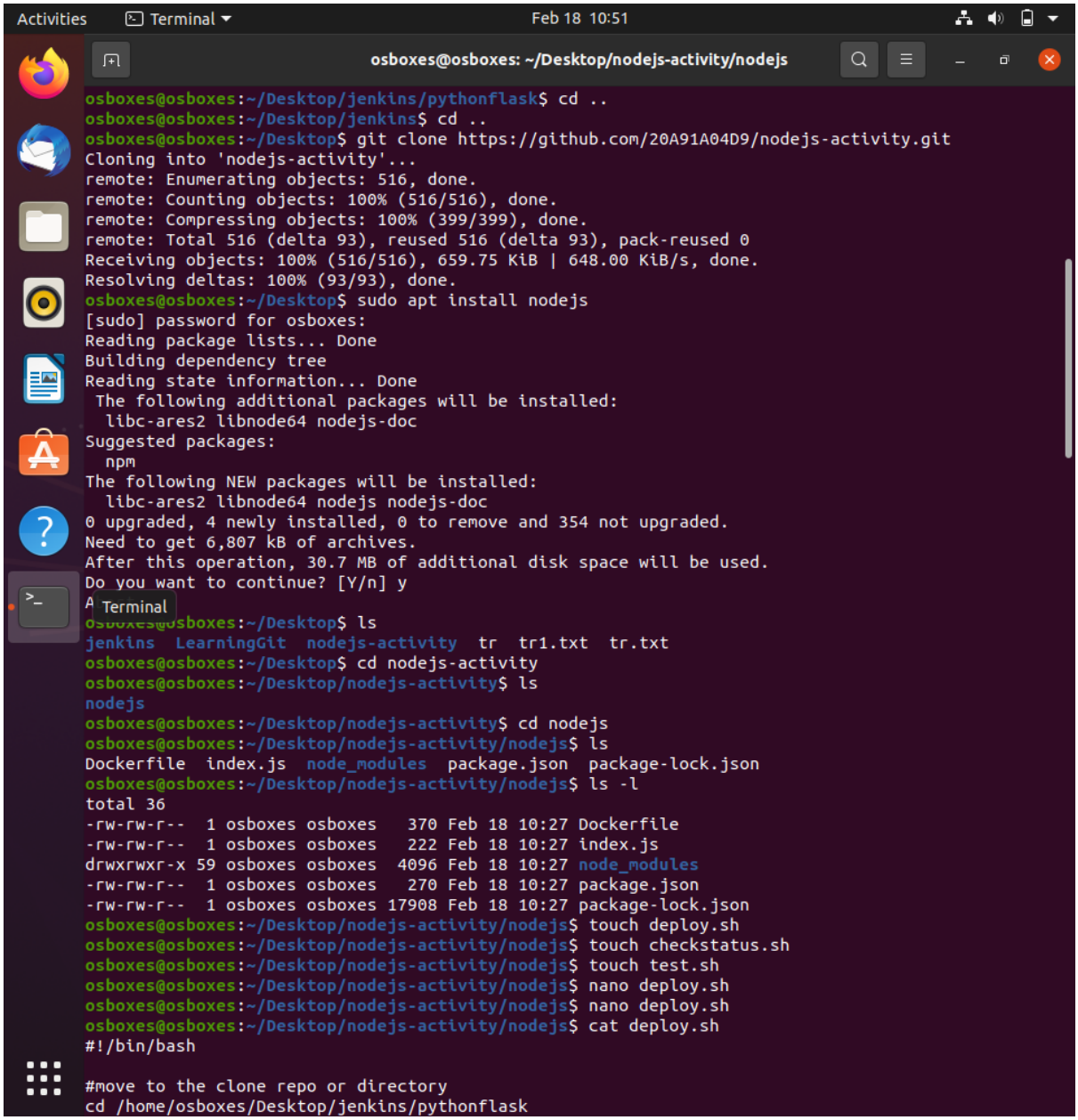
A continuous integration and continuous deployment (CI/CD) pipeline is a series of steps that must be performed in order to deliver a new version of software. CI/CD pipelines are a practice focused on improving software delivery throughout the software development life cycle via automation.

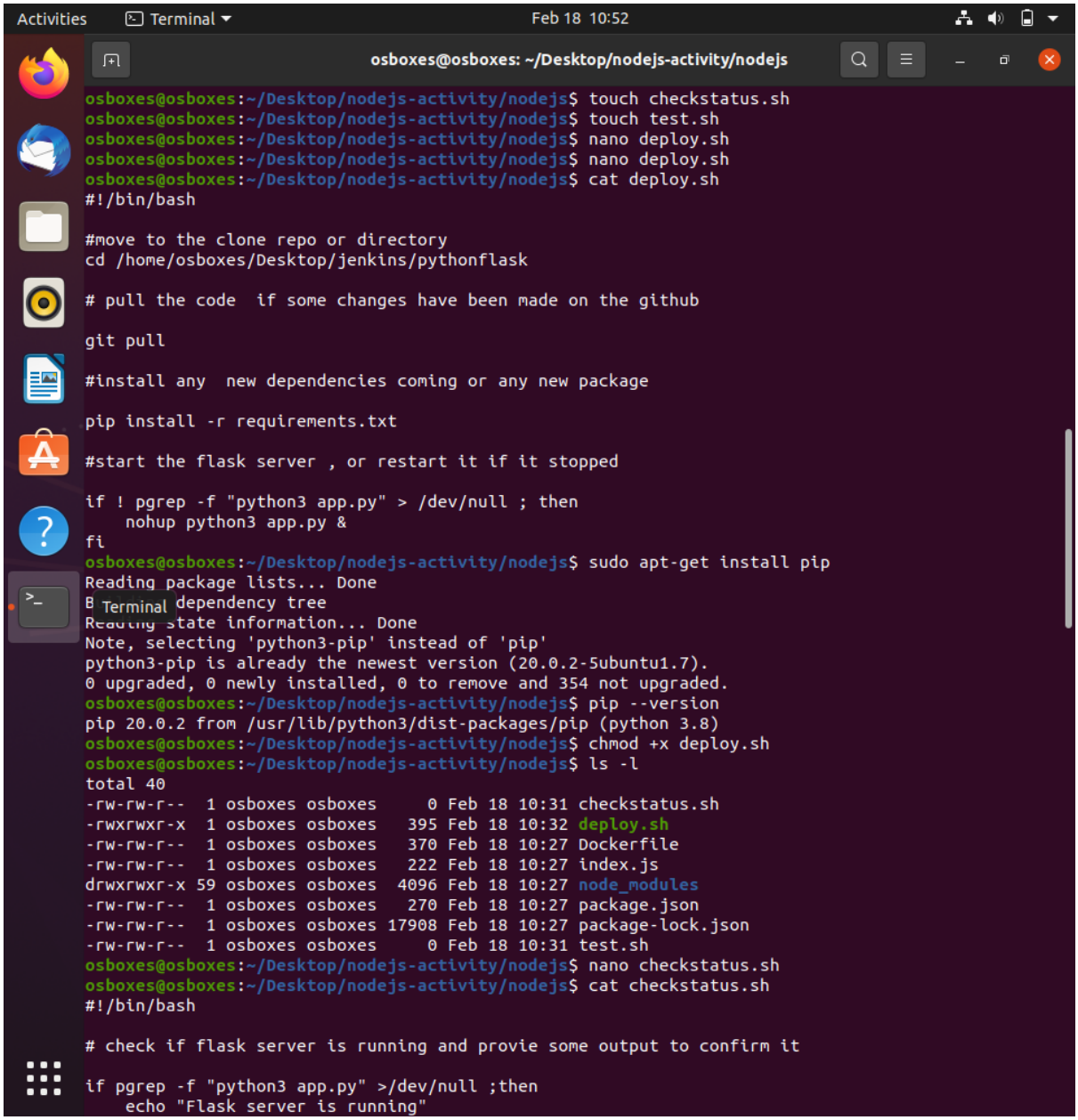
Typically building a CI/CD pipeline consists of the following phases/stages.
Code: Checked into the repository.
Build: Build is triggered and deployed in a test environment.
Test: Automated tests are executed.
Deploy: Code is deployed to stage, and production environments.

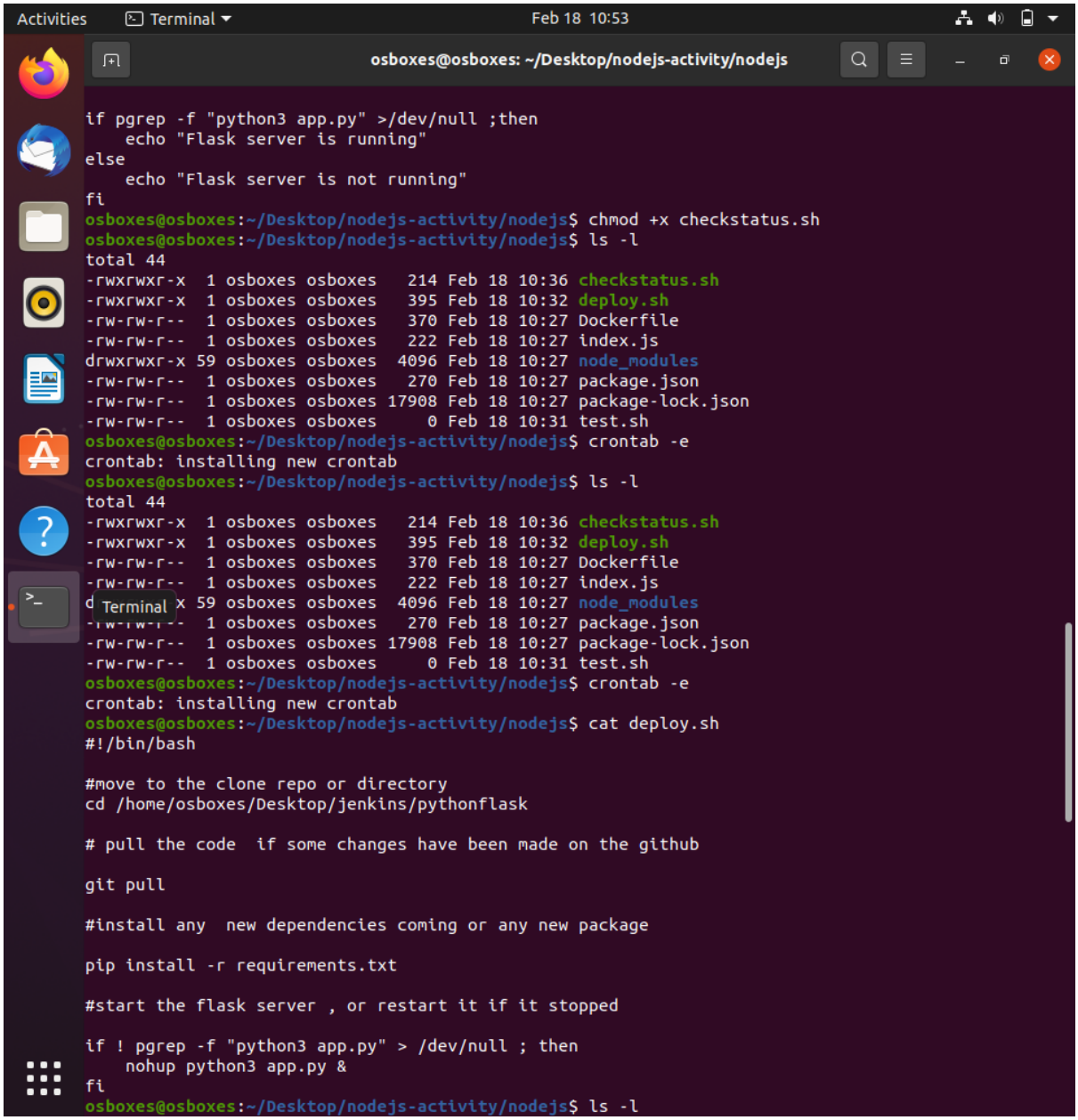
ROLE OF JENKINS:

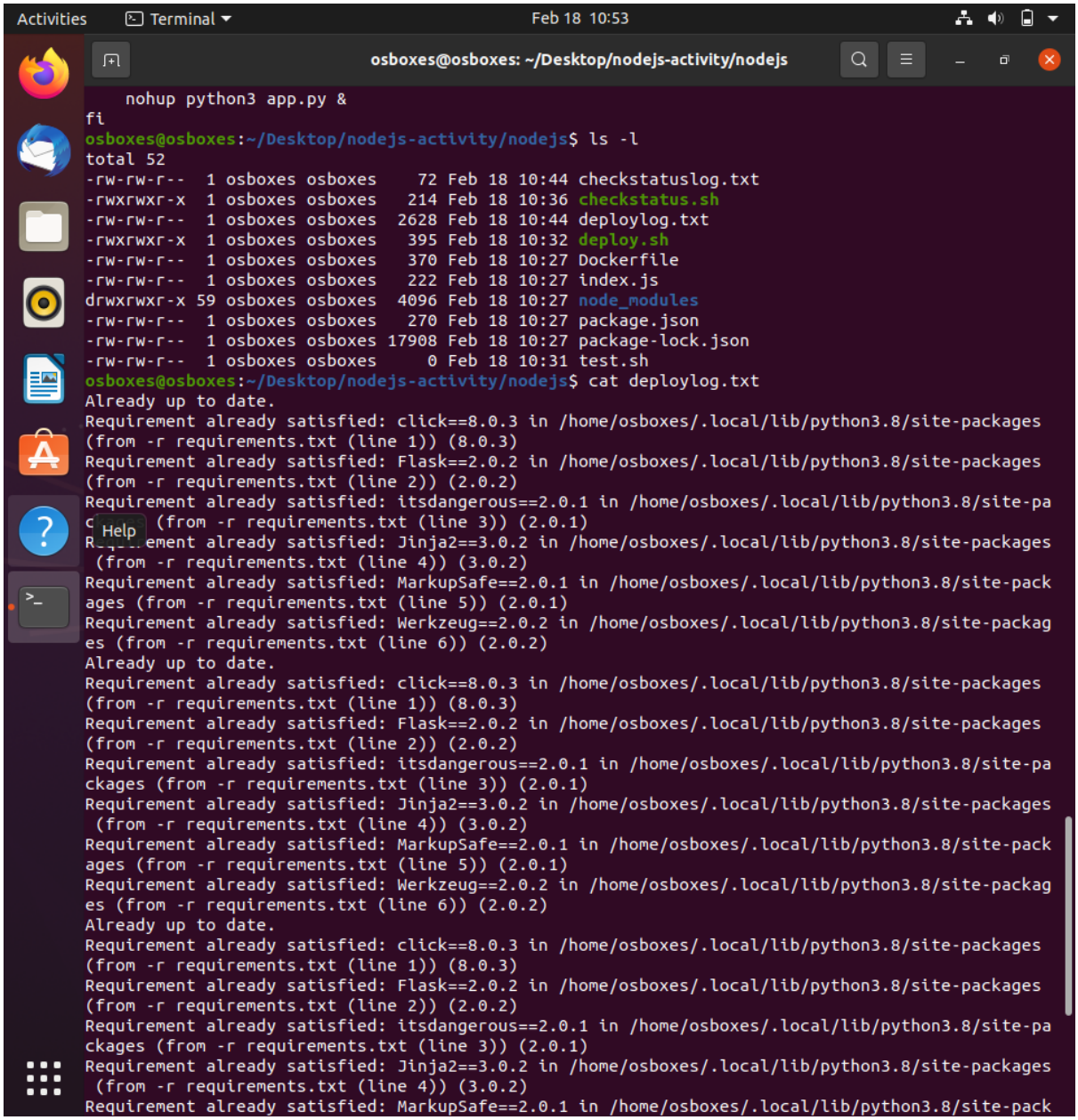
Jenkins is an open-source free automation tool used to build and test software projects. The tool makes it painless for developers to integrate changes to the project. Jenkins' primary focus is to keep track of the version control system and initiate and monitor a build system if there are any changes.

Jenkins is used to build and test your product continuously, so developers can continuously integrate changes into the build. Jenkins is the most popular open source CI/CD tool on the market today and is used in support of DevOps, alongside other cloud native tools.




Activities
Terminal
Feb 18 10:52
osboxes@osboxes: ~/Desktop/nodejs-activity/nodejs
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$ touch checkstatus.sh
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$ touch test.sh
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$ nano deploy.sh
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$ nano deploy.sh
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$ cat deploy.sh
#!/bin/bash
#move to the clone repo or directory
cd /home/osboxes/Desktop/jenkins/pythonflask
pull the code if some changes have been made on the github
git pull
#install any new dependencies coming or any new package
pip install -r requirements.txt
#start the flask server , or restart it if it stopped
if ! pgrep -f "python3 app.py" > /dev/null ; then
nohup python3 app.py &
fi
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$ sudo apt-get install pip
Reading package lists... Done
dependency tree
state information... Done
Note, selecting 'python3-pip' instead of 'pip'
python3-pip is already the newest version (20.0.2-5ubuntu1.7).
0 upgraded, 0 newly installed, 0 to remove and 354 not upgraded.
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$ pip --version
pip 20.0.2 from /usr/lib/python3/dist-packages/pip (python 3.8)
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$ chmod +x deploy.sh
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$ ls -l
total 40
-rw-rw-r-- 1 osboxes osboxes 0 Feb 18 10:31 checkstatus.sh
-rwxrwxr-x 1 osboxes osboxes 395 Feb 18 10:32 deploy.sh
-rw-rw-r-- 1 osboxes osboxes 370 Feb 18 10:27 Dockerfile
-rw-rw-r-- 1 osboxes osboxes 222 Feb 18 10:27 index.js
drwxrwxr-x 59 osboxes osboxes 4096 Feb 18 10:27 node_modules
-rw-rw-r-- 1 osboxes osboxes 270 Feb 18 10:27 package.json
-rw-rw-r-- 1 osboxes osboxes 17908 Feb 18 10:27 package-lock.json
-rw-rw-r-- 1 osboxes osboxes 0 Feb 18 10:31 test.sh
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$ nano checkstatus.sh
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$ cat checkstatus.sh
#!/bin/bash
check if flask server is running and provie some output to confirm it
if pgrep -f "python3 app.py" >/dev/null ;then
echo "Flask server is running"
Terminal


Activities
Terminal
Feb 18 10:53
osboxes@osboxes: ~/Desktop/nodejs-activity/nodejs
Terminal
if pgrep -f "python3 app.py" >/dev/null ;then
echo "Flask server is running"
else
echo "Flask server is not running"
fi
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$ chmod +x checkstatus.sh
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$ ls -l
total 44
-rwxrwxr-x 1 osboxes osboxes 214 Feb 18 10:36 checkstatus.sh
-rwxrwxr-x 1 osboxes osboxes 395 Feb 18 10:32 deploy.sh
-rw-rw-r-- 1 osboxes osboxes 370 Feb 18 10:27 Dockerfile
-rw-rw-r-- 1 osboxes osboxes 222 Feb 18 10:27 index.js
drwxrwxr-x 59 osboxes osboxes 4096 Feb 18 10:27 node_modules
-rw-rw-r-- 1 osboxes osboxes 270 Feb 18 10:27 package.json
-rw-rw-r-- 1 osboxes osboxes 17908 Feb 18 10:27 package-lock.json
-rw-rw-r-- 1 osboxes osboxes 0 Feb 18 10:31 test.sh
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$ crontab -e
crontab: installing new crontab
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$ ls -l
total 44
-rwxrwxr-x 1 osboxes osboxes 214 Feb 18 10:36 checkstatus.sh
-rwxrwxr-x 1 osboxes osboxes 395 Feb 18 10:32 deploy.sh
-rw-rw-r-- 1 osboxes osboxes 370 Feb 18 10:27 Dockerfile
-rw-rw-r-- 1 osboxes osboxes 222 Feb 18 10:27 index.js
x 59 osboxes osboxes 4096 Feb 18 10:27 node_modules
1 osboxes osboxes 270 Feb 18 10:27 package.json
-rw-rw-r-- 1 osboxes osboxes 17908 Feb 18 10:27 package-lock.json
-rw-rw-r-- 1 osboxes osboxes 0 Feb 18 10:31 test.sh
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$ crontab -e
crontab: installing new crontab
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$ cat deploy.sh
#!/bin/bash
#move to the clone repo or directory
cd /home/osboxes/Desktop/jenkins/pythonflask
pull the code if some changes have been made on the github
git pull
#install any new dependencies coming or any new package
pip install -r requirements.txt
#start the flask server , or restart it if it stopped
if ! pgrep -f "python3 app.py" > /dev/null ; then
nohup python3 app.py &
fi
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$ ls -l




```
    nohup python3 app.py &
fi
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$ ls -l
total 52
-rw-rw-r--  1 osboxes osboxes    72 Feb 18 10:44 checkstatuslog.txt
-rwxrwxr-x  1 osboxes osboxes   214 Feb 18 10:36 checkstatus.sh
-rw-rw-r--  1 osboxes osboxes  2628 Feb 18 10:44 deploylog.txt
-rwxrwxr-x  1 osboxes osboxes   395 Feb 18 10:32 deploy.sh
-rw-rw-r--  1 osboxes osboxes   370 Feb 18 10:27 Dockerfile
-rw-rw-r--  1 osboxes osboxes   222 Feb 18 10:27 index.js
drwxrwxr-x 59 osboxes osboxes  4096 Feb 18 10:27 node_modules
-rw-rw-r--  1 osboxes osboxes   270 Feb 18 10:27 package.json
-rw-rw-r--  1 osboxes osboxes 17908 Feb 18 10:27 package-lock.json
-rw-rw-r--  1 osboxes osboxes     0 Feb 18 10:31 test.sh
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$ cat deploylog.txt
Already up to date.
Requirement already satisfied: click==8.0.3 in /home/osboxes/.local/lib/python3.8/site-packages
(from -r requirements.txt (line 1)) (8.0.3)
Requirement already satisfied: Flask==2.0.2 in /home/osboxes/.local/lib/python3.8/site-packages
(from -r requirements.txt (line 2)) (2.0.2)
Requirement already satisfied: itsdangerous==2.0.1 in /home/osboxes/.local/lib/python3.8/site-pa
ckages (from -r requirements.txt (line 3)) (2.0.1)
Requirement already satisfied: Jinja2==3.0.2 in /home/osboxes/.local/lib/python3.8/site-packages
 (from -r requirements.txt (line 4)) (3.0.2)
Requirement already satisfied: MarkupSafe==2.0.1 in /home/osboxes/.local/lib/python3.8/site-pack
ages (from -r requirements.txt (line 5)) (2.0.1)
Requirement already satisfied: Werkzeug==2.0.2 in /home/osboxes/.local/lib/python3.8/site-packag
es (from -r requirements.txt (line 6)) (2.0.2)
Already up to date.
Requirement already satisfied: click==8.0.3 in /home/osboxes/.local/lib/python3.8/site-packages
(from -r requirements.txt (line 1)) (8.0.3)
Requirement already satisfied: Flask==2.0.2 in /home/osboxes/.local/lib/python3.8/site-packages
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 (from -r requirements.txt (line 4)) (3.0.2)
Requirement already satisfied: MarkupSafe==2.0.1 in /home/osboxes/.local/lib/python3.8/site-pack
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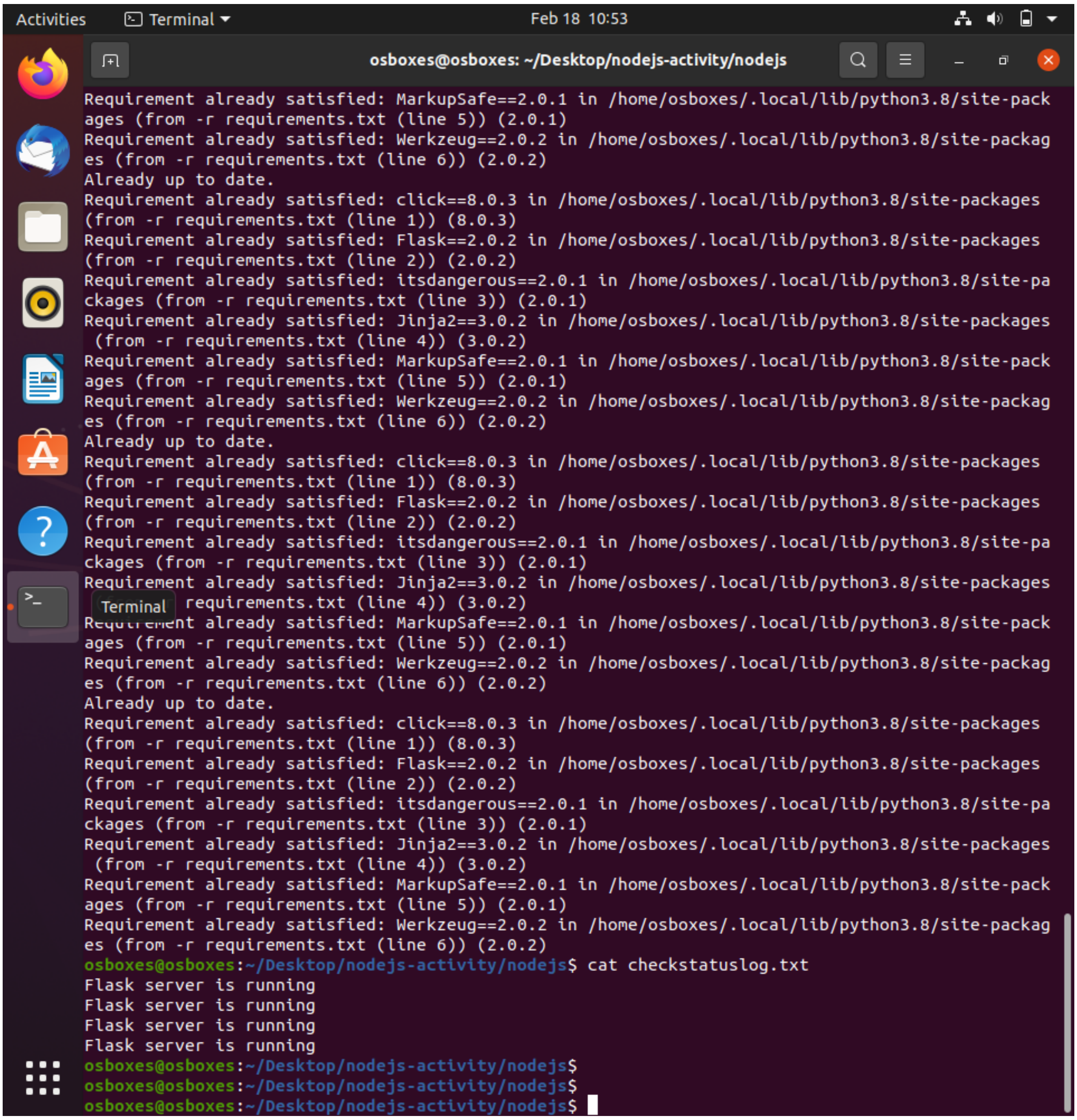
Activities
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Feb 18 10:53
osboxes@osboxes: ~/Desktop/nodejs-activity/nodejs
Requirement already satisfied: MarkupSafe==2.0.1 in /home/osboxes/.local/lib/python3.8/site-packages (from -r requirements.txt (line 5)) (2.0.1)
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Requirement already satisfied: itsdangerous==2.0.1 in /home/osboxes/.local/lib/python3.8/site-packages (from -r requirements.txt (line 3)) (2.0.1)
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Requirement already satisfied: Werkzeug==2.0.2 in /home/osboxes/.local/lib/python3.8/site-packages (from -r requirements.txt (line 6)) (2.0.2)
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$ cat checkstatuslog.txt
Flask server is running
Flask server is running
Flask server is running
Flask server is running
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$
osboxes@osboxes:~/Desktop/nodejs-activity/nodejs$