

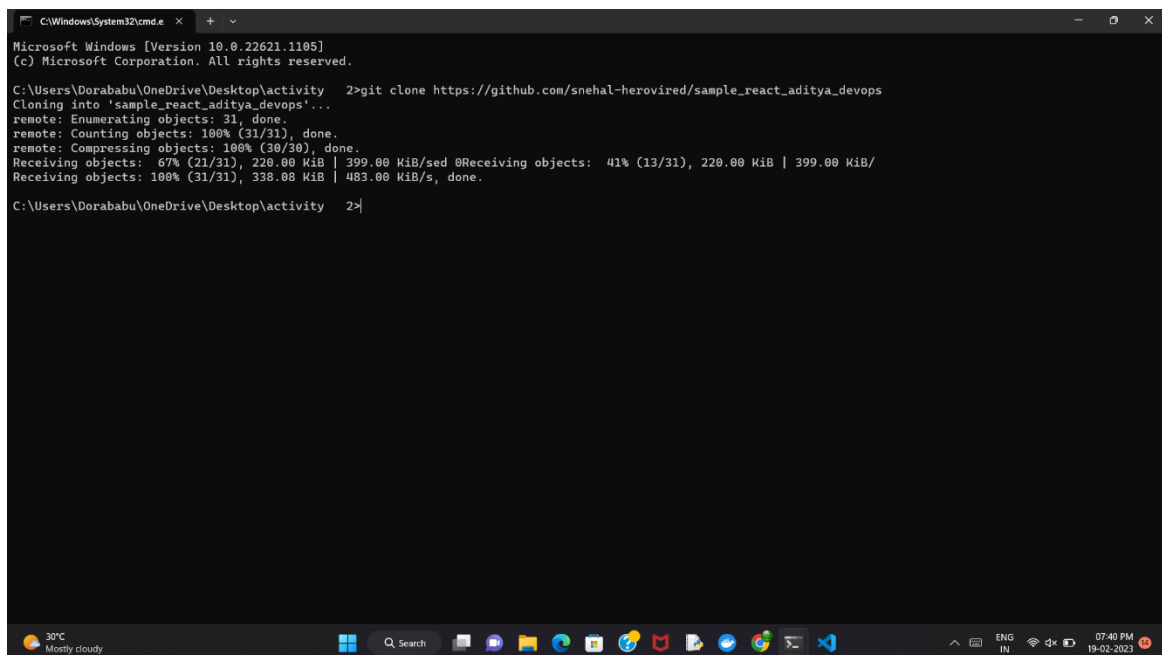
ASSIGNMENT 2

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.

1.DOCKER LOGIN

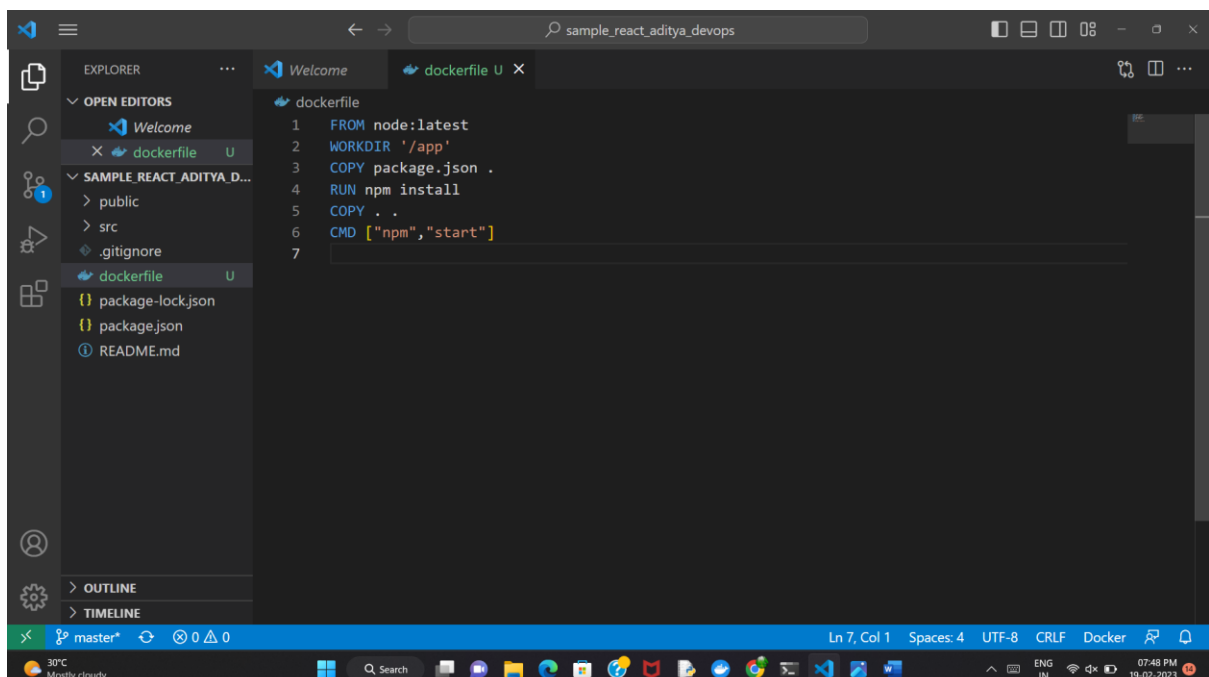


```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.22621.1185]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Dorababu\OneDrive\Desktop\activity 2>git clone https://github.com/snehal-herovired/sample_react_aditya_devops
Cloning into 'sample_react_aditya_devops'...
remote: Enumerating objects: 31, done.
remote: Counting objects: 100% (31/31), done.
remote: Compressing objects: 100% (30/30), done.
Receiving objects: 67% (21/31), 220.00 KiB | 399.00 KiB/sed 8Receiving objects: 41% (13/31), 220.00 KiB | 399.00 KiB/
Receiving objects: 100% (31/31), 338.08 KiB | 483.00 KiB/s, done.

C:\Users\Dorababu\OneDrive\Desktop\activity 2>
```

2.CREATING DOCKERFILE



```
sample_react_aditya_devops
dockerfile
1 FROM node:latest
2 WORKDIR '/app'
3 COPY package.json .
4 RUN npm install
5 COPY . .
6 CMD ["npm", "start"]
7
```

3.DOCKER IMAGES

```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.22621.1105]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Dorababu\OneDrive\Desktop\activity2\sample_react_aditya_devops>docker login
Authenticating with existing credentials...
Login Succeeded

Logging in with your password grants your terminal complete access to your account.
For better security, log in with a limited-privilege personal access token. Learn more at https://docs.docker.com/go/access-tokens/

C:\Users\Dorababu\OneDrive\Desktop\activity2\sample_react_aditya_devops>docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
20a91a04j4/ubuntu1  latest             0c22eecb2d99        2 days ago         917MB
ubuntu1              latest             0c22eecb2d99        2 days ago         917MB
ubuntu              latest             58db3edaf2be        3 weeks ago        77.8MB

C:\Users\Dorababu\OneDrive\Desktop\activity2\sample_react_aditya_devops>code .

C:\Users\Dorababu\OneDrive\Desktop\activity2\sample_react_aditya_devops>docker built -t reactjs .
unknown shorthand flag: 't' in -t
See 'docker --help'.

Usage:  docker [OPTIONS] COMMAND

A self-sufficient runtime for containers

Options:
  --config string      Location of client config files (default
                        "C:\\Users\\Dorababu\\.docker")
  -c, --context string  Name of the context to use to connect to the
                        daemon (overrides DOCKER_HOST env var and
                        default context set with "docker context use")
  -D, --debug           Enable debug mode
  -H, --host list       Daemon socket(s) to connect to
  -l, --log-level string Set the logging level
                        ("debug"|"info"|"warn"|"error"|"fatal")
                        (default "info")
  --tls                Use TLS; implied by --tlsverify
  --tlscacert string    Trust certs signed only by this CA (default
                        "C:\\Users\\Dorababu\\.docker\\ca.pem")

30°C
Mostly cloudy
```

4.DOCKER BUILD -T REACTJS . & DOCKER TAG REACTJS:LATEST 20A91A04J4/REACTJS

```
C:\Windows\System32\cmd.exe
C:\Users\Dorababu\OneDrive\Desktop\activity2\sample_react_aditya_devops>docker build -t reactjs .
[+] Building 4.7s (11/11) FINISHED
=> [internal] load build definition from Dockerfile                                0.0s
=> => transferring dockerfile: 140B                                              0.0s
=> [internal] load .dockerignore                                                  0.0s
=> => transferring context: 2B                                                  0.0s
=> [internal] load metadata for docker.io/library/node:latest                    4.4s
=> [auth] library/node:pull token for registry-1.docker.io                      0.0s
=> [1/5] FROM docker.io/library/node:latest@sha256:d82f1c3ab27a01bd49f963ff4d24ef868852da6d3780d9d42e93b03f4fa3f 0.0s
=> [internal] load build context                                                0.0s
=> => transferring context: 3.10kB                                              0.0s
=> CACHED [2/5] WORKDIR /app                                                    0.0s
=> CACHED [3/5] COPY package.json .                                             0.0s
=> CACHED [4/5] RUN npm install                                                  0.0s
=> [5/5] COPY . .                                                                0.1s
=> exporting to image                                                            0.0s
=> => exporting layers                                                            0.0s
=> => writing image sha256:067f1d3b86764d9871e9163834d14047f058624aad17b1b30595916308a5baea 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\Dorababu\OneDrive\Desktop\activity2\sample_react_aditya_devops>docker tag reactjs:latest 20a91a04j4/reactjs

C:\Users\Dorababu\OneDrive\Desktop\activity2\sample_react_aditya_devops>docker push 20a91a04j4/reactjs
Using default tag: latest
The push refers to repository [docker.io/20a91a04j4/reactjs]
2d117b95c2b1: Pushed
4361432810f6: Layer already exists
6664dedc2415: Layer already exists
2ddb2d2fee56c: 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
```

5. DOCKER PUSH 20A91A04J4/REACTJS & DOCKER RUN -D -P 3000:3000 REACTJS

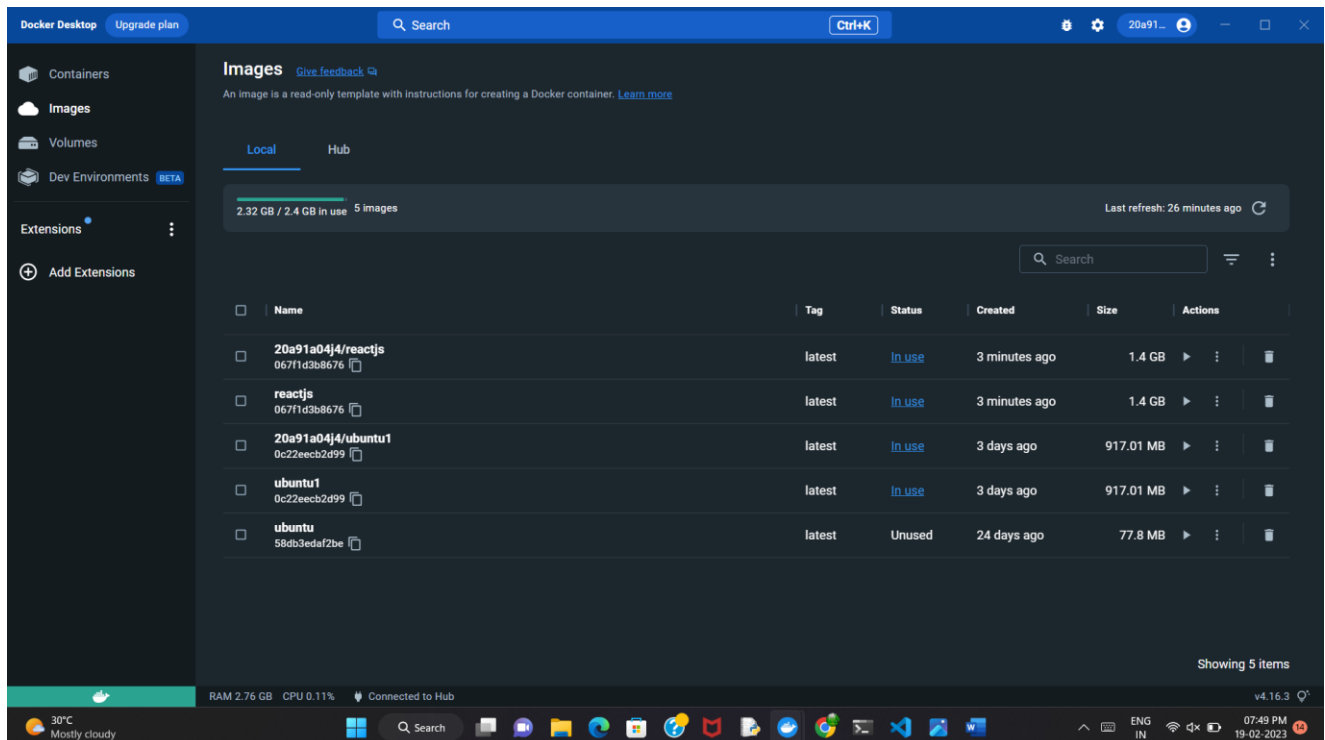
```
C:\Windows\System32\cmd.exe
C:\Users\Dorababu\OneDrive\Desktop\activity2\sample_react_aditya_devops>docker push 20a91a04j4/reactjs
Using default tag: latest
The push refers to repository [docker.io/20a91a04j4/reactjs]
2d117b95c2b1: Pushed
4361432810f6: Layer already exists
6664dedc2415: Layer already exists
2ddb2fee56c: 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:e500f8cd21064fd5cd5ffdb6e97010783cb1910f6d5696c8fe1e3bc6b2f90e70 size: 3052

C:\Users\Dorababu\OneDrive\Desktop\activity2\sample_react_aditya_devops>docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
20a91a04j4/reactjs   latest             067f1d3b8676       About a minute ago 1.41GB
reactjs              latest             067f1d3b8676       About a minute ago 1.41GB
20a91a04j4/ubuntu1   latest             0c22eecb2d99       2 days ago         917MB
ubuntu1              latest             0c22eecb2d99       2 days ago         917MB
ubuntu               latest             58db3edaf2be       3 weeks ago        77.8MB

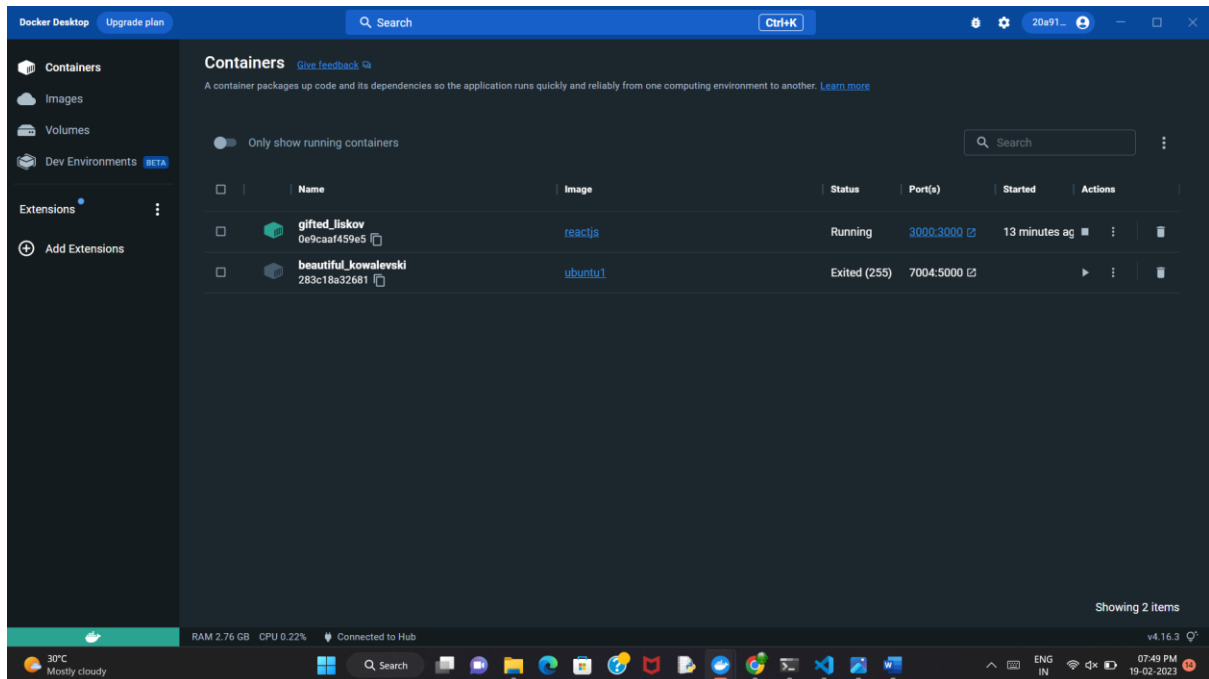
C:\Users\Dorababu\OneDrive\Desktop\activity2\sample_react_aditya_devops>docker run -d -p 3000:3000 reactjs
0e9caaf459e56804e03ff7f139e34585bfc933d496656174c1af36fc7c7997d0

C:\Users\Dorababu\OneDrive\Desktop\activity2\sample_react_aditya_devops>
```

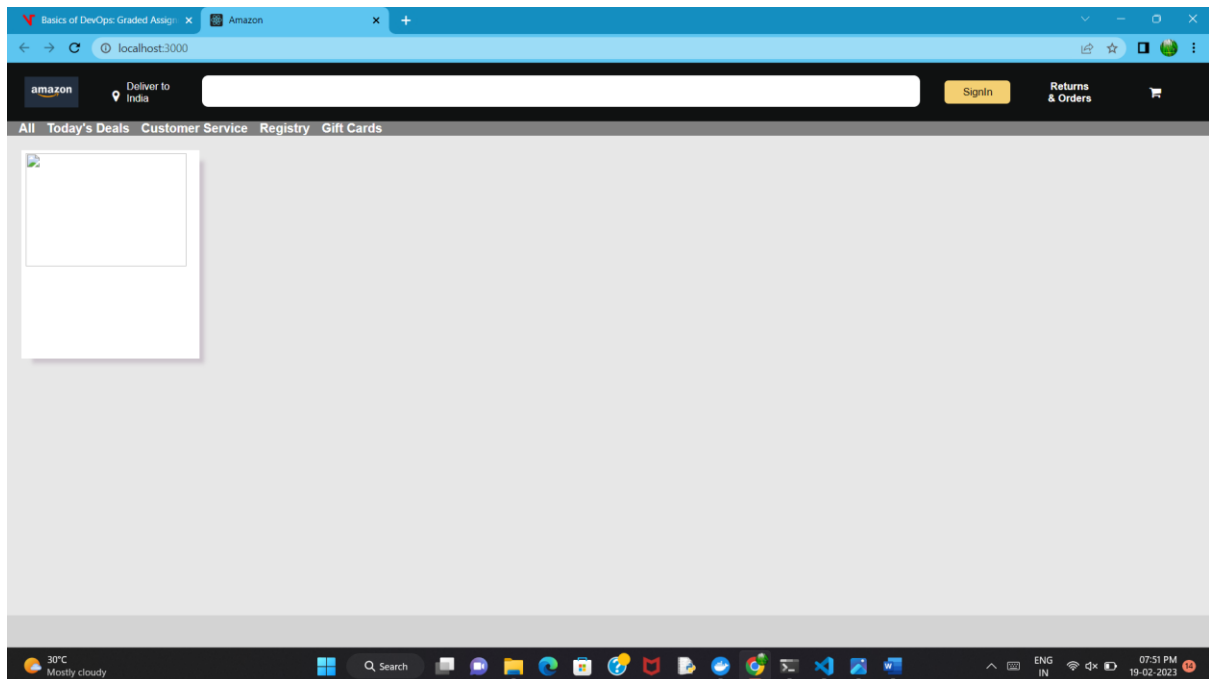
6. DOCKER >> IMAGES (checking docker images in docker application)



7.DOCKER >> CONTAINERS (checking container)



8. LOCALHOST :3000



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>

CI-CD PIPELINE :

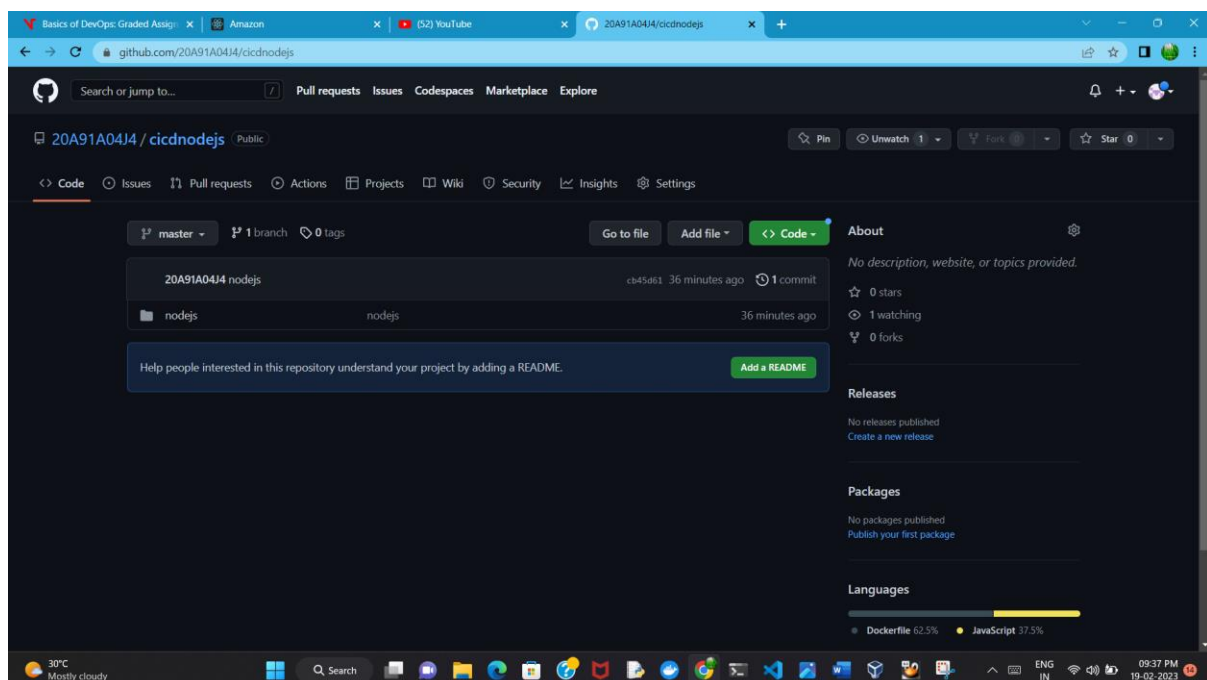
continuous integration and continuous deployment

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.

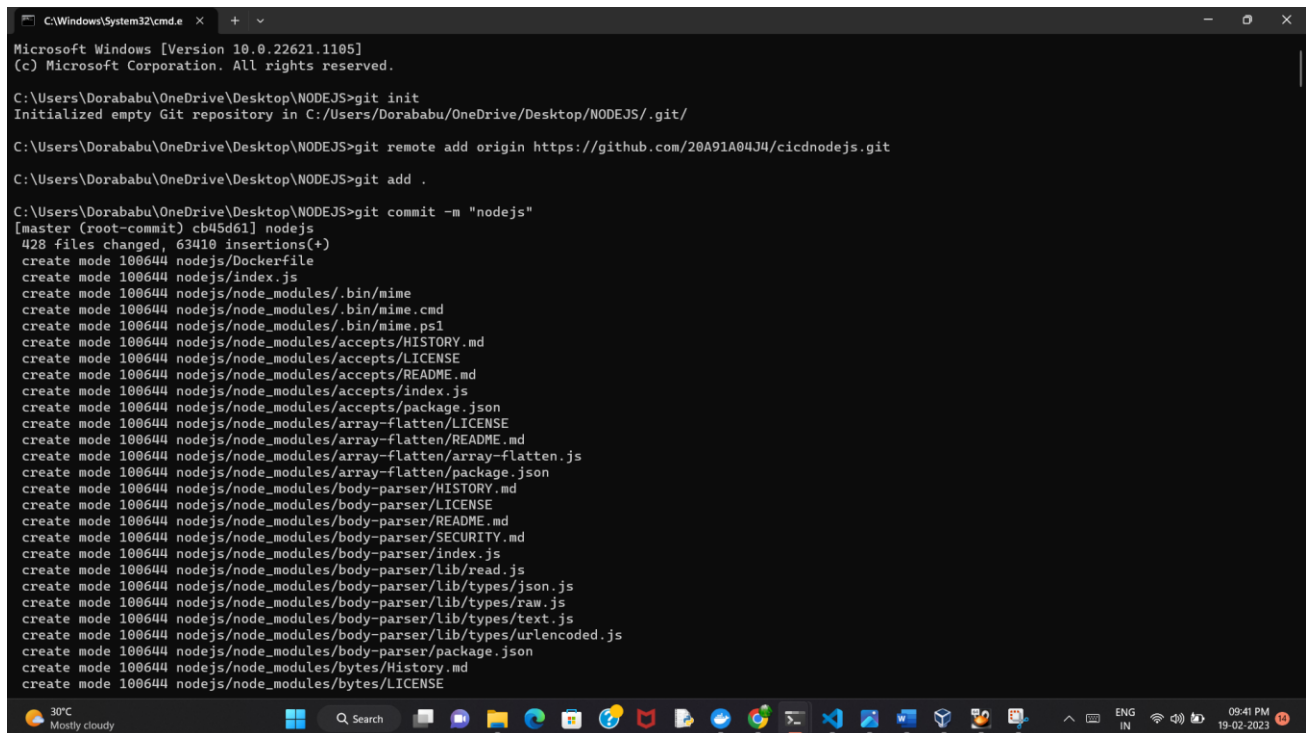
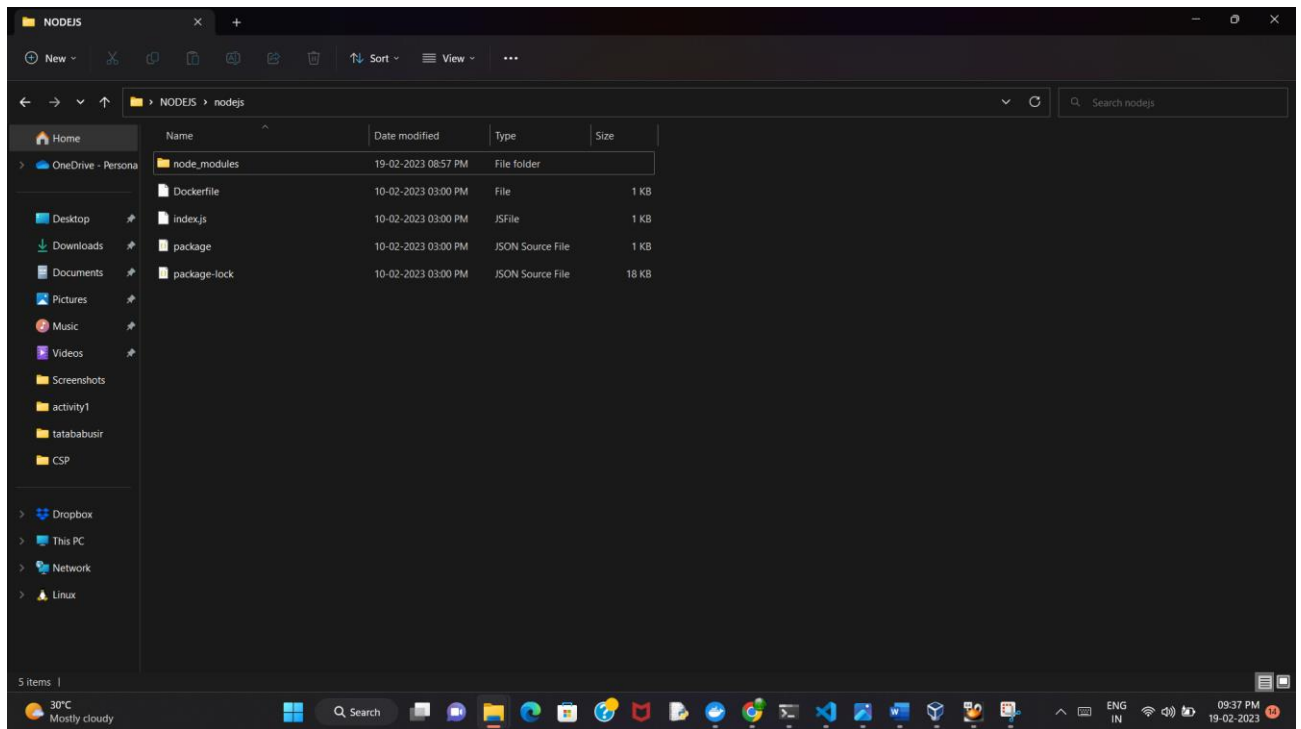
ROLE OF JENKINS IN CI-CD PIPELINE:

Jenkins is an open-source automation tool used to build and test software projects. The tool makes it more convenient for developers to integrate changes to the project. Jenkins achieves Continuous Integration with the help of plugins.

1.CREATING NEW REPOSITORY CICDNODEJS



2. CREATING NEW FOLDER & CLONING NODEJS



3. PUSHED SUCCESSFULLY TO NEWLY CREATED REPOSITORY

```
C:\Windows\System32\cmd.exe X + v

create mode 100644 nodejs/node_modules/unpipe/index.js
create mode 100644 nodejs/node_modules/unpipe/package.json
create mode 100644 nodejs/node_modules/utils-merge/.npmignore
create mode 100644 nodejs/node_modules/utils-merge/LICENSE
create mode 100644 nodejs/node_modules/utils-merge/README.md
create mode 100644 nodejs/node_modules/utils-merge/index.js
create mode 100644 nodejs/node_modules/utils-merge/package.json
create mode 100644 nodejs/node_modules/vary/HISTORY.md
create mode 100644 nodejs/node_modules/vary/LICENSE
create mode 100644 nodejs/node_modules/vary/README.md
create mode 100644 nodejs/node_modules/vary/index.js
create mode 100644 nodejs/node_modules/vary/package.json
create mode 100644 nodejs/package-lock.json
create mode 100644 nodejs/package.json

C:\Users\Dorababu\OneDrive\Desktop\NODEJS>git remote add origin https://github.com/20A91A04J4/cicdnnodejs.git
error: remote origin already exists.

C:\Users\Dorababu\OneDrive\Desktop\NODEJS>git push origin master
Enumerating objects: 516, done.
Counting objects: 100% (516/516), done.
Delta compression using up to 8 threads
Compressing objects: 100% (492/492), done.
Writing objects: 100% (516/516), 659.50 KiB | 3.22 MiB/s, done.
Total 516 (delta 94), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (94/94), done.
To https://github.com/20A91A04J4/cicdnnodejs.git
 * [new branch]      master -> master

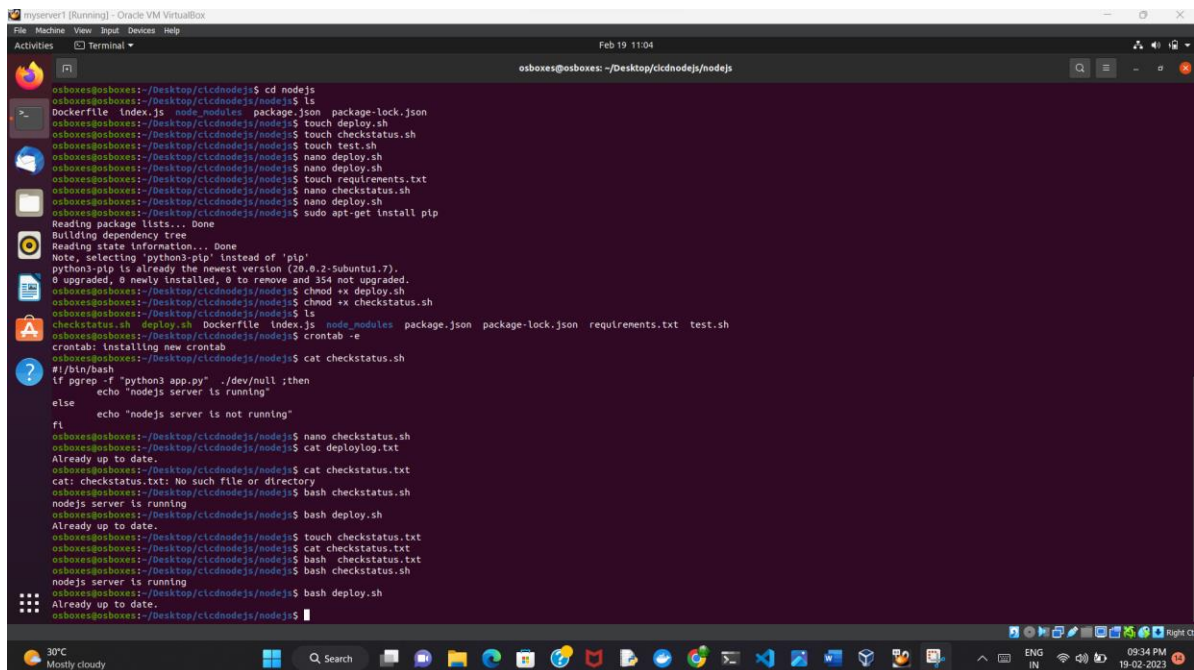
C:\Users\Dorababu\OneDrive\Desktop\NODEJS>
```

4. CLONING REPOSITORY TO LINUX TERMINAL & NODEJS INSTALLATION

```
myserver1 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities Terminal Feb 19 11:02
osboxes@osboxes: ~/Desktop/cicdnnodejs/nodejs

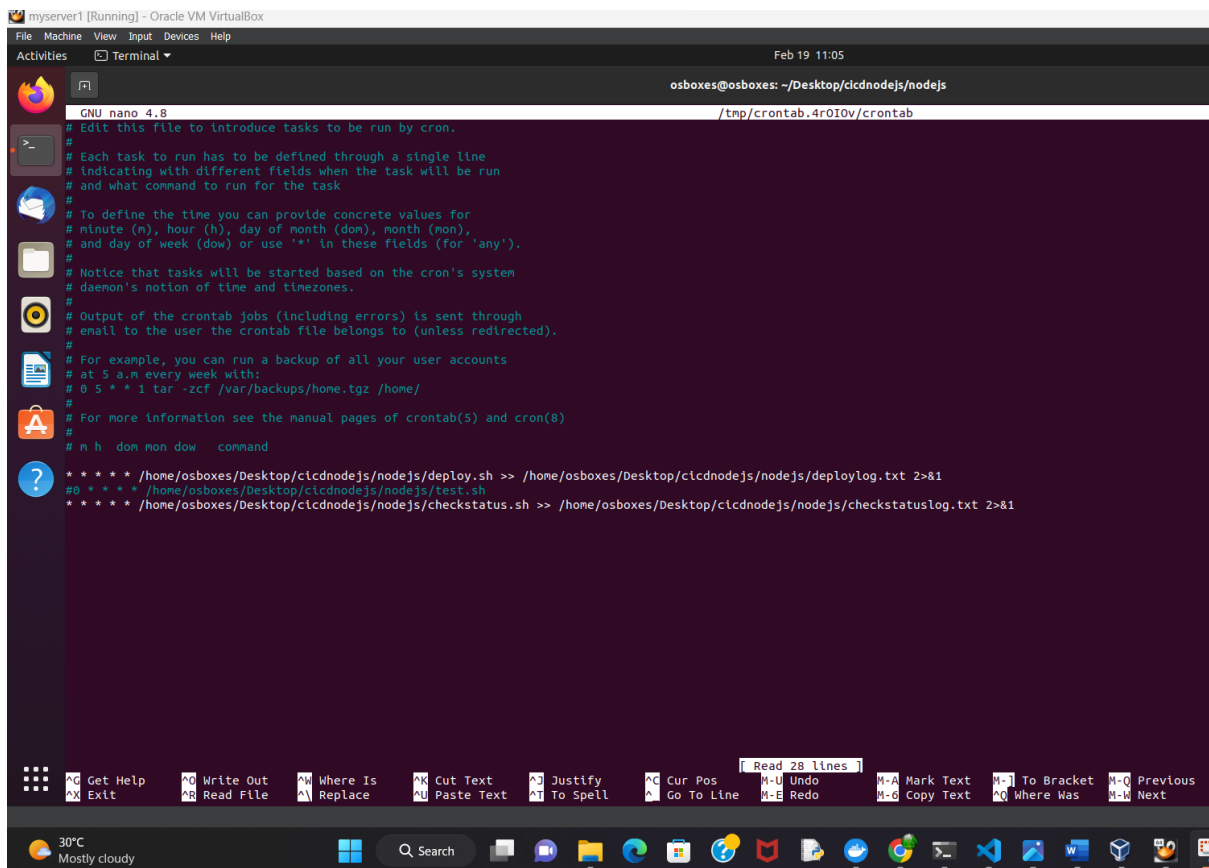
osboxes@osboxes:~$ cd Desktop
osboxes@osboxes:~/Desktop$ git clone https://github.com/20A91A04J4/cicdnnodejs.git
Cloning into 'cicdnnodejs'...
remote: Enumerating objects: 516, done.
remote: Counting objects: 100% (516/516), done.
remote: Compressing objects: 100% (398/398), done.
remote: Total 516 (delta 94), reused 516 (delta 94), pack-reused 0
Receiving objects: 100% (516/516), 659.50 KiB | 375.00 KiB/s, done.
Resolving deltas: 100% (94/94), done.
osboxes@osboxes:~/Desktop$ ls
20A91A04J4 alpha cicdnnodejs pythonflask sample.sh sample.sh.save 'Screenshot from 2023-02-10 10-11-31.png'
osboxes@osboxes:~/Desktop$ sudo apt install nodejs
[sudo] password for osboxes:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libc-ares2 libnode64 nodejs-doc
Suggested packages:
  npm
The following NEW packages will be installed:
  libc-ares2 libnode64 nodejs nodejs-doc
0 upgraded, 4 newly installed, 0 to remove and 354 not upgraded.
Need to get 6,807 kB of archives.
After this operation, 30.7 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us.archive.ubuntu.com/ubuntu focal-updates/main amd64 libc-ares2 amd64 1.15.0-1ubuntu0.1 [38.2 kB]
Get:2 http://us.archive.ubuntu.com/ubuntu focal/universe amd64 libnode64 amd64 10.19.0-dfsg-3ubuntu1 [5,765 kB]
Get:3 http://us.archive.ubuntu.com/ubuntu focal/universe amd64 nodejs-doc all 10.19.0-dfsg-3ubuntu1 [942 kB]
Get:4 http://us.archive.ubuntu.com/ubuntu focal/universe amd64 nodejs amd64 10.19.0-dfsg-3ubuntu1 [61.1 kB]
Fetched 6,807 kB in 13s (506 kB/s)
Selecting previously unselected package libc-ares2:amd64.
(Reading database ... 149854 files and directories currently installed.)
Preparing to unpack .../libc-ares2_1.15.0-1ubuntu0.1_amd64.deb ...
Unpacking libc-ares2:amd64 (1.15.0-1ubuntu0.1) ...
Selecting previously unselected package libnode64:amd64.
Preparing to unpack .../libnode64_10.19.0-dfsg-3ubuntu1_amd64.deb ...
Unpacking libnode64:amd64 (10.19.0-dfsg-3ubuntu1) ...
Selecting previously unselected package nodejs-doc.
Preparing to unpack .../nodejs-doc_10.19.0-dfsg-3ubuntu1_all.deb ...
Unpacking nodejs-doc (10.19.0-dfsg-3ubuntu1) ...
Selecting previously unselected package nodejs.
Preparing to unpack .../nodejs_10.19.0-dfsg-3ubuntu1_amd64.deb ...
Unpacking nodejs (10.19.0-dfsg-3ubuntu1) ...
Setting up libc-ares2:amd64 (1.15.0-1ubuntu0.1) ...
Setting up libnode64:amd64 (10.19.0-dfsg-3ubuntu1) ...
Setting up nodejs-doc (10.19.0-dfsg-3ubuntu1) ...
Setting up nodejs (10.19.0-dfsg-3ubuntu1) ...
```


5.CREATING DEPLOY & CHECKSTATUS FILES & CHECKING NODEJS SERVER STATUS



FINALLY NODEJS SERVER IS RUNNING

6.CRONTAB -E



myserver1 [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

Activities Terminal



GNU nano 4.8

```
#!/bin/bash
if pgrep -f "python3 app.py" >/dev/null ;then
    echo "nodejs server is running"
else
    echo "nodejs server is not running"
fi
```