

Graded Assignment on Docker and CI-CD pipeline

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.

```
C:\Windows\System32\cmd.exe x + v
Microsoft Windows [Version 10.0.22621.1265]
(c) Microsoft Corporation. All rights reserved.

C:\Users\DELL\Desktop\assignment2>git init
Initialized empty Git repository in C:/Users/DELL/Desktop/assignment2/.git/

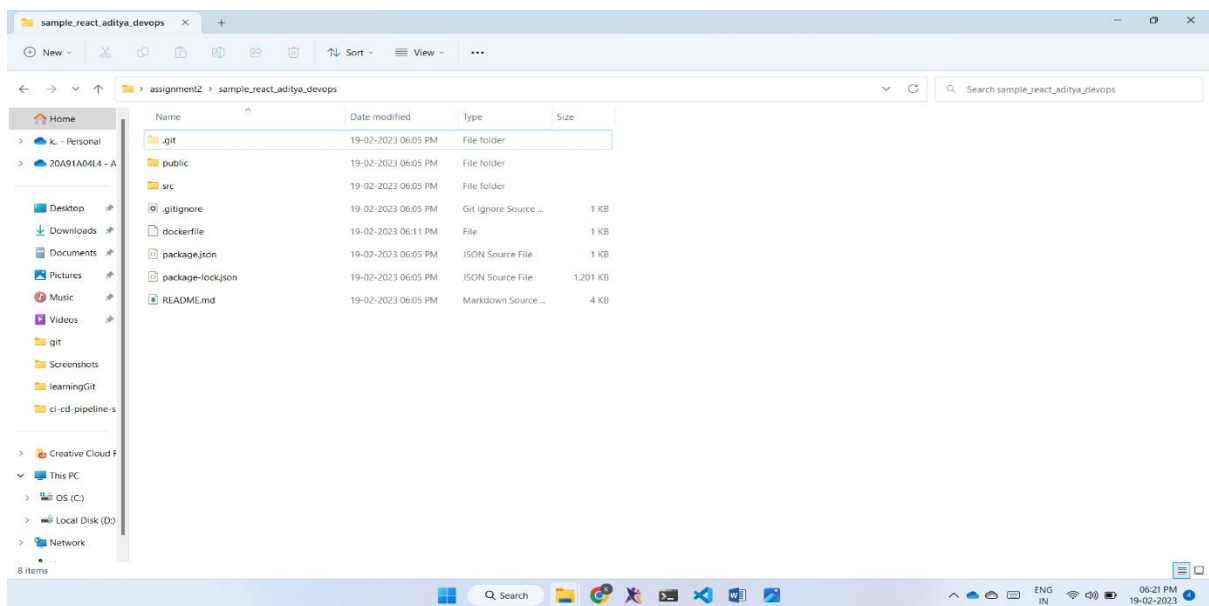
C:\Users\DELL\Desktop\assignment2>git clone https://github.com/snehal-herovired/sample_react_aditya_devops
Cloning into 'sample_react_aditya_devops'...
remote: Enumerating objects: 31, done.
remote: Counting objects: 100% (31/31), done.
remote: Compressing objects: 100% (30/30), done.

C:\Users\DELL\Desktop\assignment2>git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    sample_react_aditya_devops/

nothing added to commit but untracked files present (use "git add" to track)
C:\Users\DELL\Desktop\assignment2>
```



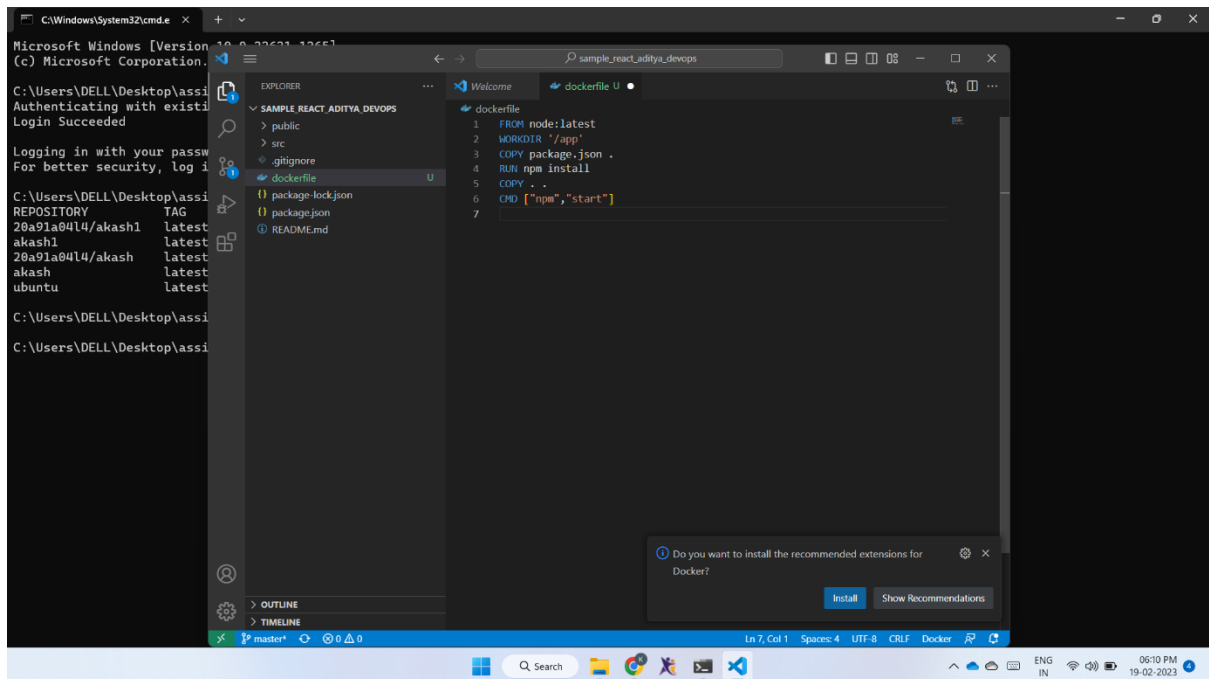
```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.22621.1265]
(c) Microsoft Corporation. All rights reserved.

C:\Users\DELL\Desktop\assignment2\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\DELL\Desktop\assignment2\sample_react_aditya_devops>docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
20a91a04l4/akash1   latest             6b0951e1c656       5 days ago         156MB
akash1               latest             6b0951e1c656       5 days ago         156MB
20a91a04l4/akash     latest             df653695ff78       5 days ago         919MB
akash                latest             df653695ff78       5 days ago         919MB
ubuntu               latest             58db3edaf2be       3 weeks ago        77.8MB

C:\Users\DELL\Desktop\assignment2\sample_react_aditya_devops>code .
C:\Users\DELL\Desktop\assignment2\sample_react_aditya_devops>
```



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

C:\Users\DELL\Desktop\assignment2\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\DELL\Desktop\assignment2\sample_react_aditya_devops>docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
20a91a04l4/akash1   latest             6b0951e1c656       5 days ago         156MB
akash1              latest             6b0951e1c656       5 days ago         156MB
20a91a04l4/akash     latest             df653695ff78       5 days ago         919MB
akash               latest             df653695ff78       5 days ago         919MB
ubuntu              latest             58db3edaf2be       3 weeks ago        77.8MB

C:\Users\DELL\Desktop\assignment2\sample_react_aditya_devops>code .

C:\Users\DELL\Desktop\assignment2\sample_react_aditya_devops>Docker build -t reactjs .
[+] Building 218.1s (11/11) FINISHED
=> [internal] load build definition from Dockerfile                                0.1s
=> => transferring dockerfile: 141B                                              0.0s
=> [internal] load .dockerignore                                                  0.0s
=> => transferring context: 2B                                                    0.0s
=> [internal] load metadata for docker.io/library/node:latest                   4.0s
=> [Auth] library/node:pull token for registry-1.docker.io                      0.0s
=> [1/5] FROM docker.io/library/node:latest@sha256:d82f1c3ab27a01bd49f963ff4d24ef868852da6d3780d9d42e93b03f4fa3f62a 82.0s
=> => resolve docker.io/library/node:latest@sha256:d82f1c3ab27a01bd49f963ff4d24ef868852da6d3780d9d42e93b03f4fa3f62a 0.0s
=> => sha256:d82f1c3ab27a01bd49f963ff4d24ef868852da6d3780d9d42e93b03f4fa3f62a 1.21kB / 1.21kB 0.0s
=> => sha256:5dd258b30c84184b7ca8fd95b9105eb6f99c516baf3491375af1dc7e947b9 2.21kB / 2.21kB 0.0s
=> => sha256:b2604a913772e2b73b0e8b3078a388410e5e05b2f61c3aa71fecbaf013b71d7 7.51kB / 7.51kB 0.0s
=> => sha256:6c1024729feeb2893dad43684fe7679c4d866c3640dfc3912bbd93c5a51f32d2 5.17MB / 5.17MB 1.1s
=> => sha256:c3aa11fbc85a2a9606c98cfb4d0a2db8cde983ce3c37565c356cdf1dd42654c 10.88MB / 10.88MB 9.9s
=> => sha256:1e4a4ec170e0864d93a6f97a20bde3445971a40662c1801189eal230d3a0e004 55.05MB / 55.05MB 30.7s
=> => sha256:aas4add66b2a07555c8b761f60b15f818236cc928109a30032111efc98c6fcd0 54.59MB / 54.59MB 23.2s
=> => sha256:9e3a68c2bce7eed21ed48f867f9b3491ae3e8b7a5edbc8ed5d9dc7dd9e4a0f92 196.90MB / 196.90MB 61.7s
=> => sha256:17981317c11c08436da67f5f0c6215f821f5b7cc25983d709f526da4d51af298 4.20kB / 4.20kB 24.2s
=> => sha256:3e34bc7ab4ac383503081b324302d50e593793666bf4bd64685f208831c664 46.07MB / 46.07MB 43.3s
=> => sha256:595a941cd7e5f6404ef5083462a5dfb32e6ed203a47636513a6978439e55ae8 2.28MB / 2.28MB 33.1s
=> => extracting sha256:1e4a4ec170e0864d93a6f97a20bde3445971a40662c1801189eal230d3a0e004 2.1s

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

```
=> => exporting layers                                                            6.1s
=> => writing image sha256:5228ab78d6ba875f5a5eff1e77da66f50a267489453405a534cd82cc03eed6bf 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

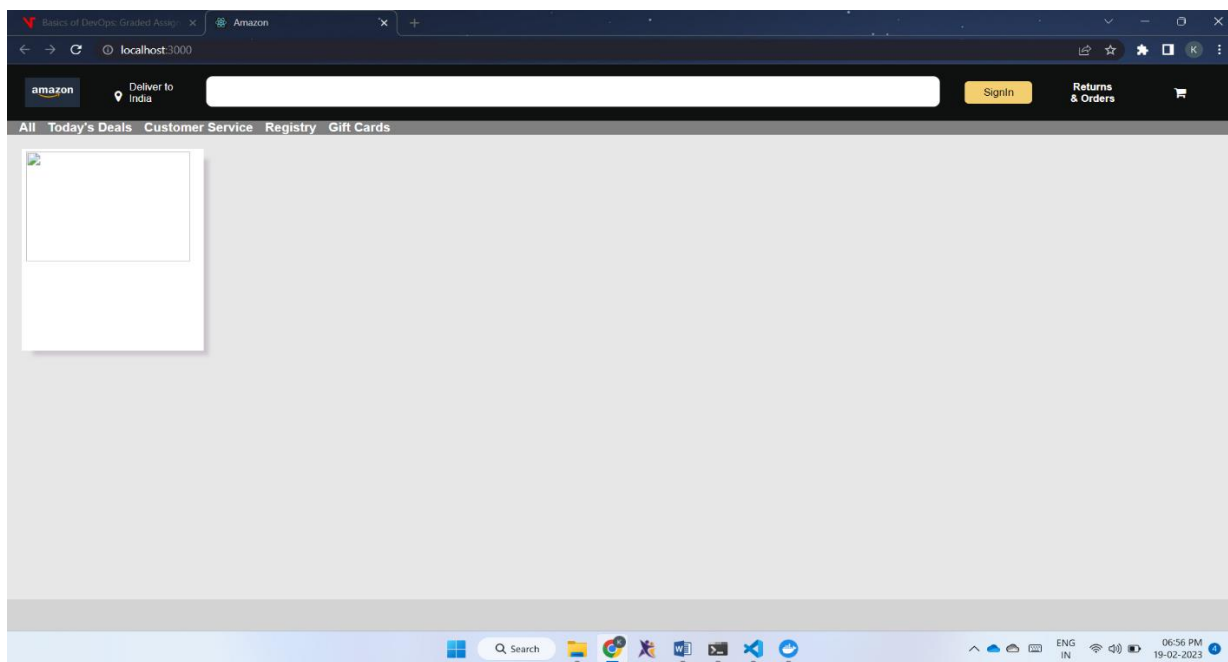
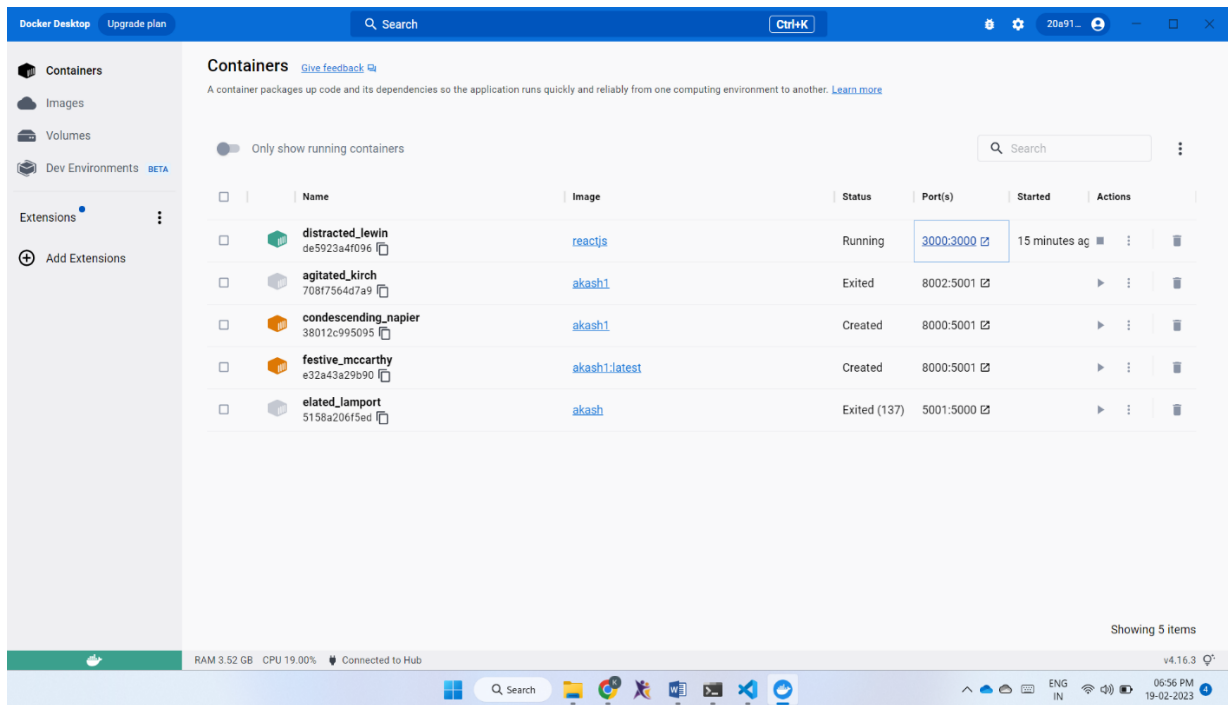
C:\Users\DELL\Desktop\assignment2\sample_react_aditya_devops>Docker tag reactjs:latest 20a91a04l4/reactjs

C:\Users\DELL\Desktop\assignment2\sample_react_aditya_devops>Docker push 20a91a04l4/reactjs
Using default tag: latest
The push refers to repository [docker.io/20a91a04l4/reactjs]
55566bf7bc4d: Pushed
a88c72e9e68b: Pushed
9a0d963e6716: Pushed
fb54b6bc8130: Pushed
d5710631793c: Mounted from library/node
9b46c8b64898: Mounted from library/node
c61a1dbf0488: Mounted from library/node
4c92897e605e: Mounted from library/node
0b6859e9fff1: Mounted from library/node
11829b3be9c0: Mounted from library/node
dc8e1d8b53e9: Mounted from library/node
9d49e0bc68a4: Mounted from library/node
8e396a1aad59: Mounted from library/node
latest: digest: sha256:ddcd216bd4f39e64e5acbc23e3236ee4f2ad5a153636dde3b2c0c5ccd49248419 size: 3052

C:\Users\DELL\Desktop\assignment2\sample_react_aditya_devops>Docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
20a91a04l4/reactjs   latest             5228ab78d6ba       4 minutes ago      1.41GB
reactjs              latest             5228ab78d6ba       4 minutes ago      1.41GB
20a91a04l4/akash1   latest             6b0951e1c656       5 days ago         156MB
akash1              latest             6b0951e1c656       5 days ago         156MB
20a91a04l4/akash     latest             df653695ff78       5 days ago         919MB
akash               latest             df653695ff78       5 days ago         919MB
ubuntu              latest             58db3edaf2be       3 weeks ago        77.8MB

C:\Users\DELL\Desktop\assignment2\sample_react_aditya_devops>Docker run -d -p 3000:3000 reactjs
de5923a4f9694e0405ce26d453db759b39611f80cbaabdd00ffaebdbd279cc590

C:\Users\DELL\Desktop\assignment2\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>.

CI-CD-PIPELINE:

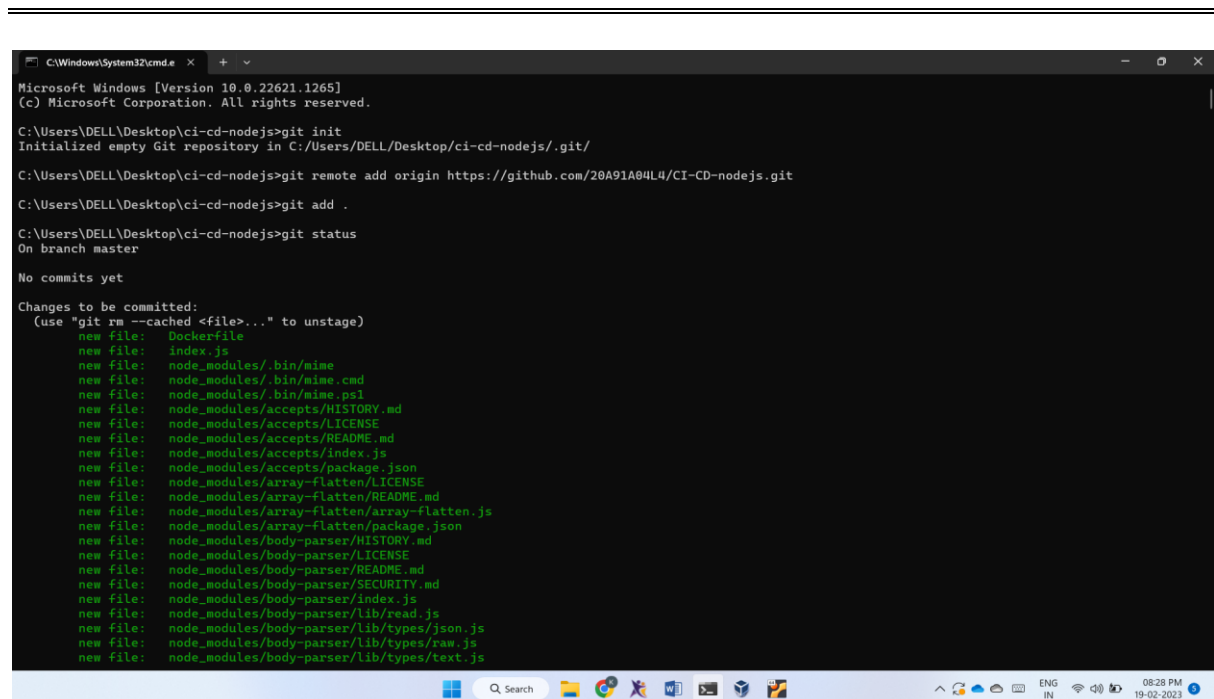
=====

A continuous integration and continuous deployment 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.

JENKINS:

=====

Jenkins is an open-source automation tool for Continuous Integration (CI) and Continuous Deployment (CD). It is a server-based system that runs in servlet containers like Apache Tomcat



```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.22621.1265]
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C:\Users\DELL\Desktop\ci-cd-nodejs>git init
Initialized empty Git repository in C:/Users/DELL/Desktop/ci-cd-nodejs/.git/

C:\Users\DELL\Desktop\ci-cd-nodejs>git remote add origin https://github.com/20A91A04L4/CI-CD-nodejs.git

C:\Users\DELL\Desktop\ci-cd-nodejs>git add .

C:\Users\DELL\Desktop\ci-cd-nodejs>git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
    new file:   Dockerfile
    new file:   index.js
    new file:   node_modules/.bin/mime
    new file:   node_modules/.bin/mime.cmd
    new file:   node_modules/.bin/mime.ps1
    new file:   node_modules/accepts/HISTORY.md
    new file:   node_modules/accepts/LICENSE
    new file:   node_modules/accepts/README.md
    new file:   node_modules/accepts/index.js
    new file:   node_modules/accepts/package.json
    new file:   node_modules/array-flatten/LICENSE
    new file:   node_modules/array-flatten/README.md
    new file:   node_modules/array-flatten/array-flatten.js
    new file:   node_modules/array-flatten/package.json
    new file:   node_modules/body-parser/HISTORY.md
    new file:   node_modules/body-parser/LICENSE
    new file:   node_modules/body-parser/README.md
    new file:   node_modules/body-parser/SECURITY.md
    new file:   node_modules/body-parser/index.js
    new file:   node_modules/body-parser/lib/read.js
    new file:   node_modules/body-parser/lib/types/json.js
    new file:   node_modules/body-parser/lib/types/raw.js
    new file:   node_modules/body-parser/lib/types/text.js
```

```
C:\Windows\System32\cmd.exe
create mode 100644 node_modules/unpipe/HISTORY.md
create mode 100644 node_modules/unpipe/LICENSE
create mode 100644 node_modules/unpipe/README.md
create mode 100644 node_modules/unpipe/index.js
create mode 100644 node_modules/unpipe/package.json
create mode 100644 node_modules/utls-merge/.npmignore
create mode 100644 node_modules/utls-merge/LICENSE
create mode 100644 node_modules/utls-merge/README.md
create mode 100644 node_modules/utls-merge/index.js
create mode 100644 node_modules/utls-merge/package.json
create mode 100644 node_modules/vary/HISTORY.md
create mode 100644 node_modules/vary/LICENSE
create mode 100644 node_modules/vary/README.md
create mode 100644 node_modules/vary/index.js
create mode 100644 node_modules/vary/package.json
create mode 100644 package-lock.json
create mode 100644 package.json

C:\Users\DELL\Desktop\ci-cd-nodejs>git push origin master
Enumerating objects: 515, done.
Counting objects: 100% (515/515), done.
Delta compression using up to 8 threads
Compressing objects: 100% (492/492), done.
Writing objects: 100% (515/515), 659.19 KiB | 5.32 MiB/s, done.
Total 515 (delta 94), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (94/94), done.
To https://github.com/20A91A04L4/CI-CD-nodejs.git
 * [new branch]      master -> master

C:\Users\DELL\Desktop\ci-cd-nodejs>
```

20A91A04L4 / CI-CD-nodejs

Code Issues Pull requests Actions Projects Wiki Security Insights Settings

master 1 branch 0 tags

Go to file Add file <> Code

20A91A04L4 and 20A91A04L4 nodejs cca45aa 3 minutes ago 1 commit		
node_modules	nodejs	3 minutes ago
Dockerfile	nodejs	3 minutes ago
index.js	nodejs	3 minutes ago
package-lock.json	nodejs	3 minutes ago
package.json	nodejs	3 minutes ago

Help people interested in this repository understand your project by adding a README. Add a README

About

No description, website, or topics provided.

0 stars

1 watching

0 forks

Releases

No releases published

Create a new release

Packages

No packages published

Publish your first package

Languages

Dockerfile 62.5% JavaScript 37.5%

```
Activities Terminal Feb 19 10:22
osboxes@osboxes: ~/Desktop/CI-CD-nodejs

osboxes@osboxes:~$ cd Desktop
osboxes@osboxes:~/Desktop$ git clone https://github.com/20A91A04L4/CI-CD-nodejs.git
Cloning into 'CI-CD-nodejs'...
remote: Enumerating objects: 515, done.
remote: Counting objects: 100% (515/515), done.
remote: Compressing objects: 100% (398/398), done.
remote: Total 515 (delta 94), reused 515 (delta 94), pack-reused 0
Receiving objects: 100% (515/515), 659.19 KiB | 2.84 MiB/s, done.
Resolving deltas: 100% (94/94), done.
osboxes@osboxes:~/Desktop$ ls
akash.sh  CI-CD-nodejs  ci-cd-pipeline  CI-CD-pipeline
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 5s (1,380 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) ...
```

```
Activities Terminal Feb 19 10:25
osboxes@osboxes: ~/Desktop/CI-CD-nodejs

GNU nano 4.8
# /bin/bash
cd /home/osboxes/Desktop/CI-CD-nodejs
git pull
pip install -r requirements.txt
if [ $(pgrep -f "python3 app.py") -eq 0 ]; then
  nohup python3 app.py &
fi

Read 8 lines
Get Help  Write Out  Where Is  Cut Text  Justify  Cur Pos  H-U Undo  M-A Mark Text  T-B To Bracket  P-O Previous  B Back  Prev Word
Exit  Read File  Replace  Paste Text  To Spell  Go To Line  Redo  Copy Text  Where Was  Next  Forward  Next Word
```

```
Activities Terminal Feb 19 10:26 osboxes@osboxes: ~/Desktop/CI-CD-nodejs checkstatus.sh
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
```

```
Activities Terminal Feb 19 10:24 osboxes@osboxes: ~/Desktop/CI-CD-nodejs
Processing triggers for man-db (2.9.1-1) ...
osboxes@osboxes:~/Desktop$ ls
akash.sh CI-CD-nodejs ci-cd-pipeline CI-CD-pipeline
osboxes@osboxes:~/Desktop$ cd CI-CD-nodejs
osboxes@osboxes:~/Desktop/CI-CD-nodejs$ ls
Dockerfile index.js node_modules package.json package-lock.json
osboxes@osboxes:~/Desktop/CI-CD-nodejs$ touch deploy.sh
osboxes@osboxes:~/Desktop/CI-CD-nodejs$ touch checkstatus.sh
osboxes@osboxes:~/Desktop/CI-CD-nodejs$ touch test.sh
osboxes@osboxes:~/Desktop/CI-CD-nodejs$ nano deploy.sh
osboxes@osboxes:~/Desktop/CI-CD-nodejs$ touch requirements.txt
osboxes@osboxes:~/Desktop/CI-CD-nodejs$ nano checkstatus.sh
osboxes@osboxes:~/Desktop/CI-CD-nodejs$ sudo apt-get install pip
Reading package lists... Done
Building dependency tree
Reading 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/CI-CD-nodejs$ chmod +x deploy.sh
osboxes@osboxes:~/Desktop/CI-CD-nodejs$ ls
checkstatus.sh deploy.sh Dockerfile index.js node_modules package.json package-lock.json requirements.txt test.sh
osboxes@osboxes:~/Desktop/CI-CD-nodejs$ crontab -e
crontab: installing new crontab
osboxes@osboxes:~/Desktop/CI-CD-nodejs$ cat checkstatus.sh
#!/bin/bash
if pgrep -f "python3 app.py" >/dev/null ;then
    echo "nodejs server is running"
else
    echo "nodejs server is not running"
fi

osboxes@osboxes:~/Desktop/CI-CD-nodejs$ ls
checkstatus.sh deploy.sh Dockerfile index.js node_modules package.json package-lock.json requirements.txt test.sh
osboxes@osboxes:~/Desktop/CI-CD-nodejs$ cat deploylog.txt
Already up to date.
osboxes@osboxes:~/Desktop/CI-CD-nodejs$ cat checkstatuslog.txt
cat: checkstatuslog.txt: No such file or directory
osboxes@osboxes:~/Desktop/CI-CD-nodejs$ ls
checkstatus.sh checkstatus.txt deploylog.txt deploy.sh Dockerfile index.js node_modules package.json package-lock.json requirements.txt test.sh
osboxes@osboxes:~/Desktop/CI-CD-nodejs$ cat checkstatus.txt
nodejs server is running
nodejs server is running
nodejs server is running
osboxes@osboxes:~/Desktop/CI-CD-nodejs$
```