

Assignment SDE

Use source code from 'aesthesia-demo/' directory & use the src to build docker image for the same. To run the app, use command: 'npm start' Run the docker image on port 3000 & check the output on '<http://localhost:3000>'

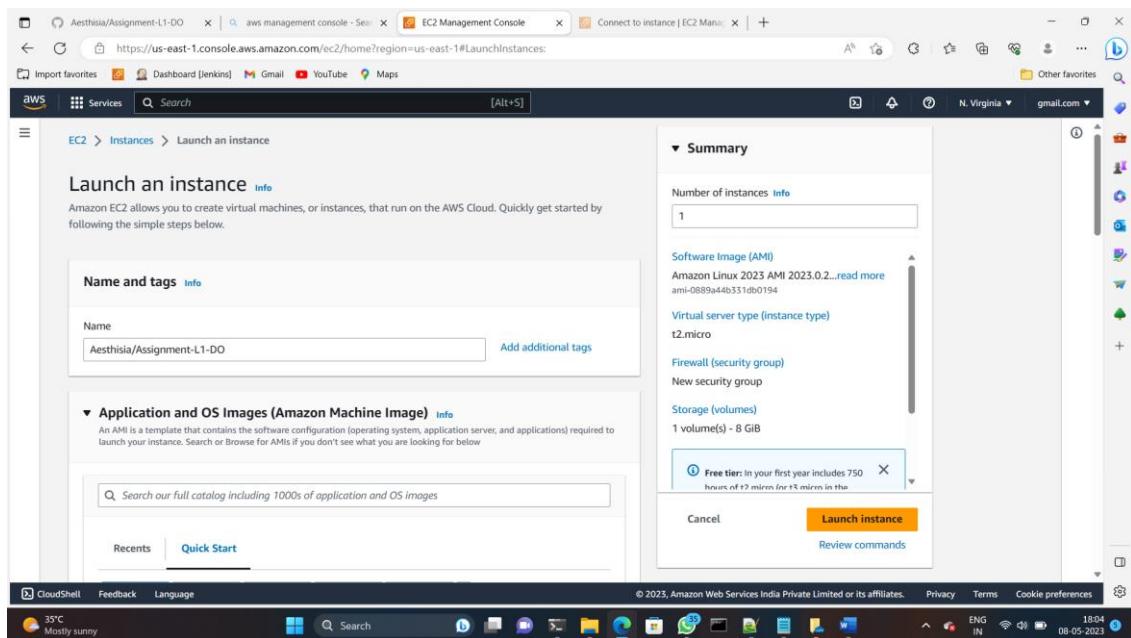
Tools and version required

- Docker
- Git
- Port: 3000

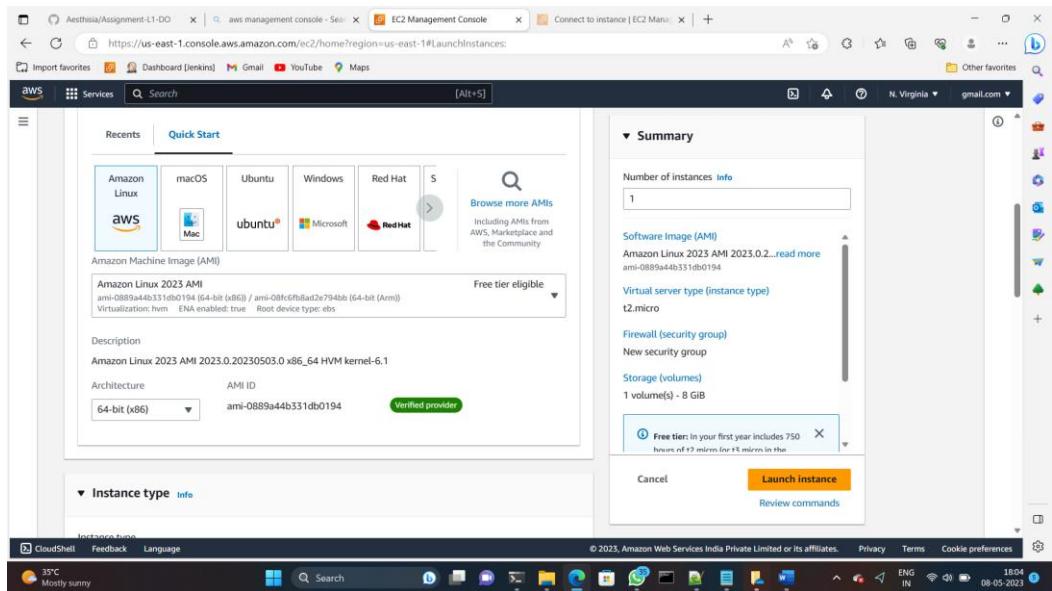
Lab – 1: Creating an EC2 Instance

1. To create your EC2 instance, go to Amazon EC2 in the AWS console.

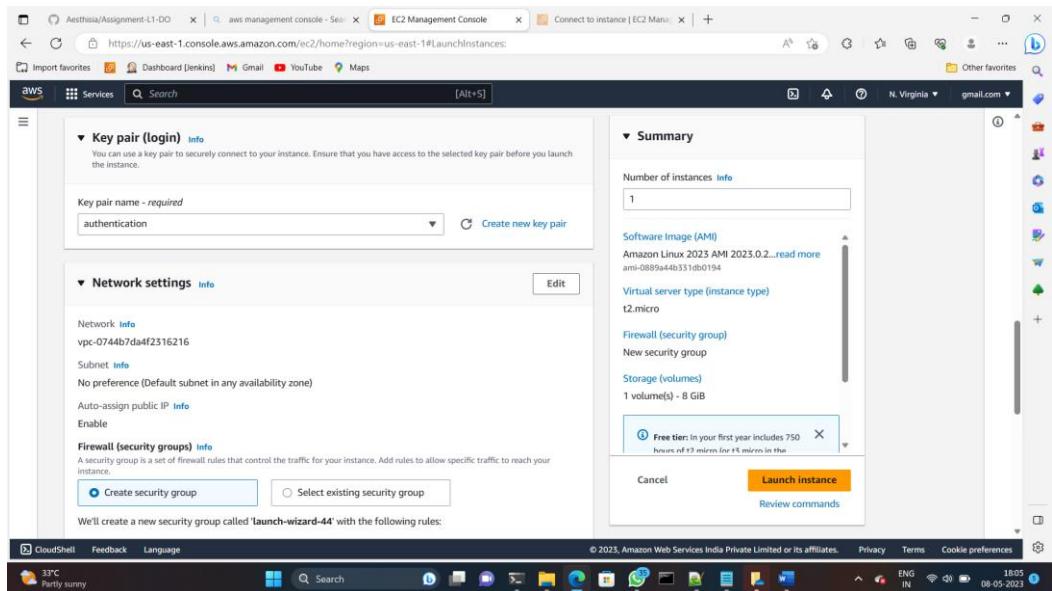
Click the button that says Launch instance to open the instance creation.



I have given the instance name Aesthesia/Assignment-L1-DO

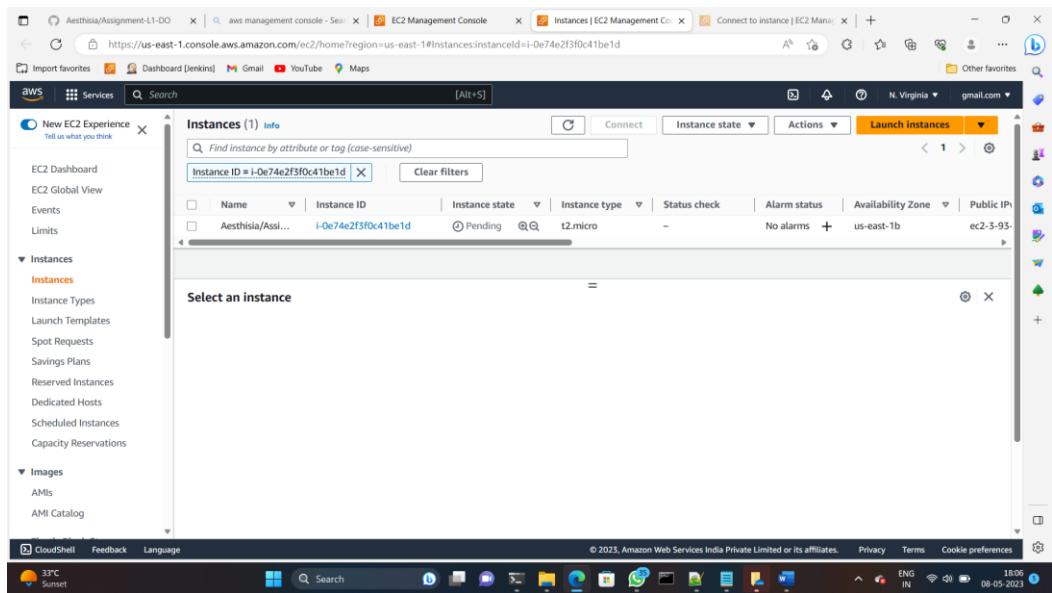
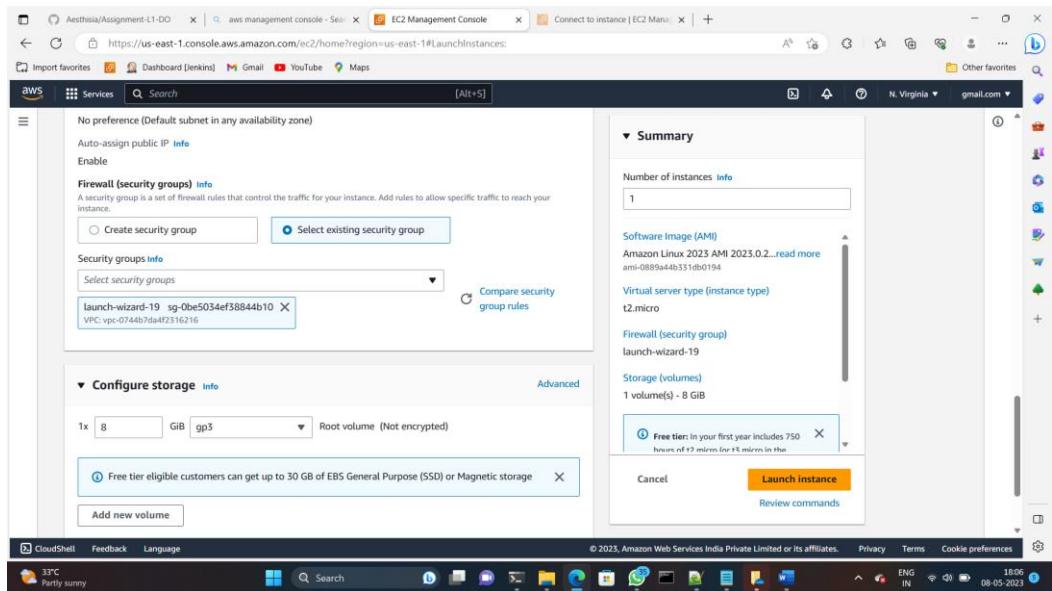


3. For this I choose the amazon linux operating system



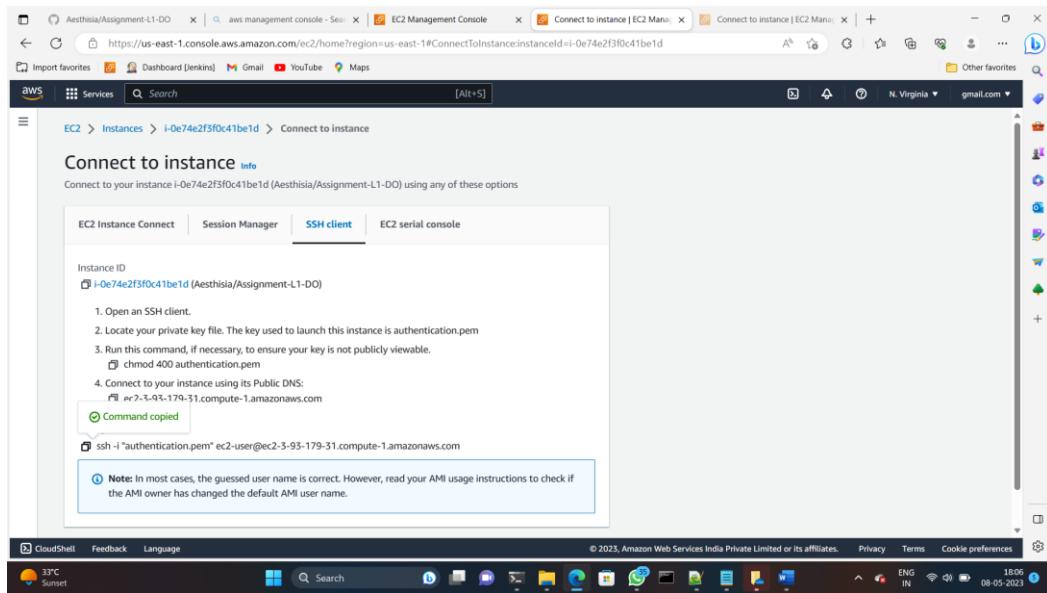
4. I have taken my existing key pair that is **authentication.pem**

5. Selected the existing security group with allowing port **3000**.



Successfully launched the ec2 instance.

Shalini.Kotapuri



Copied the ssh address to connect to the terminal

SSH into your EC2 Instance

1. We are accessing the command line interface with ssh command

```

Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\kotap> cd ..\Downloads\
PS C:\Users\kotap\Downloads> ssh -i "authentication.pem" ec2-user@ec2-3-93-179-31.compute-1.amazonaws.com
The authenticity of host 'ec2-3-93-179-31.compute-1.amazonaws.com (3.93.179.31)' can't be established.
ED25519 key fingerprint is SHA256:3d0fjeSpCs2Yxra/YR+0+90573tQYdklDUU64JpfJI.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-3-93-179-31.compute-1.amazonaws.com' (ED25519) to the list of known hosts.

          _#
         /###_      Amazon Linux 2023
        /###\
       /##/
      /## \
     V-->
    /   /
   /_/
  /_/
 [ec2-user@ip-172-31-88-7 ~]$ 

```

Module – 2: Installing GIT, Docker, and related repos

1. we have to install the git and docker in our instance by using below commands.

➤ **sudo yum -y install git**

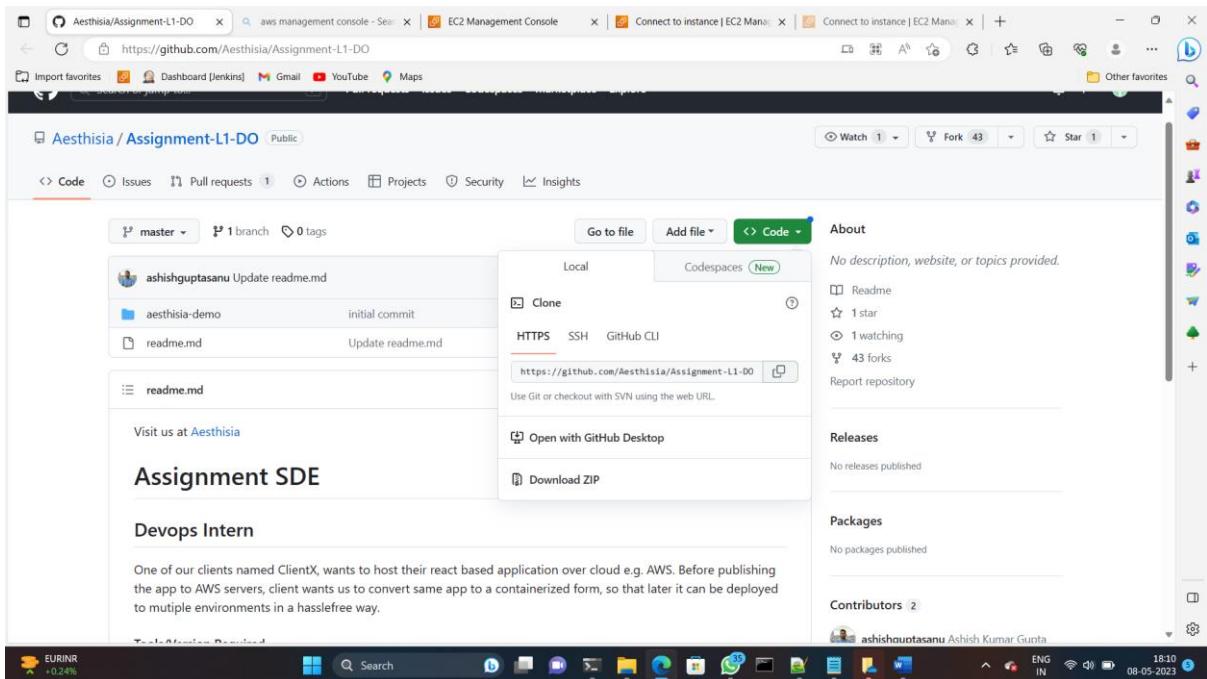
Installed the docker by using the below command.

➤ **sudo yum -y install docker**

```
[ec2-user@ip-172-31-88-7 ~]$ [ec2-user@ip-172-31-88-7 ~]$ sudo yum -y install docker Last metadata expiration check: 0:02:06 ago on Mon May  8 12:36:54 2023. Dependencies resolved. Package Architecture Version Repository Size ===== Installing: docker x86_64 20.10.17-1.amzn2023.0.6 amazonlinux 39 M Installing dependencies: containerd x86_64 1.6.19-1.amzn2023.0.1 amazonlinux 31 M iptables-libc x86_64 1.8.8-3.amzn2023.0.2 amazonlinux 401 k iptables-nft x86_64 1.8.8-3.amzn2023.0.2 amazonlinux 182 k libgroup x86_64 3.0-1.amzn2023.0.1 amazonlinux 75 k libnetfilter_conntrack x86_64 1.0.8-2.amzn2023.0.2 amazonlinux 58 k libnftnl x86_64 1.0.1-19.amzn2023.0.2 amazonlinux 30 k libnftnl x86_64 1.2.2-2.amzn2023.0.2 amazonlinux 84 k pigz x86_64 2.5-1.amzn2023.0.3 amazonlinux 83 k runc x86_64 1.1.4-1.amzn2023.0.1 amazonlinux 3.1 M Transaction Summary ====== Install 10 Packages Total download size: 74 M Installed size: 287 M Downloading Packages: (1/10): libnetfilter_conntrack-1.0.8-2.amzn2023.0.2.x86_64.rpm 839 kB/s | 59 kB 00:00 (2/10): iptables-nft-1.8.8-3.amzn2023.0.2.x86_64.rpm 2.4 MB/s | 183 kB 00:00 (3/10): libgroup-3.0-1.amzn2023.0.1.x86_64.rpm 926 kB/s | 75 kB 00:00 (4/10): iptables-libs-1.8.8-3.amzn2023.0.2.x86_64.rpm 13 MB/s | 401 kB 00:00 (5/10): pigz-2.5-1.amzn2023.0.3.x86_64.rpm 2.3 MB/s | 83 kB 00:00 (6/10): runc-1.1.4-1.amzn2023.0.1.x86_64.rpm 41 MB/s | 3.1 MB 00:00 (7/10): libnftnl-1.0.1-19.amzn2023.0.2.x86_64.rpm 542 kB/s | 30 kB 00:00 (8/10): libnftnl-1.2.2-2.amzn2023.0.2.x86_64.rpm 3.9 MB/s | 84 kB 00:00 (9/10): containerd-1.6.19-1.amzn2023.0.1.x86_64.rpm 38 MB/s | 31 MB 00:00 (10/10): docker-20.10.17-1.amzn2023.0.6.x86_64.rpm 35 MB/s | 39 MB 00:01 Total 57 MB/s | 74 MB 00:01 Running transaction check
```

Cloning project source code from github:

- I copied the code from from github



1. Cloned the project source code using the command.
- **git clone <https://github.com/Aesthisia/Assignment-L1-DO.git>**
2. change the directory to the project directory where your application code is located.
3. **cd Aesthisia/**
4. **cd aesthisia-demo/**

start the docker service:

5. After installing docker , start the docker service by running the following command .
- **sudo systemctl start docker**

6. Enable the docker service by running the following command .

➤ **sudo systemctl enable docker**

7. I haven given the permission to the docker demon in oder to work with docker by running the below command.

➤ `sudo chmod 666 /var/run/docker.sock`

8. In project directory create a new file named “**Dockerfile**” by running the following command .

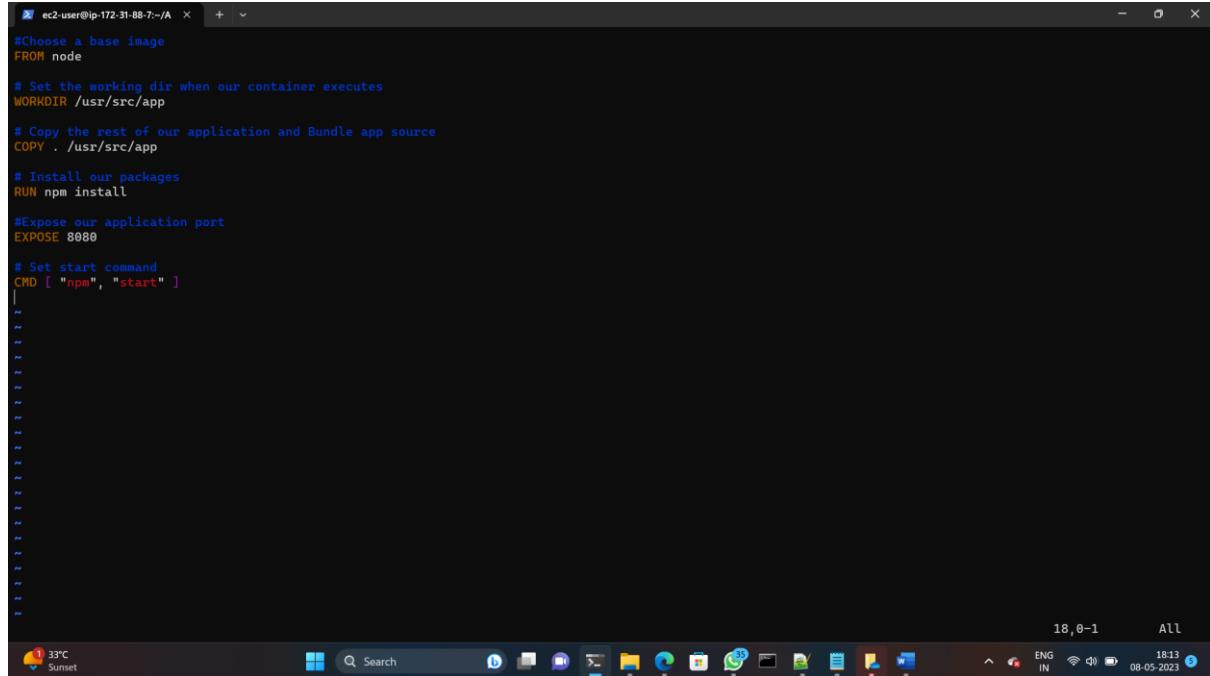
➤ touch Dockerfile

```
[ec2-user@ip-172-31-88-7 aesthisia-demo]$  
[ec2-user@ip-172-31-88-7 aesthisia-demo]$  
[ec2-user@ip-172-31-88-7 aesthisia-demo]$  
[ec2-user@ip-172-31-88-7 aesthisia-demo]$ touch Dockerfile  
[ec2-user@ip-172-31-88-7 aesthisia-demo]$ ls  
Dockerfile README.md package-lock.json package.json public src  
[ec2-user@ip-172-31-88-7 aesthisia-demo]$  
[ec2-user@ip-172-31-88-7 aesthisia-demo]$  
[ec2-user@ip-172-31-88-7 aesthisia-demo]$ sudo vi Dockerfile  
18L, 308B written  
[ec2-user@ip-172-31-88-7 aesthisia-demo]$  
[ec2-user@ip-172-31-88-7 aesthisia-demo]$  
[ec2-user@ip-172-31-88-7 aesthisia-demo]$
```

9. By using **sudo vi Dockerfile** command opened the vim editor.

10. Edit the Dockerfile and specify the instructions for building the docker image.

11. You can see my dockerfile below.



```
# Choose a base image
FROM node

# Set the working dir when our container executes
WORKDIR /usr/src/app

# Copy the rest of our application and Bundle app source
COPY . /usr/src/app

# Install our packages
RUN npm install

#Expose our application port
EXPOSE 8080

# Set start command
CMD [ "npm", "start" ]
```

12. Save the docker file and exit the text editor by using :wq!.

13. After creating the dockerfile, run the following command to build the docker image.

14. The command to create docker image

➤ **docker build -t react .**

react is my image name

```
[ec2-user@ip-172-31-88-7:~/A] + ~
[ec2-user@ip-172-31-88-7 aesthisia-demo]$ 
[ec2-user@ip-172-31-88-7 aesthisia-demo]$ docker build -t react .
Sending build context to Docker daemon 1.226MB
Step 1/6 : FROM node
latest: Pulling from library/node
918547b94326: Pull complete
5d79063aa1c5: Pull complete
4eedd9c5abf7: Pull complete
9cdadd40055f: Pull complete
b58a51cba8a5: Pull complete
b95104135278: Pull complete
155685169ccf: Pull complete
fe64676ed347: Pull complete
Digest: sha256:0efc3ef3fea2822c9d16da084c40181ed7f74b6f45141100580f9887ccc8e9a1
Status: Downloaded newer image for node:latest
--> acd15857ce39
Step 2/6 : WORKDIR /usr/src/app
--> Running in 893273d68ce7
Removing intermediate container 893273d68ce7
--> c8605a7effee8
Step 3/6 : COPY . /usr/src/app
--> 01102b48251f
Step 4/6 : RUN npm install
--> Running in 156527f1533f
npm WARN deprecated svgo@1.3.2: This SVGO version is no longer supported. Upgrade to v2.x.x.
npm WARN deprecated stable@0.1.8: Modern JS already guarantees Array#sort() is a stable sort, so this library is deprecated. See the compatibility table on MDN: https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/sort#browser_compatibility
npm WARN deprecated source-map-resolve@0.6.0: See https://github.com/lydell/source-map-resolve#deprecated

added 1444 packages, and audited 1445 packages in 49s

194 packages are looking for funding
  run `npm fund` for details

14 vulnerabilities (13 high, 1 critical)

To address issues that do not require attention, run:
  npm audit fix

System info:
  - CPU: Intel(R) Core(TM) i5-10210U CPU @ 1.60GHz (4 cores)
  - RAM: 16.0 GiB / 16.0 GiB
  - OS: Ubuntu 22.04 LTS (64-bit)
  - GPU: Intel UHD Graphics (Intel(R) UHD Graphics 620)
  - Network: Intel PRO/100 MT Desktop (Intel(R) Dual Band Wireless-AC 7265)
  - Storage: NVMe SSD (Samsung 970 EVO Plus 1TB)
  - System: 64-bit Linux (5.15.0-102-generic)
  - Kernel: 5.15.0-102-generic
  - Shell: zsh 5.8
  - Terminal: gnome-terminal
  - Date: 08-05-2023 18:18
  - Language: English (India)
  - Region: India
  - Timezone: Asia/Kolkata
```

```
--> 01102b48251f
Step 4/6 : RUN npm install
--> Running in 156527f1533f
npm WARN deprecated svgo@1.3.2: This SVGO version is no longer supported. Upgrade to v2.x.x.
npm WARN deprecated stable@0.1.8: Modern JS already guarantees Array#sort() is a stable sort, so this library is deprecated. See the compatibility table on MDN: https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/sort#browser_compatibility
npm WARN deprecated source-map-resolve@0.6.0: See https://github.com/lydell/source-map-resolve#deprecated

added 1444 packages, and audited 1445 packages in 49s

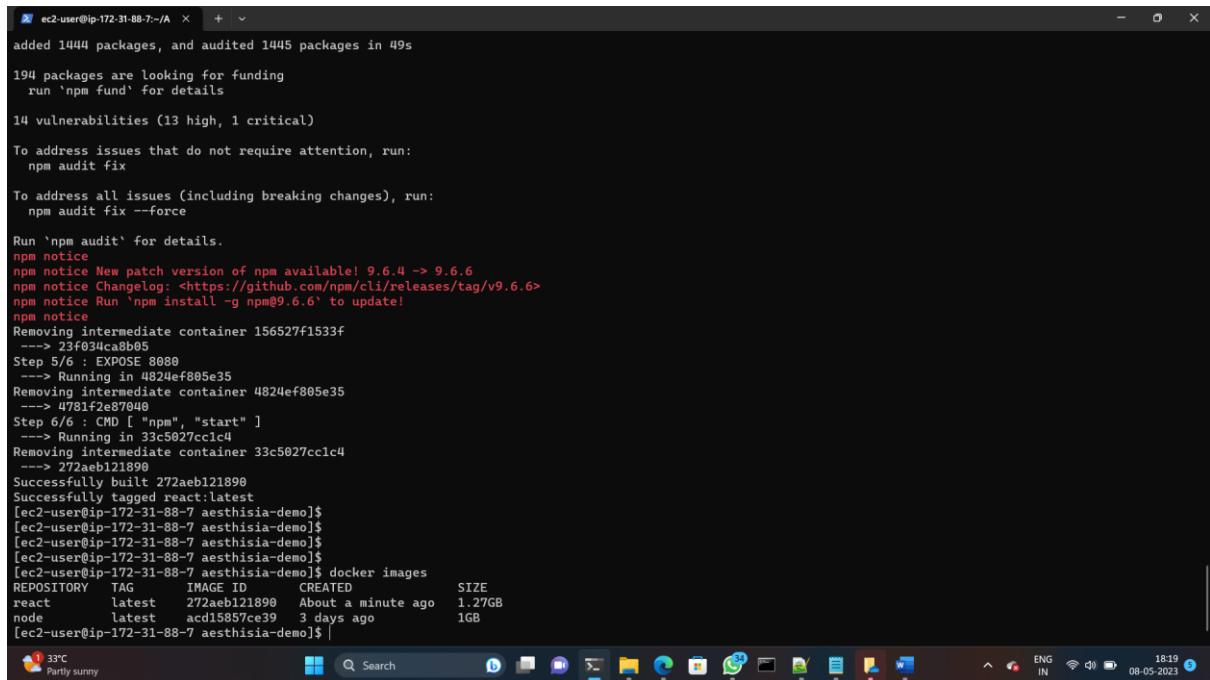
194 packages are looking for funding
  run `npm fund` for details

14 vulnerabilities (13 high, 1 critical)

To address issues that do not require attention, run:
  npm audit fix

To address all issues (including breaking changes), run:
  npm audit fix --force

Run `npm audit` for details.
npm notice
npm notice New patch version of npm available! 9.6.4 -> 9.6.6
npm notice Changelog: <https://github.com/npm/cli/releases/tag/v9.6.6>
npm notice Run `npm install -g npm@9.6.6` to update!
npm notice
Removing intermediate container 156527f1533f
--> 23f034caabb5
Step 5/6 : EXPOSE 8080
--> Running in 4824ef805e35
Removing intermediate container 4824ef805e35
--> 4781f2e87040
Step 6/6 : CMD [ "npm", "start" ]
--> Running in 33c5027cc1c4
Removing intermediate container 33c5027cc1c4
--> 272aeab121899
Successfully built 272aeab121899
Successfully tagged react:latest
[ec2-user@ip-172-31-88-7 aesthisia-demo]$ |
```



```
ec2-user@ip-172-31-88-7:~$ npm audit fix --force
added 1444 packages, and audited 1445 packages in 49s
194 packages are looking for funding
  run 'npm fund' for details
14 vulnerabilities (13 high, 1 critical)

To address issues that do not require attention, run:
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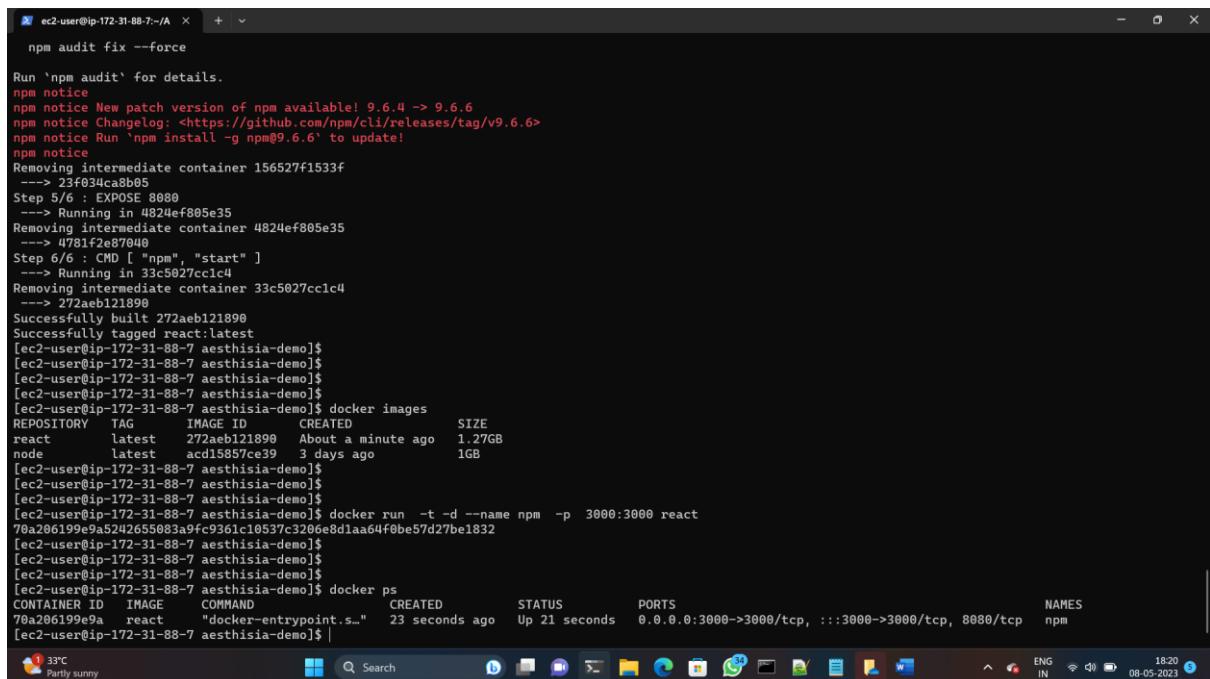
Run 'npm audit' for details.
npm notice
npm notice New patch version of npm available! 9.6.4 -> 9.6.6
npm notice Changelog: <https://github.com/npm/cli/releases/tag/v9.6.6>
npm notice Run 'npm install -g npm@9.6.6' to update!
npm notice
Removing intermediate container 156527f1533f
--> 23f034cab8b05
Step 5/6 : EXPOSE 8080
--> Running in 4824ef805e35
Removing intermediate container 4824ef805e35
--> 4781f2e87040
Step 6/6 : CMD [ "npm", "start" ]
--> Running in 33c5027cc1c4
Removing intermediate container 33c5027cc1c4
--> 272aeb121890
Successfully built 272aeb121890
Successfully tagged react:latest
[ec2-user@ip-172-31-88-7 aesthisia-demo]$
[ec2-user@ip-172-31-88-7 aesthisia-demo]$
[ec2-user@ip-172-31-88-7 aesthisia-demo]$
[ec2-user@ip-172-31-88-7 aesthisia-demo]$
[ec2-user@ip-172-31-88-7 aesthisia-demo]$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
react latest 272aeb121890 About a minute ago 1.27GB
node latest acd15857ce39 3 days ago 1GB
[ec2-user@ip-172-31-88-7 aesthisia-demo]$ |
```

Successfully created the docker image .

15. After building the docker image run the following command to start the docker container.

16. The command to create container from docker image is.

➤ **docker build -t -d --name npm -p 3000:3000 react**



```
ec2-user@ip-172-31-88-7:~$ npm audit fix --force
Run 'npm audit' for details.
npm notice
npm notice New patch version of npm available! 9.6.4 -> 9.6.6
npm notice Changelog: <https://github.com/npm/cli/releases/tag/v9.6.6>
npm notice Run 'npm install -g npm@9.6.6' to update!
npm notice
Removing intermediate container 156527f1533f
--> 23f034cab8b05
Step 5/6 : EXPOSE 8080
--> Running in 4824ef805e35
Removing intermediate container 4824ef805e35
--> 4781f2e87040
Step 6/6 : CMD [ "npm", "start" ]
--> Running in 33c5027cc1c4
Removing intermediate container 33c5027cc1c4
--> 272aeb121890
Successfully built 272aeb121890
Successfully tagged react:latest
[ec2-user@ip-172-31-88-7 aesthisia-demo]$
[ec2-user@ip-172-31-88-7 aesthisia-demo]$
[ec2-user@ip-172-31-88-7 aesthisia-demo]$
[ec2-user@ip-172-31-88-7 aesthisia-demo]$
[ec2-user@ip-172-31-88-7 aesthisia-demo]$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
react latest 272aeb121890 About a minute ago 1.27GB
node latest acd15857ce39 3 days ago 1GB
[ec2-user@ip-172-31-88-7 aesthisia-demo]$ |
[ec2-user@ip-172-31-88-7 aesthisia-demo]$ |
[ec2-user@ip-172-31-88-7 aesthisia-demo]$ docker run -t -d --name npm -p 3000:3000 react
7ba206199e9a5242655083a9fc9361c10537c3206e8daa64f0be57d27be1832
[ec2-user@ip-172-31-88-7 aesthisia-demo]$ |
[ec2-user@ip-172-31-88-7 aesthisia-demo]$ |
[ec2-user@ip-172-31-88-7 aesthisia-demo]$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
7ba206199e9a react "docker-entrypoint.s..." 23 seconds ago Up 21 seconds 0.0.0.0:3000->3000/tcp, :::3000->3000/tcp, 8080/tcp npm
[ec2-user@ip-172-31-88-7 aesthisia-demo]$ |
```

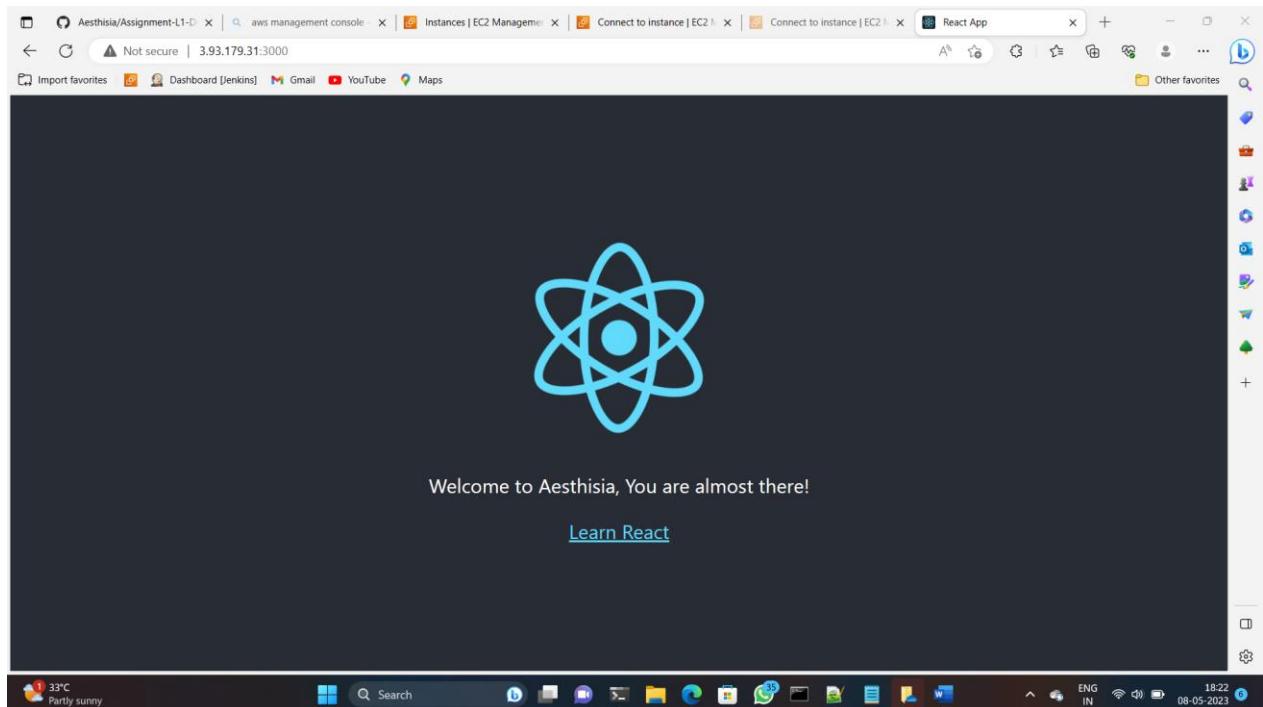
17. To see if container is successfully created or not run the `docker ps` command it will shows the running containers.

18. My docker container is successfully created you can see in the above image and Browse the app.

19. Once the docker container is running . you can browse the app by opening web browser and navigating to the public ip of your instance ,followed by the port 3000.

The screenshot shows the AWS Management Console interface for the EC2 service. In the top navigation bar, there are several tabs: 'Instances (1/1) Info' (highlighted), 'Launch Instances', 'Actions', 'Status checks', 'Monitoring', and 'Tags'. Below this, a search bar and a filter bar are present. The main table displays one instance: 'Aesthisia/Assignment-L1-DO' with Instance ID 'i-0e74e2f3f0c41be1d', which is 'Running' on a 't2.micro' instance type. It has passed 2/2 checks and is in the 'us-east-1b' availability zone. A 'Public IP' column shows 'ec2-3-93-179-31.compute-1.amazonaws.com'. On the left sidebar, under 'Instances', there are sections for 'Instances Types', 'Launch Templates', 'Spot Requests', 'Savings Plans', 'Reserved Instances', 'Dedicated Hosts', 'Scheduled Instances', and 'Capacity Reservations'. At the bottom of the screen, the Windows taskbar is visible with various pinned icons.

The screenshot shows a Microsoft Edge browser window with the URL '3.93.179.31:3000' in the address bar. The page content is a news aggregator or social feed. It features a large image of Tim Cook, the CEO of Apple, with the headline 'Apple CEO Tim Cook Makes BIG Statement on Mass Layoffs | DEETS INSIDE'. Below this are several news cards: 'Shocking! School dropout rate among Muslims is increasing', 'India's largest online store - Great deals & prices everyday - Shop from trust...', and 'The Times of India - 2d ago'. There are also sections for 'Top stories' and 'Feedback'. The browser interface includes a toolbar with icons for search, refresh, and other functions. The Windows taskbar at the bottom shows the date as 08-05-2023 and the time as 18:22.



And the lastly , I had look to see that this was running correctly.

Thank you ,

Shalini.K