Docker -I Assignment 1

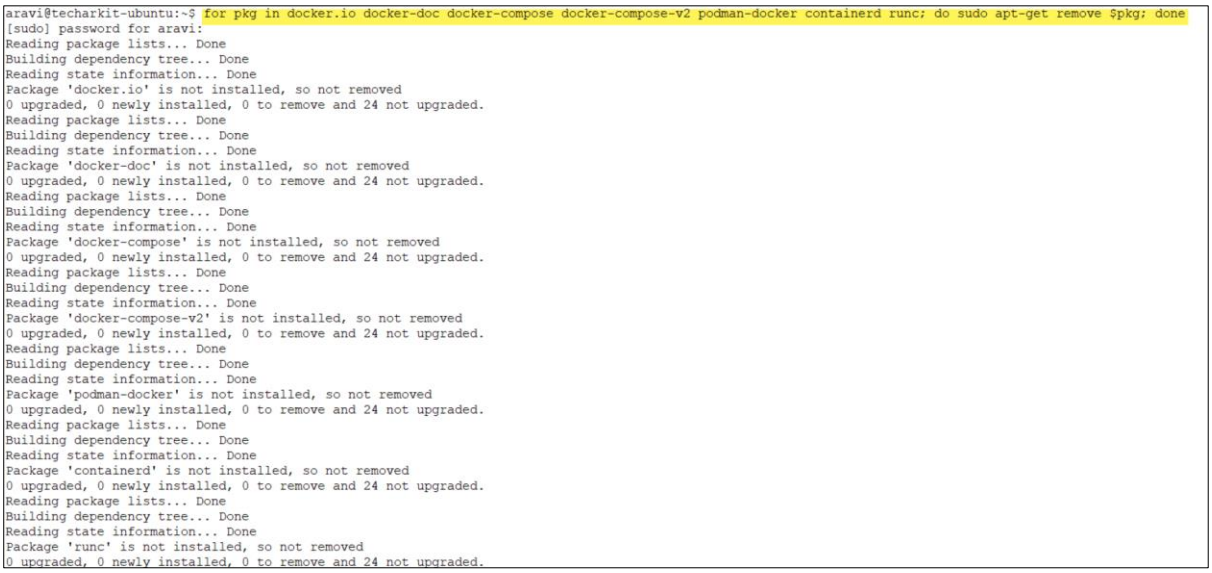
You have been asked to:

- Pull Ubuntu Image.
- Run this container, and map port 80 on the local.
- Install apache2 on this container.
- Check if you can access the Apache page on your browser.

Answer

Uninstall the unofficial version from the Ubuntu Server first

```
for pkg in docker.io docker-doc docker-compose docker-compose-v2 podman-docker containerd runc; do sudo apt-get remove $pkg; done
```



Install the official version using the below command.

```
# Add Docker's official GPG key:
sudo apt-get update
sudo apt-get install ca-certificates curl gnupg
sudo install -m 0755 -d /etc/apt/keyrings
curl -fsSL https://download.docker.com/linux/ubuntu/gpg |
sudo gpg --dearmor -o /etc/apt/keyrings/docker.gpg
sudo chmod a+r /etc/apt/keyrings/docker.gpg

# Add the repository to Apt sources:
echo \
```

```
  "deb [arch="$(dpkg --print-architecture)" signed-
by=/etc/apt/keyrings/docker.gpg]
https://download.docker.com/linux/ubuntu \
  "$(. /etc/os-release && echo "$VERSION_CODENAME")" stable"
| \
  sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
sudo apt-get update
```

```
aravi@techarkit-ubuntu:~$ # Add Docker's official GPG key:
sudo apt-get update
sudo apt-get install ca-certificates curl gnupg
sudo install -m 0755 -d /etc/apt/keyrings
curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o /etc/apt/keyrings/docker.gpg
sudo chmod a+r /etc/apt/keyrings/docker.gpg

# Add the repository to Apt sources:
echo \
  "deb [arch="$(dpkg --print-architecture)" signed-by=/etc/apt/keyrings/docker.gpg] https://download.docker.com/linux/ubuntu \
  "$(. /etc/os-release && echo "$VERSION_CODENAME")" stable" | \
  sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
sudo apt-get update
Hit:1 http://in.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://in.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu jammy-backports InRelease [109 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Fetched 338 kB in 3s (129 kB/s)
Reading package lists... Done
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
ca-certificates is already the newest version (20230311ubuntu0.22.04.1).
ca-certificates set to manually installed.
curl is already the newest version (7.81.0-1ubuntu1.14).
curl set to manually installed.
gnupg is already the newest version (2.2.27-3ubuntu2.1).
gnupg set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 24 not upgraded.
Get:1 https://download.docker.com/linux/ubuntu jammy InRelease [48.8 kB]
Hit:2 http://in.archive.ubuntu.com/ubuntu jammy InRelease
Get:3 https://download.docker.com/linux/ubuntu jammy/stable amd64 Packages [22.7 kB]
Hit:4 http://in.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:5 http://in.archive.ubuntu.com/ubuntu jammy-backports InRelease
Hit:6 http://in.archive.ubuntu.com/ubuntu jammy-security InRelease
Fetched 71.5 kB in 1s (50.0 kB/s)
Reading package lists... Done
```

Install Docker Packages

```
sudo apt-get install docker-ce docker-ce-cli containerd.io
docker-buildx-plugin docker-compose-plugin -y

aravi@techarkit-ubuntu:~$ sudo docker --version
Docker version 24.0.7, build afdd53b
```

Pull the Ubuntu image.

```
aravi@techarkit-ubuntu:~$ sudo docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
aece8493d397: Pull complete
Digest:
sha256:2b7412e6465c3c7fc5bb21d3e6f1917c167358449fecac8176c6e4
96e5c1f05f
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
```

```
aravi@techarkit-ubuntu:~$ sudo docker images
REPOSITORY   TAG       IMAGE ID       CREATED       SIZE
ubuntu       latest    e4c58958181a   5 weeks ago   77.8MB
```

Running the downloaded Ubuntu Image using the below docker command

```
aravi@techarkit-ubuntu:~$ sudo docker run -it -d -p 80:80
ubuntu
1a7657486556e129fcd64676afe92522e753c30dad68713161596171c4624
f2e
```

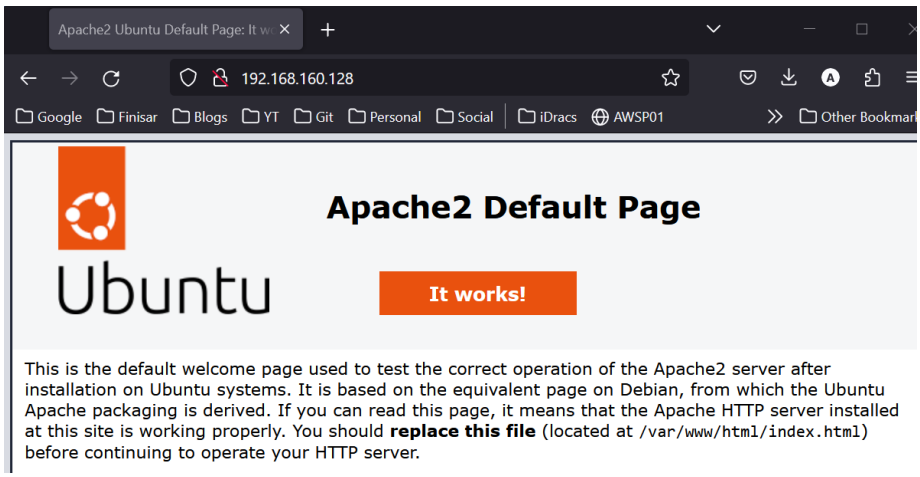
Access the Container Bash shell using the below command.

```
aravi@techarkit-ubuntu:~$ sudo docker ps -a
CONTAINER ID   IMAGE     COMMAND       CREATED         STATUS
PORTS                                  NAMES
1a7657486556   ubuntu    "/bin/bash"   3 minutes ago   Up 3
minutes   0.0.0.0:80->80/tcp, :::80->80/tcp
inspiring_cartwright

aravi@techarkit-ubuntu:~$ sudo docker exec -it 1a7657486556
/bin/bash
root@1a7657486556:/#
```

Install and start the Apache Service inside the container.

```
root@1a7657486556:/# sudo apt update
root@1a7657486556:/# sudo apt install apache2 -y

root@1a7657486556:/# service apache2 status
 * apache2 is not running

root@1a7657486556:/# service apache2 start
 * Starting Apache httpd web server apache2
AH00558: apache2: Could not reliably determine the server's
fully qualified domain name, using 172.17.0.2. Set the
'ServerName' directive globally to suppress this message
 *

root@1a7657486556:/# service apache2 status
 * apache2 is running

aravi@techarkit-ubuntu:~$ sudo ss -alntup |grep 80
tcp   LISTEN 0      4096                 0.0.0.0:80
0.0.0.0:*    users:(("docker-proxy",pid=3075,fd=4))
tcp   LISTEN 0      4096                    [::]:80
[::]:*    users:(("docker-proxy",pid=3081,fd=4))
```

Access the web page using the browser since Apache is started and running inside the container.



Task Completed successfully.