Module 3: Docker Part 1 Assignment-1

Pre-requisites:

- An aws instace with docker installed

Docker installation:

- sudo apt-get update
- sudo apt-get install docker.io -y

1. Pull Ubuntu container

- Ubuntu image is pulled using "docker pull" command

```
ubuntu@ip-172-31-45-255:~$ docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
a48641193673: Pull complete
Digest: sha256:6042500cf4b44023ea1894effe7890666b0c5c7871ed83a97c36c76ae560bb9b
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
ubuntu@ip-172-31-45-255:~$
```

- Listing the docker images by "docker images" command

```
ubuntu@ip-172-31-45-255:~$ docker images
REPOSITORY        TAG        IMAGE ID        CREATED        SIZE
ubuntu            latest     174c8c134b2a    8 days ago     77.9MB
kevin/custom      latest     aca5d3f07411    2 weeks ago    240MB
venkat/custom     latest     18c42ccf14b9    2 weeks ago    240MB
hello-world       latest     9c7a54a9a43c    7 months ago   13.3kB
```

2. Run this container and map port 80 on the local

- Running the container from ubuntu image on port 80 using "docker run" command

```
ubuntu@ip-172-31-45-255:~$ docker run -it -d -p 80:80 ubuntu
2c9841a7b910849d10bd71df9d6aa066a16e9b2d4a11f72bac84fba4449ebac8
ubuntu@ip-172-31-45-255:~$
```

3. Install Apache2 on this container

- Navigated into the container by "docker exec" command

```
ubuntu@ip-172-31-45-255:~$ docker exec -it 2c9841a7b910 /bin/bash
root@2c9841a7b910:/# sudo apt update
```

- Packages are updated by "apt update"

```
root@2c9841a7b910:/# apt-get update
Get:1 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy InRelease [270 kB]
Get:3 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [1326 kB]
Get:4 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [1046 kB]
Get:5 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [44.0 kB]
Get:6 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [1572 kB]
Get:7 http://archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:8 http://archive.ubuntu.com/ubuntu jammy-backports InRelease [109 kB]
Get:9 http://archive.ubuntu.com/ubuntu jammy/main amd64 Packages [1792 kB]
Get:10 http://archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [266 kB]
Get:11 http://archive.ubuntu.com/ubuntu jammy/restricted amd64 Packages [164 kB]
Get:12 http://archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [17.5 MB]
Get:13 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1599 kB]
Get:14 http://archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1305 kB]
Get:15 http://archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [1602 kB]
Get:16 http://archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [49.8 kB]
Get:17 http://archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [50.4 kB]
Get:18 http://archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [28.1 kB]
Fetched 28.9 MB in 3s (9003 kB/s)
Reading package lists... Done
```

- Apache server is installed into the container

```
root@2c9841a7b910:/# apt-get install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils bzip2 ca-certificates file libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap libbrotli1
  libcurl4 libexpat1 libgdbm-compat4 libgdbm6 libicu70 libjansson4 libldap-2.5-0 libldap-common liblua5.3-0 libmagic-mgc libmagic1
  libnghttp2-14 libperl5.34 libpsl5 librtmp1 libsasl2-2 libsasl2-modules libsasl2-modules-db libsqlite3-0 libssh-4 libxml2 mailcap
  media-types mime-support netbase openssl perl perl-modules-5.34 publicsuffix ssl-cert xz-utils
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser ufw bzip2-doc gdbm-l10n libsasl2-modules-gssapi-mit
  | libsasl2-modules-gssapi-heimdal libsasl2-modules-ldap libsasl2-modules-otp libsasl2-modules-sql perl-doc libterm-readline-gnu-perl
  | libterm-readline-perl-perl make libtap-harness-archive-perl
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils bzip2 ca-certificates file libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap
  libbrotli1 libcurl4 libexpat1 libgdbm-compat4 libgdbm6 libicu70 libjansson4 libldap-2.5-0 libldap-common liblua5.3-0 libmagic-mgc
  libmagic1 libnghttp2-14 libperl5.34 libpsl5 librtmp1 libsasl2-2 libsasl2-modules libsasl2-modules-db libsqlite3-0 libssh-4 libxml2
  mailcap media-types mime-support netbase openssl perl perl-modules-5.34 publicsuffix ssl-cert xz-utils
0 upgraded, 43 newly installed, 0 to remove and 0 not upgraded.
Need to get 25.6 MB of archives.
After this operation, 111 MB of additional disk space will be used.
```

```
root@2c9841a7b910:/# service apache2 start
 * Starting Apache httpd web server apache2
AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 172.17.0.3. Set the 'ServerName' directive glo
bally to suppress this message
 *
```

4. Check if you are able to access the Apache page on your browser

- Apache server is accessed successfully on port 80