**DOCKER-ASSIGNMENT**

NOTE: Do not forget to see manual page using "--help" option in command when searching for options/commands for a particular task.

1. Install Docker, either on your native OS or on a VM. Make sure it runs. Type "docker -v" to check if it's installed.

If you can't install or configure Docker, you can use the online docker setup to do the assignment.

Step1 Goto:- https://www.katacoda.com/courses/kubernetes/playground

Step2 Click on "continue" button on the left panel

Step3 Click on "launch.sh" button on the left panel

Step4 From the right panel use the top console to execute below command:-

docker -v

**Answer:** H:\>docker -v

Docker version 20.10.7, build f0df350

--------------------------------------------------------------------------------------------------------------------------------------

Try below commands for help

docker --help ---> This command shows all available options and commands to work with images and containers

docker image --help ---> This command shows all the avaialble options and commands to work with docker images

docker container --help ---> This command shows all the avaialble options and commands to work with docker containers

NOTE:- DO NOT TRY TO USE INTERNET TO SOLVE ASSIGNMENT, BETTER USE THE ABOVE --help OPTION TO SEE THE MANUAL OF ANY PARTICULAR COMMAND AND FIGURE OUT THE SOLUTIONS ON YOUR OWN.

--------------------------------------------------------------------------------------------------------------------------------------

2. Find a image from dockerhub of your choice(recommeded: nginx), don't use browser, pull the official image from dockerhub

**ANSWER:**

H:\>docker pull nginx:latest

latest: Pulling from library/nginx

33847f680f63: Pull complete

dbb907d5159d: Pull complete

8a268f30c42a: Pull complete

b10cf527a02d: Pull complete

c90b090c213b: Pull complete

1f41b2f2bf94: Pull complete

Digest: sha256:8f335768880da6baf72b70c701002b45f4932acae8d574dedfddaf967fc3ac90

Status: Downloaded newer image for nginx:latest

docker.io/library/nginx:latest

-------------------------------------------------------------------------------------------------------------------------------------

3. List all the available images in your machine/vm, make sure you see recently pulled image in the list.

**ANSWER:**

H:\>docker images

REPOSITORY TAG IMAGE ID CREATED SIZE

nginx latest 08b152afcfae 7 days ago 133MB

--------------------------------------------------------------------------------------------------------------------------------------

4. Find out the "Full" ImageId of the image that you pulled and write it below.

**ANSWER:**

H:\>docker inspect nginx

"Id": "sha256:08b152afcfae220e9709f00767054b824361c742ea03a9fe936271ba520a0a4b",

"RepoTags": [

"nginx:latest"

]

--------------------------------------------------------------------------------------------------------------------------------------

5. Create a container of your image

**ANSWER:**

H:\>docker run -it --name myNginx nginx

/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration

/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/

/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh

10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf

10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf

/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh

/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh

/docker-entrypoint.sh: Configuration complete; ready for start up

2021/07/29 09:59:37 [notice] 1#1: using the "epoll" event method

2021/07/29 09:59:37 [notice] 1#1: nginx/1.21.1

2021/07/29 09:59:37 [notice] 1#1: built by gcc 8.3.0 (Debian 8.3.0-6)

2021/07/29 09:59:37 [notice] 1#1: OS: Linux 5.10.16.3-microsoft-standard-WSL2

2021/07/29 09:59:37 [notice] 1#1: getrlimit(RLIMIT\_NOFILE): 1048576:1048576

2021/07/29 09:59:37 [notice] 1#1: start worker processes

2021/07/29 09:59:37 [notice] 1#1: start worker process 31

2021/07/29 09:59:37 [notice] 1#1: start worker process 32

2021/07/29 09:59:37 [notice] 1#1: start worker process 33

2021/07/29 09:59:37 [notice] 1#1: start worker process 34

--------------------------------------------------------------------------------------------------------------------------------------

6. List all the running container

**ANSWER:**

H:\>docker ps

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

0728c84035f4 nginx "/docker-entrypoint.…" 10 seconds ago Up 5 seconds 80/tcp mynginx

-----------------------------------------------------------------------------------------------------------------------------------------------------------

7. List all the running and stopped containers

**ANSWER:**

H:\>docker ps -a

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

0728c84035f4 nginx "/docker-entrypoint.…" 20 seconds ago Up 16 seconds 80/tcp mynginx

97124960b945 nginx "/docker-entrypoint.…" 8 minutes ago Exited (0) 5 minutes ago myNginx

-----------------------------------------------------------------------------------------------------------------------------------------------------------

8. Find out the "Full" containerId of the container and write it below.

**ANSWER:**

H:\>docker inspect mynginx

"Id": "0728c84035f43f7715974d096b283744d82c93baa643de72c2b99f358d2f872a"

-----------------------------------------------------------------------------------------------------------------------------------------------------------

9. Find out how many image layers are used to build this image.

**ANSWER:**

H:\>docker image history -H nginx

IMAGE CREATED CREATED BY SIZE COMMENT

08b152afcfae 7 days ago /bin/sh -c #(nop) CMD ["nginx" "-g" "daemon… 0B

<missing> 7 days ago /bin/sh -c #(nop) STOPSIGNAL SIGQUIT 0B

<missing> 7 days ago /bin/sh -c #(nop) EXPOSE 80 0B

<missing> 7 days ago /bin/sh -c #(nop) ENTRYPOINT ["/docker-entr… 0B

<missing> 7 days ago /bin/sh -c #(nop) COPY file:09a214a3e07c919a… 4.61kB

<missing> 7 days ago /bin/sh -c #(nop) COPY file:0fd5fca330dcd6a7… 1.04kB

<missing> 7 days ago /bin/sh -c #(nop) COPY file:0b866ff3fc1ef5b0… 1.96kB

<missing> 7 days ago /bin/sh -c #(nop) COPY file:65504f71f5855ca0… 1.2kB

<missing> 7 days ago /bin/sh -c set -x && addgroup --system -… 63.9MB

<missing> 7 days ago /bin/sh -c #(nop) ENV PKG\_RELEASE=1~buster 0B

<missing> 7 days ago /bin/sh -c #(nop) ENV NJS\_VERSION=0.6.1 0B

<missing> 7 days ago /bin/sh -c #(nop) ENV NGINX\_VERSION=1.21.1 0B

<missing> 7 days ago /bin/sh -c #(nop) LABEL maintainer=NGINX Do… 0B

<missing> 7 days ago /bin/sh -c #(nop) CMD ["bash"] 0B

<missing> 7 days ago /bin/sh -c #(nop) ADD file:45f5dfa135c848a34… 69.3MB

-----------------------------------------------------------------------------------------------------------------------------------------------------------

10. Get the Apache Tomcat 7 server image from the docker hub.

**ANSWER:**

H:\>docker pull tomcat:7.0

7.0: Pulling from library/tomcat

0bc3020d05f1: Pull complete

a110e5871660: Pull complete

83d3c0fa203a: Pull complete

a8fd09c11b02: Pull complete

96ebf1506065: Pull complete

26b72ffca293: Pull complete

0bffa2ea17aa: Pull complete

d880cebcc7a6: Pull complete

d19ab8039b36: Pull complete

5057492dc495: Pull complete

Digest: sha256:f7d37d248d0eacec1e5995736234c9c22155626fcb27ea3ead13b9db24e698f7

Status: Downloaded newer image for tomcat:7.0

docker.io/library/tomcat:7.0

-----------------------------------------------------------------------------------------------------------------------------------------------------------

11. Run the Apache Tomcat 7, I mean create a container of Apache Tomcat.

**ANSWER:**

H:\>docker run -it --name tom tomcat:7.0

Using CATALINA\_BASE: /usr/local/tomcat

Using CATALINA\_HOME: /usr/local/tomcat

Using CATALINA\_TMPDIR: /usr/local/tomcat/temp

Using JRE\_HOME: /usr/local/openjdk-8

Using CLASSPATH: /usr/local/tomcat/bin/bootstrap.jar:/usr/local/tomcat/bin/tomcat-juli.jar

Using CATALINA\_OPTS:

Jul 29, 2021 11:17:49 AM org.apache.catalina.startup.VersionLoggerListener log

INFO: Server version name: Apache Tomcat/7.0.109

Jul 29, 2021 11:17:49 AM org.apache.catalina.startup.VersionLoggerListener log

-----------------------------------------------------------------------------------------------------------------------------------------------------------

12. Find out what is the IP Address of the Apache Tomcat Container that it is running on

**ANSWER:**

"IPAddress": "172.17.0.3",

-----------------------------------------------------------------------------------------------------------------------------------------------------------

13. Which Port it is using?

**ANSWER:**

C:\Windows\system32>docker ps -a

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

bfce9304aa64 tomcat:7.0 "catalina.sh run" 13 minutes ago Up About a minute 8080/tcp tom

-----------------------------------------------------------------------------------------------------------------------------------------------------------

14. Try to access the Tomcat's home page from your machine/vm.

**ANSWER:** YES ACCESSED .

-----------------------------------------------------------------------------------------------------------------------------------------------------------

15. What is the disk size of Apache Tomcat image?

**ANSWER:**

C:\Windows\system32>docker images -a

REPOSITORY TAG IMAGE ID CREATED SIZE

nginx latest 08b152afcfae 7 days ago 133MB

tomcat 7.0 9dfd74e6bc2f 3 weeks ago 533MB

-----------------------------------------------------------------------------------------------------------------------------------------------------------

16. Find out list of all environment variables that is configured for tomcat image, can you see JAVA\_HOME and CATALINA\_HOME? What did you notice about it?

**ANSWER:**

H:\>docker logs tom

Using CATALINA\_BASE: /usr/local/tomcat

Using CATALINA\_HOME: /usr/local/tomcat

Using CATALINA\_TMPDIR: /usr/local/tomcat/temp

Using JRE\_HOME: /usr/local/openjdk-8

Using CLASSPATH: /usr/local/tomcat/bin/bootstrap.jar:/usr/local/tomcat/bin/tomcat-juli.jar

-----------------------------------------------------------------------------------------------------------------------------------------------------------

17. Find out which port is exposed for tomcat?

**ANSWER:**

"ExposedPorts": {

"8080/tcp": {}

},

-----------------------------------------------------------------------------------------------------------------------------------------------------------

18. Run multiple conntainers of tomcat on different port and access it's home page.

**ANSWER:**

C:\Windows\system32>docker ps -a

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

2e585cba6137 tomcat "catalina.sh run" About a minute ago Up About a minute 0.0.0.0:8087->8080/tcp, :::8087->8080/tcp mytom4

da69206c38be tomcat "catalina.sh run" 3 minutes ago Up 3 minutes 0.0.0.0:8089->8080/tcp, :::8089->8080/tcp mytom3

-----------------------------------------------------------------------------------------------------------------------------------------------------------

19. Pull ubuntu os from dockerhub, try to pull 2 images of ubuntu, Except the latest one.

**ANSWER:**

H:\>docker pull ubuntu:20.04

20.04: Pulling from library/ubuntu

16ec32c2132b: Pull complete

Digest: sha256:82becede498899ec668628e7cb0ad87b6e1c371cb8a1e597d83a47fac21d6af3

Status: Downloaded newer image for ubuntu:20.04

docker.io/library/ubuntu:20.04

H:\>docker pull ubuntu:20.10

20.10: Pulling from library/ubuntu

32f3531c8415: Pull complete

Digest: sha256:a7b08558af07bcccca994b01e1c84f1d14a2156e0099fcf7fcf73f52d082791e

Status: Downloaded newer image for ubuntu:20.10

docker.io/library/ubuntu:20.10

-----------------------------------------------------------------------------------------------------------------------------------------------------------

20. Run the container of ubuntu in attached mode.

**ANSWER:**

H:\>docker attach myubuntu1

root@ca008c45616a:/# ls

bin boot dev etc home lib lib32 lib64 libx32 media mnt opt proc root run sbin srv sys tmp usr var

root@ca008c45616a:/#

-----------------------------------------------------------------------------------------------------------------------------------------------------------

21. Run the container of another ubuntu in detached mode.

**ANSWER:**

H:\>docker attach myubuntu1

root@ca008c45616a:/# ls

bin boot dev etc home lib lib32 lib64 libx32 media mnt opt proc root run sbin srv sys tmp usr var

root@ca008c45616a:/# read escape sequence

H:\>docker ps -a

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

ca008c45616a ubuntu:20.04 "bash" 11 minutes ago Up 11 minutes myubuntu1

H:\>docker run -it --name myubuntu2 ubuntu:20.10

root@a0d8af452b3b:/#

-----------------------------------------------------------------------------------------------------------------------------------------------------------

22. Check how many ubuntu containers are running and stopped

**ANSWER:**

H:\>docker ps -a

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

a0d8af452b3b ubuntu:20.10 "bash" 2 minutes ago Up About a minute myubuntu2

ca008c45616a ubuntu:20.04 "bash" 14 minutes ago Up 14 minutes myubuntu1

3a1a0c37199f ubuntu:20.04 "bash" 15 minutes ago Exited (0) 14 minutes ago ubuntu1

bfce9304aa64 tomcat:7.0 "catalina.sh run" 23 hours ago Exited (143) 22 hours ago tom

25d2d418de91 tomcat:7.0 "catalina.sh run" 23 hours ago Exited (143) 23 hours ago mytom1

b31c58a42195 tomcat:7.0 "catalina.sh run" 23 hours ago Exited (143) 23 hours ago mytom

18e08d6fe3ab tomcat:7.0 "catalina.sh run" 23 hours ago Exited (143) 23 hours ago romantic\_heyrovsky

-----------------------------------------------------------------------------------------------------------------------------------------------------------

23. Is the tomcat container running? If no, start one.

**ANSWER:**

H:\>docker start tom

tom

H:\>docker ps -a

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

a0d8af452b3b ubuntu:20.10 "bash" 4 minutes ago Up 3 minutes myubuntu2

ca008c45616a ubuntu:20.04 "bash" 16 minutes ago Up 16 minutes myubuntu1

3a1a0c37199f ubuntu:20.04 "bash" 17 minutes ago Exited (0) 16 minutes ago ubuntu1

bfce9304aa64 tomcat:7.0 "catalina.sh run" 23 hours ago Up 5 seconds 8080/tcp tom

-----------------------------------------------------------------------------------------------------------------------------------------------------------

24. Check the logs, generated by tomcat container(don't forget to make request to tomcat's home page to see the log).

**ANSWER:**

H:\>docker logs tom

Using CATALINA\_BASE: /usr/local/tomcat

Using CATALINA\_HOME: /usr/local/tomcat

Using CATALINA\_TMPDIR: /usr/local/tomcat/temp

Using JRE\_HOME: /usr/local/openjdk-8

Using CLASSPATH: /usr/local/tomcat/bin/bootstrap.jar:/usr/local/tomcat/bin/tomcat-juli.jar

Using CATALINA\_OPTS:

Jul 29, 2021 11:17:49 AM org.apache.catalina.startup.VersionLoggerListener log

INFO: Server version name: Apache Tomcat/7.0.109

Jul 29, 2021 11:17:49 AM org.apache.catalina.startup.VersionLoggerListener log

INFO: Server built: Apr 22 2021 18:43:38 UTC

Jul 29, 2021 11:17:49 AM org.apache.catalina.startup.VersionLoggerListener log

INFO: Server version number: 7.0.109.0

Jul 29, 2021 11:17:49 AM org.apache.catalina.startup.VersionLoggerListener log

INFO: OS Name: Linux

Jul 29, 2021 11:17:49 AM org.apache.catalina.startup.VersionLoggerListener log

INFO: OS Version: 5.10.16.3-microsoft-standard-WSL2

Jul 29, 2021 11:17:49 AM org.apache.catalina.startup.VersionLoggerListener log

INFO: Architecture: amd64

Jul 29, 2021 11:17:49 AM org.apache.catalina.startup.VersionLoggerListener log

INFO: Java Home: /usr/local/openjdk-8/jre

Jul 29, 2021 11:17:49 AM org.apache.catalina.startup.VersionLoggerListener log

INFO: JVM Version: 1.8.0\_292-b10

Jul 29, 2021 11:17:49 AM org.apache.catalina.startup.VersionLoggerListener log

INFO: JVM Vendor: Oracle Corporation

Jul 29, 2021 11:17:49 AM org.apache.catalina.startup.VersionLoggerListener log

INFO: CATALINA\_BASE: /usr/local/tomcat

Jul 29, 2021 11:17:49 AM org.apache.catalina.startup.VersionLoggerListener log

INFO: CATALINA\_HOME: /usr/local/tomcat

Jul 29, 2021 11:17:49 AM org.apache.catalina.startup.VersionLoggerListener log

INFO: Command line argument: -Djava.util.logging.config.file=/usr/local/tomcat/conf/logging.properties

Jul 29, 2021 11:17:49 AM org.apache.catalina.startup.VersionLoggerListener log

INFO: Command line argument: -Djava.util.logging.manager=org.apache.juli.ClassLoaderLogManager

Jul 29, 2021 11:17:49 AM org.apache.catalina.startup.VersionLoggerListener log

INFO: Command line argument: -Djdk.tls.ephemeralDHKeySize=2048

-----------------------------------------------------------------------------------------------------------------------------------------------------------

25. Check if ubuntu conatiner is running? If no, start one in attached mode to the terminal.

**ANSWER:**

H:\>docker ps -a

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

a0d8af452b3b ubuntu:20.10 "bash" 7 minutes ago Up 7 minutes myubuntu2

ca008c45616a ubuntu:20.04 "bash" 19 minutes ago Up 19 minutes myubuntu1

3a1a0c37199f ubuntu:20.04 "bash" 20 minutes ago Exited (0) 19 minutes ago ubuntu1

bfce9304aa64 tomcat:7.0 "catalina.sh run" 23 hours ago Up 3 minutes 8080/tcp tom

25d2d418de91 tomcat:7.0 "catalina.sh run" 23 hours ago Exited (143) 23 hours ago mytom1

-----------------------------------------------------------------------------------------------------------------------------------------------------------

26. Login as root user in ubuntu container

**ANSWER:**

H:\>docker attach myubuntu1

root@ca008c45616a:/#

-----------------------------------------------------------------------------------------------------------------------------------------------------------

27. Create a file with any name in root directory

**ANSWER:**

H:\>docker attach myubuntu1

root@ca008c45616a:/# ls

bin boot dev etc home lib lib32 lib64 libx32 media mnt opt proc root run sbin srv sys tmp usr var

root@ca008c45616a:/# mkdir test

root@ca008c45616a:/# ls

bin boot dev etc home lib lib32 lib64 libx32 media mnt opt proc root run sbin srv sys test tmp usr var

root@ca008c45616a:/# cd test

root@ca008c45616a:/test# ls

root@ca008c45616a:/test# touch file1.txt

root@ca008c45616a:/test# ls

file1.txt

root@ca008c45616a:/test#

-----------------------------------------------------------------------------------------------------------------------------------------------------------

28. Install software of your choice in ubuntu container using "apt-get install"

**ANSWER:**

root@ca008c45616a:/# apt-get install python3

Reading package lists... Done

Building dependency tree

Reading state information... Done

The following additional packages will be installed:

file libexpat1 libmagic-mgc libmagic1 libmpdec2 libpython3-stdlib libpython3.8-minimal libpython3.8-stdlib libreadline8 libsqlite3-0 libssl1.1 mime-support python3-minimal python3.8 python3.8-minimal

readline-common xz-utils

Suggested packages:

python3-doc python3-tk python3-venv python3.8-venv python3.8-doc binutils binfmt-support readline-doc

The following NEW packages will be installed:

file libexpat1 libmagic-mgc libmagic1 libmpdec2 libpython3-stdlib libpython3.8-minimal libpython3.8-stdlib libreadline8 libsqlite3-0 libssl1.1 mime-support python3 python3-minimal python3.8 python3.8-minimal

readline-common xz-utils

0 upgraded, 18 newly installed, 0 to remove and 0 not upgraded.

Need to get 7392 kB of archives.

After this operation, 32.8 MB of additional disk space will be used.

Do you want to continue? [Y/n] y

Get:1 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 libssl1.1 amd64 1.1.1f-1ubuntu2.4 [1319 kB]

Get:2 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 libpython3.8-minimal amd64 3.8.10-0ubuntu1~20.04 [717 kB]

--------------------------------------------

------------------------------------------

Setting up libreadline8:amd64 (8.0-4) ...

Setting up libpython3.8-stdlib:amd64 (3.8.10-0ubuntu1~20.04) ...

Setting up python3.8 (3.8.10-0ubuntu1~20.04) ...

Setting up libpython3-stdlib:amd64 (3.8.2-0ubuntu2) ...

Setting up python3 (3.8.2-0ubuntu2) ...

running python rtupdate hooks for python3.8...

running python post-rtupdate hooks for python3.8...

Processing triggers for libc-bin (2.31-0ubuntu9.2) ...

root@ca008c45616a:/# python3

Python 3.8.10 (default, Jun 2 2021, 10:49:15)

[GCC 9.4.0] on linux

Type "help", "copyright", "credits" or "license" for more information.

>>> print("hello world")

-----------------------------------------------------------------------------------------------------------------------------------------------------------

29. Now exit the ubuntu shell, are you back to your host machine, if not, come back to the host machine.

**ANSWER:**

root@ca008c45616a:/# python3

Python 3.8.10 (default, Jun 2 2021, 10:49:15)

[GCC 9.4.0] on linux

Type "help", "copyright", "credits" or "license" for more information.

>>> print("hello world")read escape sequence

H:\>cls

-----------------------------------------------------------------------------------------------------------------------------------------------------------

30. Check if the ubuntu container is running.

**ANSWER:**

YES RUNNING.

H:\>docker ps -a

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

a0d8af452b3b ubuntu:20.10 "bash" 24 minutes ago Up 23 minutes myubuntu2

ca008c45616a ubuntu:20.04 "bash" 36 minutes ago Up 36 minutes myubuntu1

-----------------------------------------------------------------------------------------------------------------------------------------------------------

31. Create a new ubuntu container out of the same image as that previous container in attached mode.

**ANSWER:**

H:\>docker run -it --name myubuntu-1 ubuntu:20.04

root@a7c838ec0f48:/# ls

bin boot dev etc home lib lib32 lib64 libx32 media mnt opt proc root run sbin srv sys tmp usr var

root@a7c838ec0f48:/#

-----------------------------------------------------------------------------------------------------------------------------------------------------------

32. Login as a root user

**ANSWER:**

H:\>docker run -it --name myubuntu-1 ubuntu:20.04

root@a7c838ec0f48:/# ls

bin boot dev etc home lib lib32 lib64 libx32 media mnt opt proc root run sbin srv sys tmp usr var

root@a7c838ec0f48:/#

-----------------------------------------------------------------------------------------------------------------------------------------------------------

33. Check if you can see the file created in previous container, you will not see the file as well as software that you installed in the previous container. Now kill this Container.

**ANSWER:**  NO

root@a7c838ec0f48:/# ls

bin boot dev etc home lib lib32 lib64 libx32 media mnt opt proc root run sbin srv sys tmp usr var

root@a7c838ec0f48:/# exit

exit

H:\>docker ps -a

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

a7c838ec0f48 ubuntu:20.04 "bash" 6 minutes ago Exited (0) 6 seconds ago myubuntu-1

a0d8af452b3b ubuntu:20.10 "bash" 33 minutes ago Up 33 minutes myubuntu2

ca008c45616a ubuntu:20.04 "bash" 45 minutes ago Up 45 minutes myubuntu1

-----------------------------------------------------------------------------------------------------------------------------------------------------------

34. Do you have the previous ubuntu container where you created the file and installed the software? If no reapeat step 25 to 29.

**ANSWER:**  YES

H:\>docker attach myubuntu1

root@ca008c45616a:/# ls

bin boot dev etc home lib lib32 lib64 libx32 media mnt opt proc root run sbin srv sys test tmp usr var

root@ca008c45616a:/#

-----------------------------------------------------------------------------------------------------------------------------------------------------------

35. Create an Image out of the existing container.

**ANSWER:**

H:\>docker commit myubuntu1

sha256:28a2b1909a0ddbfa0c22beac3b4ac2e5712f04b57f1bab290de658454b187782

H:\>docker images

REPOSITORY TAG IMAGE ID CREATED SIZE

<none> <none> 28a2b1909a0d 5 seconds ago 141MB

mahesh058/myubuntu latest 0d76f9f80e75 22 minutes ago 141MB

ubuntu 20.10 e508bd6d694e 3 days ago 79.4MB

ubuntu 20.04 1318b700e415 3 days ago 72.8MB

nginx latest 08b152afcfae 8 days ago 133MB

tomcat 7.0 9dfd74e6bc2f 3 weeks ago 533MB

H:\>docker tag 28a2b1909a0d myubuntu

H:\>docker images

REPOSITORY TAG IMAGE ID CREATED SIZE

myubuntu latest 28a2b1909a0d 30 seconds ago 141MB

mahesh058/myubuntu latest 0d76f9f80e75 23 minutes ago 141MB

ubuntu 20.10 e508bd6d694e 3 days ago 79.4MB

ubuntu 20.04 1318b700e415 3 days ago 72.8MB

nginx latest 08b152afcfae 8 days ago 133MB

tomcat 7.0 9dfd74e6bc2f 3 weeks ago 533MB

-----------------------------------------------------------------------------------------------------------------------------------------------------------

36. Now Create a Container out of this image and login into it to see if you can see the file and software installed by you in the previous container.

**ANSWER:**

H:\>docker run -it --name ubuntutest myubuntu

root@311955c13f87:/# ls

bin boot dev etc home lib lib32 lib64 libx32 media mnt myubuntu1.tar opt proc root run sbin srv sys test tmp usr var

root@311955c13f87:/# python3

Python 3.8.10 (default, Jun 2 2021, 10:49:15)

[GCC 9.4.0] on linux

Type "help", "copyright", "credits" or "license" for more information.

>>> print("helo")

helo

>>>

-----------------------------------------------------------------------------------------------------------------------------------------------------------

37. Do you have running tomcat container? If yes, Stop it and kill all tomcat container.

**ANSWER:**

H:\>docker ps -a

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

a0d8af452b3b ubuntu:20.10 "bash" 8 minutes ago Up 8 minutes myubuntu2

ca008c45616a ubuntu:20.04 "bash" 20 minutes ago Up 20 minutes myubuntu1

3a1a0c37199f ubuntu:20.04 "bash" 22 minutes ago Exited (0) 21 minutes ago ubuntu1

bfce9304aa64 tomcat:7.0 "catalina.sh run" 23 hours ago Up 4 minutes 8080/tcp tom

H:\>docker ps -a

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

a0d8af452b3b ubuntu:20.10 "bash" 9 minutes ago Up 9 minutes myubuntu2

ca008c45616a ubuntu:20.04 "bash" 22 minutes ago Up 22 minutes myubuntu1

3a1a0c37199f ubuntu:20.04 "bash" 23 minutes ago Exited (0) 22 minutes ago ubuntu1

bfce9304aa64 tomcat:7.0 "catalina.sh run" 23 hours ago Exited (143) 6 seconds ago tom

H:\>docker rm -f tom

tom

-----------------------------------------------------------------------------------------------------------------------------------------------------------

38. Create an index.html file with following code in it:-

<h1>This is Tomcat Container</h1>

Now, Start a tomcat container in such a way that on hitting its URL for home page it should show the above html page.

**ANSWER**: It’s done.

-----------------------------------------------------------------------------------------------------------------------------------------------------------

39. type below command:-

docker images --help

Now, try to run command that proves the concept of following three options:-

write atleast 1 command using each option above and prove their concepts as described in the --help.

1. -a

C:\Windows\system32>docker images -a

REPOSITORY TAG IMAGE ID CREATED SIZE

nginx latest 08b152afcfae 7 days ago 133MB

tomcat 7.0 9dfd74e6bc2f 3 weeks ago 533MB

2. –f

C:\Windows\system32>docker images -f reference="\*:latest"

REPOSITORY TAG IMAGE ID CREATED SIZE

nginx latest 08b152afcfae 7 days ago 133MB

3. –q

C:\Windows\system32>docker images -q

08b152afcfae

9dfd74e6bc2f

write atleast 1 command using each option above and prove their concepts as described in the --help.

-----------------------------------------------------------------------------------------------------------------------------------------------------------

40. type below command:-

docker ps --help

Now, try to run command that proves the concept of following six options:-

1.–a

C:\Windows\system32>docker ps -a

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

bfce9304aa64 tomcat:7.0 "catalina.sh run" 40 minutes ago Up 27 minutes 8080/tcp tom

25d2d418de91 tomcat:7.0 "catalina.sh run" 43 minutes ago Exited (143) 41 minutes ago mytom1

b31c58a42195 tomcat:7.0 "catalina.sh run" 51 minutes ago Exited (143) 43 minutes ago mytom

18e08d6fe3ab tomcat:7.0 "catalina.sh run" 57 minutes ago Exited (143) 52 minutes ago romantic\_heyrovsky

b50b0fc5f840 tomcat:7.0 "catalina.sh run" About an hour ago Exited (143) 58 minutes ago great\_cerf

----------------------------------------------------------------------------------------------------------------------------------------------------------

2. –f --filter

H:\>docker ps --filter "is-task=false"

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

a0d8af452b3b ubuntu:20.10 "bash" 53 minutes ago Up 53 minutes myubuntu2

ca008c45616a ubuntu:20.04 "bash" About an hour ago Up About an hour myubuntu1

or

H:\>docker ps --filter "status=exited"

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

a7c838ec0f48 ubuntu:20.04 "bash" 30 minutes ago Exited (0) 24 minutes ago myubuntu-1

3a1a0c37199f ubuntu:20.04 "bash" About an hour ago Exited (0) About an hour ago ubuntu1

25d2d418de91 tomcat:7.0 "catalina.sh run" 24 hours ago Exited (143) 24 hours ago mytom1

b31c58a42195 tomcat:7.0 "catalina.sh run" 24 hours ago Exited (143) 24 hours ago mytom

18e08d6fe3ab tomcat:7.0 "catalina.sh run" 24 hours ago Exited (143) 24 hours ago romantic\_heyrovsky

b50b0fc5f840 tomcat:7.0 "catalina.sh run" 24 hours ago Exited (143) 24 hours ago great\_cerf

d99de6fc93fd tomcat:7.0 "catalina.sh run" 24 hours ago Exited (143) 24 hours ago mystifying\_shockley

d2f639e31d61 tomcat:7.0 "catalina.sh run" 24 hours ago Exited (137) 24 hours ago reverent\_dewdney

0728c84035f4 nginx "/docker-entrypoint.…" 25 hours ago Exited (0) 24 hours ago mynginx

97124960b945 nginx "/docker-entrypoint.…" 25 hours ago Exited (0) 25 hours ago myNginx

-----------------------------------------------------------------------------------------------------------------------------------------------------------

3. –q gives running containers id

H:\>docker ps -q

a0d8af452b3b

ca008c45616a

-----------------------------------------------------------------------------------------------------------------------------------------------------------

4. –n Show n last created containers (includes all states) (default -1)

H:\>docker ps -n 5

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

a7c838ec0f48 ubuntu:20.04 "bash" 18 minutes ago Exited (0) 12 minutes ago myubuntu-1

a0d8af452b3b ubuntu:20.10 "bash" 45 minutes ago Up 45 minutes myubuntu2

ca008c45616a ubuntu:20.04 "bash" 57 minutes ago Up 57 minutes myubuntu1

3a1a0c37199f ubuntu:20.04 "bash" 59 minutes ago Exited (0) 58 minutes ago ubuntu1

25d2d418de91 tomcat:7.0 "catalina.sh run" 23 hours ago Exited (143) 23 hours ago mytom1

-----------------------------------------------------------------------------------------------------------------------------------------------------------

5. –l Show the latest created container (includes all states)

H:\>docker ps -l

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

a7c838ec0f48 ubuntu:20.04 "bash" 15 minutes ago Exited (0) 9 minutes ago myubuntu-1

-----------------------------------------------------------------------------------------------------------------------------------------------------------

6. –s Display total file sizes

H:\>docker ps -s

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES SIZE

a0d8af452b3b ubuntu:20.10 "bash" 43 minutes ago Up 43 minutes myubuntu2 0B (virtual 79.4MB)

ca008c45616a ubuntu:20.04 "bash" 55 minutes ago Up 55 minutes myubuntu1 68.6MB (virtual 141MB)

-----------------------------------------------------------------------------------------------------------------------------------------------------------