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.

try below commands for help

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

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

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

Done

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

docker pull mysql

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

docker image ls

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

12a8d88596c0

5. Create a container of your image

docker container create 12a8d88596c0

6. List all the running containers

docker ps

7. List all the running and stopped containers

docker ps -f "status=exited"

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

8f163180420c

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

docker image history 12a8d88596c0

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

docker pull tomcat:7.0

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

docker run tomcat

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

docker container inspect f865a299ae8e| grep'"IPAddress"' |head -n 1

13. Which Port it is using?

8080

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

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

docker images

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?

17. Find out which port is exposed for tomcat?

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

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

docker pull ubuntu:rolling
docker pull ubuntu:eoan

20. Run the container of ubuntu in attached mode.

docker run -t ubuntu:eoan

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

docker run –t -d ubuntu:rolling

22. Check how many ubuntu containers are running and stopped

Both are stopped

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

Running

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

docker logs f865a299ae8e

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

Running

26. Login as root user in ubuntu container

docker exec -u 0 -it 96e64ffa6839 bash

27. Create a file with any name in root directory

touch file.txt
echo "Here is my first conntent to ubuntu" > file.txt

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

apt-get update
apt-get install nginx

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

exit

30. Check if the ubuntu container is running.

Yes running

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

docker run -t 9f3d7c446553

32. Login as a root user

docker exec -u 0 -it cf8784437b7b bash

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.

No

docker kill cf8784437b7b

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

Yes

35. Create an Image out of the existing container.

docker commit -m="Latest image" awesome_banach ubuntu:rolling

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.

docker run -t ubuntu:rolling
docker exec -u 0 -it 438014c80bb7 bash
ls
Yes I am able to see

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

Done

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.

39. type below command:-

docker images --help

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

1. -a

docker ps –a

2. –f

docker kill –f tomcat

3. -q

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

docker ps –a

2. –f

docker kill –f tomcat

3. -q

4. –n

docker kill –n tomcat

5. –l

docker kill –l tomcat

6. -s

docker kill –s tomcat

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

41. Type below command:-

docker --help

done

you will various sections of commands apart from options like "Managemnet Commands" and "Commands".

Write some texts below describing the use of "Management Commands".

These commands are used for the structural modification or creation of the system.
These could be config, system, volume, etc

Use each command mentioned below and prove its concepts as described in the --help desription. write what you have understood from the output of the command after its successful execution.

1. cp

docker cp file.txt 438014c80bb7:/file.txt
2. create

docker create 438014c80bb7
3. export

docker export 438014c80bb7

4. history

docker history ffa63b5bd550

5. info

docker info

6. login

docker login 18.06.1-ce
username

password

7. logout

docker logout 18.06.1-ce

8. rename

docker rename laughing_wing New_Name

9. save

docker save ffa63b5bd550

10. stats

docker stats 96e64ffa6839

11. top

docker top 438014c80bb7

42. Kill all running container in one liner command.

docker stop $(docker ps -a -q)

43. Delete all images in one liner command.

docker rm $(docker ps -a -q)

44. Create a simple Dockerfile, build it and run it.

45. Create one or more Dockerfile that demostrate the following commands in Dockerfile (Write a PoC for each in one or more Dockerfile)

1. USER
2. RUN
3. ENV
4. CMD
5. RUN
6. ENTRYPOINT
7. EXPOSE
8. VOLUME

46. Dockerhub:-

Find a application you care about on docker hub.

Launch the container.

Install another application in it.

Save (commit) the image.

Upload that to docker hub in your account and share it with a colleague, ask them to use your image and run the container out of it in their machine/vm.