

1. Install docker:

```
muhammad@mustaqim-16301174:~$ sudo docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
0e03bdcc26d7: Pull complete
Digest: sha256:49a1c8800c94df04e9658809b006fd8a686cab8028d33cfba2cc049724254202
Status: Downloaded newer image for hello-world:latest

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
 1. The Docker client contacted the Docker daemon.
 2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
    (amd64)
 3. The Docker daemon created a new container from that image which runs the
    executable that produces the output you are currently reading.
 4. The Docker daemon streamed that output to the Docker client, which sent it
    to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
$ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
https://hub.docker.com/
```

- I installed docker by following the steps from docker documentation. Then to check if it is installed or not we can check the version – “docker version” and also by typing “sudo docker run hello-world”.
2. Show outputs of basic Docker commands (i.e pull, search, run, build, commit, rm, rmi, etc.):

```
muhammad@mustaqim-16301174:~$ sudo docker images
[sudo] password for muhammad:
REPOSITORY          TAG                 IMAGE ID            CREATED
SIZE
hello-world         latest             bf756fb1ae65       7 months ago
13.3kB
```

- To show the images we can write “sudo docker images”.

```
muhammad@mustaqim-16301174:~$ sudo docker pull alpine
Using default tag: latest
latest: Pulling from library/alpine
df20fa9351a1: Pull complete
Digest: sha256:185518070891758909c9f839cf4ca393ee977ac378609f700f60a771a2dfe321
Status: Downloaded newer image for alpine:latest
docker.io/library/alpine:latest
```

- To pull from docker-hub we can write “sudo docker pull” command and then the image we want to fetch.

```
muhammad@mustaqim-16301174:~$ sudo docker run -i -t alpine /bin/bash
docker: Error response from daemon: OCI runtime create failed: container_linux.g
o:349: starting container process caused "exec: \"/bin/bash\": stat /bin/bash: n
o such file or directory": unknown.
ERRO[0000] error waiting for container: context canceled
```

```
muhammad@mustaqim-16301174:~$ sudo docker run -it ubuntu /bin/bash
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
3ff22d22a855: Pull complete
e7cb79d19722: Pull complete
323d0d660b6a: Pull complete
b7f616834fd0: Pull complete
Digest: sha256:5d1d5407f353843ecf8b16524bc5565aa332e9e6a1297c73a92d3e754b8a636d
Status: Downloaded newer image for ubuntu:latest
root@2833fb86f2a9:/# cd
```

- But if we want to run an image directly from docker hub we can write like this. “sudo docker run -it image /bin/bash”

```
muhammad@mustaqim-16301174:/var/lib/docker$ sudo ls
builder  containers  network  plugins  swarm  trust
buildkit image      overlay2  runtimes tmp     volumes
```

```
muhammad@mustaqim-16301174:~$ cd /var/lib/docker/containers/
muhammad@mustaqim-16301174:/var/lib/docker/containers$ ls
2833fb86f2a94472657ed416bb4bcb7bad1cea237c6edc21a754a8740d2f183c
2d35a6fa22444d060b6a05c0343184b82193ad61d74a4c5a8f63156bf40fe6e7
52d056e2b0f39f0eb08b3879d6ccb0853b3b5673e00b9c59a34d1918db1cf0b5
66f532733832dd53b5f5620f1eb6e861b615a8baed612ac1ba078f595b3198b2
6b6bd113f43f4e19e1c7f3968a7abc9fd6c50a26f61507d6fc7125a70bfbe38e
```

- To show the containers.

```
muhammad@mustaqim-16301174:~$ sudo docker run -it ubuntu
root@c17fac40c89d:/# ls
bin  dev  home  lib32  libx32  mnt  proc  run  srv  tmp  var
boot  etc  lib  lib64  media  opt  root  sbin  sys  usr
root@c17fac40c89d:/# cd home
root@c17fac40c89d:/home# ls
root@c17fac40c89d:/home# touch mmm
root@c17fac40c89d:/home# ls
mmm
```

- To run into the image of the container then we have to add -it to the existing command. In the image we ran the ubuntu then it virtually created a guest os where we can run any terminal operation.

```

root@1ef279255fe3:/# ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 172.17.0.4 netmask 255.255.0.0 broadcast 172.17.255.255
    ether 02:42:ac:11:00:04 txqueuelen 0 (Ethernet)
    RX packets 11376 bytes 15326054 (15.3 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 5302 bytes 472225 (472.2 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    loop txqueuelen 1000 (Local Loopback)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

```

- I ran ifconfig into the guest.

```

muhammad@mustaqim-16301174:~$ sudo docker ps -a
[sudo] password for muhammad:
CONTAINER ID        IMAGE               COMMAND             CREATED
STATUS            PORTS              NAMES
1ef279255fe3       ubuntu             "/bin/bash"        6 minutes ago
Up 6 minutes                sweet_panini
c17fac40c89d       ubuntu             "/bin/bash"        12 minutes ago
Up 12 minutes                eager_greider
2833fb86f2a9       ubuntu             "/bin/bash"        35 minutes ago
Up 35 minutes                heuristic_vaughan
52d056e2b0f3       alpine             "/bin/bash"        36 minutes ago
Created                gallant_black
2d35a6fa2244       hello-world        "/hello"           5 days ago
Exited (0) 5 days ago        great_keldysh
6b6bd113f43f       hello-world        "/hello"           7 days ago
Exited (0) 7 days ago        thirsty_hopper
66f532733832       hello-world        "/hello"           8 days ago
Exited (0) 8 days ago        bold_mcclintock

```

- If we want to see the containers and their current stated and information then we can write “sudo docker ps -a” command.

```

muhammad@mustaqim-16301174:~$ sudo docker start 1ef279255fe3
1ef279255fe3

```

- If we want to start any container, we can write start command and then the container name.

```

muhammad@mustaqim-16301174:~$ sudo docker stop 1ef279255fe3
1ef279255fe3
muhammad@mustaqim-16301174:~$ sudo docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED
STATUS            PORTS              NAMES
1ef279255fe3       ubuntu             "/bin/bash"        16 minutes ago
Up 16 minutes                sweet_panini
c17fac40c89d       ubuntu             "/bin/bash"        22 minutes ago
Up 22 minutes                eager_greider
2833fb86f2a9       ubuntu             "/bin/bash"        35 minutes ago
Up 35 minutes                heuristic_vaughan
52d056e2b0f3       alpine             "/bin/bash"        36 minutes ago
Created                gallant_black
2d35a6fa2244       hello-world        "/hello"           5 days ago
Exited (0) 5 days ago        great_keldysh
6b6bd113f43f       hello-world        "/hello"           7 days ago
Exited (0) 7 days ago        thirsty_hopper
66f532733832       hello-world        "/hello"           8 days ago
Exited (0) 8 days ago        bold_mcclintock

```

- To stop the container, we can write stop command.

```
muhammad@mustaqim-16301174:~$ sudo docker attach 1ef279255fe3
root@1ef279255fe3:/# cd
root@1ef279255fe3:~# ls
```

- And if we want to open that container we have to write attach command.

```
muhammad@mustaqim-16301174:~$ sudo docker rm 2d35a6fa2244
2d35a6fa2244
muhammad@mustaqim-16301174:~$ sudo docker rm 66f532733832
66f532733832
muhammad@mustaqim-16301174:~$ sudo docker rm 6b6bd113f43f
6b6bd113f43f
muhammad@mustaqim-16301174:~$ sudo docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED
STATUS            PORTS              NAMES
1ef279255fe3       ubuntu             "/bin/bash"        24 minutes ago
Up 7 minutes                               sweet_panini
c17fac40c89d       ubuntu             "/bin/bash"        30 minutes ago
Up 30 minutes                               eager_greider
2833fb86f2a9       ubuntu             "/bin/bash"        53 minutes ago
Up 53 minutes                               heuristic_vaughan
52d056e2b0f3       alpine             "/bin/bash"        54 minutes ago
Created                                gallant_black
```

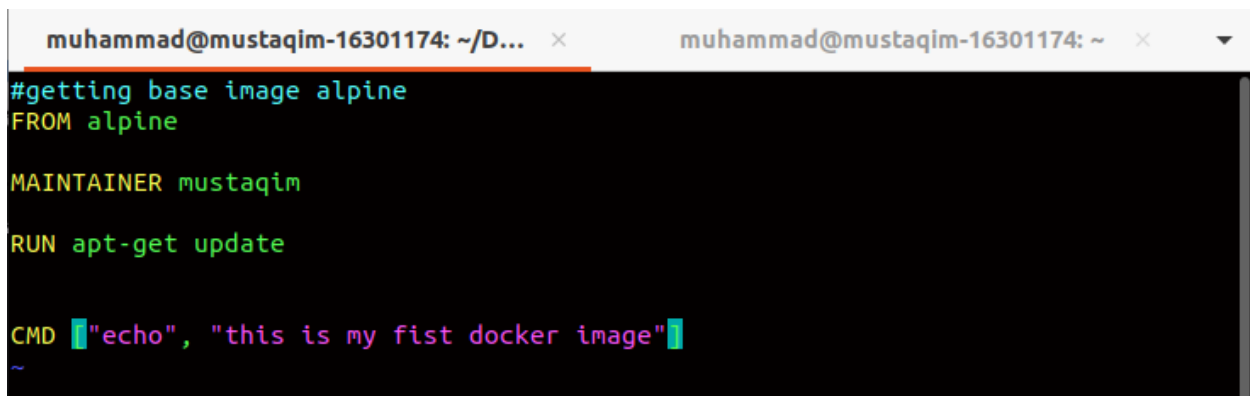
- To remove any container, we have to write “sudo docker rm <container ID>”

```
muhammad@mustaqim-16301174:~$ sudo docker search busybox
NAME                DESCRIPTION                               STARS
busybox             OFFICIAL    Busybox base image.                     1958
[OK]
progrum/busybox                                71
[OK]
radial/busyboxplus  Full-chain, Internet enabled, busybox made f... 32
[OK]
yauritux/busybox-curl  Busybox with CURL                          10
```

```
muhammad@mustaqim-16301174:~$ sudo docker search alpine
NAME                STARS    OFFICIAL    DESCRIPTION
alpine              6675     [OK]        A minimal Docker image based on Alpine L
linux...
mhart/alpine-node  474      Minimal Node.js built on Alpine Linux
```

- To search in docker hub and to show description of that, we can write “sudo docker search <docker image>”

3. Create a Docker image using Docker file:



```
muhammad@mustaqim-16301174: ~/D... x muhammad@mustaqim-16301174: ~ x
#getting base image alpine
FROM alpine

MAINTAINER mustaqim

RUN apt-get update

CMD ["echo", "this is my first docker image"]
```

- To create the docker file we have to rename the file as “Dockerfile”(case sensitive).

FROM <image name>

MAINTAINER <the one who maintains/ mail id or anything>

RUN < the command that will run after the boot of the image>

CMD < any print or information regarding the dockerfile>

Etc.



```
muhammad@mustaqim-16301174:~/Desktop/Dockerfiles$ ls
Dockerfile
muhammad@mustaqim-16301174:~/Desktop/Dockerfiles$ vim Dockerfile
```

- To edit the docker file we have to write vim command.

```

muhammad@mustaqim-16301174:~/Desktop/Dockerfiles$ sudo docker build -t newdoc:1.0 .
[sudo] password for muhammad:
Sending build context to Docker daemon  2.048kB
Step 1/4 : FROM ubuntu
--> 1e4467b07108
Step 2/4 : MAINTAINER mustaqim
--> Running in a98829536db6
Removing intermediate container a98829536db6
--> 510b216059b7
Step 3/4 : RUN apt-get update
--> Running in b56687c7d299
Get:1 http://archive.ubuntu.com/ubuntu focal InRelease [265 kB]
Get:2 http://security.ubuntu.com/ubuntu focal-security InRelease [107 kB]
Get:3 http://security.ubuntu.com/ubuntu focal-security/universe amd64 Packages [62.6 kB]
Get:4 http://archive.ubuntu.com/ubuntu focal-updates InRelease [111 kB]
Get:5 http://security.ubuntu.com/ubuntu focal-security/multiverse amd64 Packages [1078 B]
Get:6 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [199 kB]
Get:7 http://archive.ubuntu.com/ubuntu focal-backports InRelease [98.3 kB]
Get:8 http://security.ubuntu.com/ubuntu focal-security/restricted amd64 Packages [39.1 kB]
Get:9 http://archive.ubuntu.com/ubuntu focal/restricted amd64 Packages [33.4 kB]
Get:10 http://archive.ubuntu.com/ubuntu focal/main amd64 Packages [1275 kB]
Get:11 http://archive.ubuntu.com/ubuntu focal/multiverse amd64 Packages [177 kB]
Get:12 http://archive.ubuntu.com/ubuntu focal/universe amd64 Packages [11.3 MB]
Get:13 http://archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 Packages [17.3 kB]
Get:14 http://archive.ubuntu.com/ubuntu focal-updates/restricted amd64 Packages [39.1 kB]
Get:15 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [411 kB]
Get:16 http://archive.ubuntu.com/ubuntu focal-updates/universe amd64 Packages [187 kB]
Get:17 http://archive.ubuntu.com/ubuntu focal-backports/universe amd64 Packages [3209 B]
Fetched 14.4 MB in 17s (835 kB/s)
Reading package lists...
Removing intermediate container b56687c7d299
--> 1367fad185b2
Step 4/4 : CMD ["echo" , "my first docker!"]
--> Running in 149c747d3dc4
Removing intermediate container 149c747d3dc4
--> 1ddc6a8849f3
Successfully built 1ddc6a8849f3
Successfully tagged newdoc:1.0

```

- To build a docker custom image we can write “sudo docker build -t <name> <tag>” command.

```

muhammad@mustaqim-16301174:~/Desktop/Dockerfiles$ sudo docker run 1ddc6a8849f3
my first docker!
muhammad@mustaqim-16301174:~/Desktop/Dockerfiles$ sudo docker images

```

REPOSITORY	TAG	IMAGE ID	CREATED
SIZE			
newdoc	1.0	1ddc6a8849f3	4 minutes ago
96.5MB			

- Then we have to run the created image. After that to show the images installed we can write “sudo docker images” command.

4. Run a container as a single task, show outputs, show status of the all containers (using docker ps -a) :

```

muhammad@mustaqim-16301174:~$ sudo docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
0e03bdcc26d7: Pull complete
Digest: sha256:49a1c8800c94df04e9658809b006fd8a686cab8028d33cfba2cc049724254202
Status: Downloaded newer image for hello-world:latest

Hello from Docker!
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    (amd64)
 3. The Docker daemon created a new container from that image which runs the
    executable that produces the output you are currently reading.
 4. The Docker daemon streamed that output to the Docker client, which sent it
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https://hub.docker.com/

```

- We fetched hello-world and ran at the same time.

```

muhammad@mustaqim-16301174:~$ sudo docker ps -a
[sudo] password for muhammad:
CONTAINER ID   IMAGE      COMMAND                  CREATED
STATUS        PORTS     NAMES
1ef279255fe3   ubuntu    "/bin/bash"             6 minutes ago
Up 6 minutes   sweet_panini
c17fac40c89d   ubuntu    "/bin/bash"             12 minutes ago
Up 12 minutes   eager_greider
2833fb86f2a9   ubuntu    "/bin/bash"             35 minutes ago
Up 35 minutes   heuristic_vaughan
52d056e2b0f3   alpine     "/bin/bash"             36 minutes ago
Created        gallant_black
2d35a6fa2244   hello-world "/hello"                5 days ago
Exited (0) 5 days ago great_keldysh
6b6bd113f43f   hello-world "/hello"                7 days ago
Exited (0) 7 days ago thirsty_hopper
66f532733832   hello-world "/hello"                8 days ago
Exited (0) 8 days ago bold_mcclintock

```

- In the last we can see that hello-world image is running in a container and there is a container id of that.

5. Run a container in interactive mode and install different packages in the container. Show each step:

```
muhammad@mustaqim-16301174:~$ sudo docker run -it ubuntu /bin/bash
root@07743b182219:/# ls
bin    dev    home  lib32  libx32 mnt    proc  run    srv    tmp    var
boot   etc    lib   lib64  media  opt    root  sbin   sys    usr
root@07743b182219:/# apt-get update
Get:1 http://security.ubuntu.com/ubuntu focal-security InRelease [107 kB]
Get:2 http://archive.ubuntu.com/ubuntu focal InRelease [265 kB]
Get:3 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [199 kB]
```

- In this we can see that the ubuntu is running fully and there is a new terminal that can be used as a guest. In their we can write any command regarding ubuntu.

```
root@07743b182219:/# apt-get install tweak
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  tweak
0 upgraded, 1 newly installed, 0 to remove and 4 not upgraded.
```

- For example, I wrote apt-get install tweak command to install the tweak application in the guest. We can install many packages like that.

6. Push your own image into Docker public registry/Hub :

```
muhammad@mustaqim-16301174:~$ sudo docker run -d -t --name "muhammad16301174" ubuntu:latest /bin/bash
b59f52100319d0b05f9d3703d3157597013c4bc75f7dff0bd163b0a8d498acf7
muhammad@mustaqim-16301174:~$ docker container ls
Got permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Get http://%2Fvar%2Frun%2Fdocker.sock/v1.40/containers/json: dial unix /var/run/docker.sock: connect: permission denied
muhammad@mustaqim-16301174:~$ sudo docker container ls
CONTAINER ID        IMAGE               COMMAND             CREATED
b59f52100319        ubuntu:latest      "/bin/bash"        22 second
ago                Up 21 seconds      muhammad16301174
```

- To push my own image I named it with muhammad16301174 and selected the ubuntu image I created myself, with tag.


```
muhammad@mustaqim-16301174:~$ sudo docker exec -i -t b59f52100319 /bin/bash
root@b59f52100319:/# hostname -f
b59f52100319
```

- To execute the container image.

```
muhammad@mustaqim-16301174:~$ sudo docker container ls
```

CONTAINER ID	IMAGE	COMMAND	CREATED
b59f52100319	ubuntu:latest	"/bin/bash"	5 minutes ago

- As we can see, there is the image listed, which is being executed.

```
muhammad@mustaqim-16301174:~$ sudo docker commit b59f52100319 mustaqim16301174/ubuntu:latest
sha256:400d9c2ec6d48ce79086c8a49051e7d4449cd07c4b96d6640a887e48f2d61002
muhammad@mustaqim-16301174:~$ sudo docker image ls
```

REPOSITORY	TAG	IMAGE ID	CREATED
mustaqim16301174/ubuntu	latest	400d9c2ec6d4	12 seconds ago

- Then we have to write “sudo docker commit <container id> <username of docker hub/ image: tag> “

```
muhammad@mustaqim-16301174:~$ sudo docker login
Authenticating with existing credentials...
WARNING! Your password will be stored unencrypted in /root/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
muhammad@mustaqim-16301174:~$ docker push mustaqim16301174/ubuntu:latest
Got permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Post http://%2Fvar%2Frun%2Fdocker.sock/v1.40/images/mustaqim16301174/ubuntu/push?tag=latest: dial unix /var/run/docker.sock: connect: permission denied
muhammad@mustaqim-16301174:~$ sudo docker push mustaqim16301174/ubuntu:latest
The push refers to repository [docker.io/mustaqim16301174/ubuntu]
88a120ba78f5: Pushed
```

- After that we have to login to docker hub and give username and password and push the image to docker repository.

```

muhammad@mustaqim-16301174:~$ sudo docker image ls
REPOSITORY              TAG               IMAGE ID           CREATED
mustaqim16301174/ubuntu latest            400d9c2ec6d4       4 minutes ago
73.9MB

muhammad@mustaqim-16301174:~$ sudo docker image rm mustaqim16301174/ubuntu:latest
Untagged: mustaqim16301174/ubuntu:latest
Untagged: mustaqim16301174/ubuntu@sha256:cbea29149860dfe7cad88c19fc9c60082723fd4b1cd34fc7422ea89841d67995
Deleted: sha256:400d9c2ec6d48ce79086c8a49051e7d4449cd07c4b96d6640a887e48f2d61002
Deleted: sha256:a71b7e9e0c66093968306dfa2c70d26cb0b7a52d8a3be6c9c867b1a4ec5eee0c

```

- To check the operation is successful or not we can remove and then run the image.

```

muhammad@mustaqim-16301174:~$ sudo docker run -i -t --name "testdocker1" mustaqim16301174/ubuntu:latest /bin/bash
Unable to find image 'mustaqim16301174/ubuntu:latest' locally
latest: Pulling from mustaqim16301174/ubuntu
3ff22d22a855: Already exists
e7cb79d19722: Already exists
323d0d660b6a: Already exists
b7f616834fd0: Already exists
9003948645ea: Pull complete
Digest: sha256:cbea29149860dfe7cad88c19fc9c60082723fd4b1cd34fc7422ea89841d67995
Status: Downloaded newer image for mustaqim16301174/ubuntu:latest
root@8c75e1718c47:/# exit
exit

```

- To run the image directly from docker hub we can name it differently and then run it.

7. How to make your own private registry? Show steps:

```

muhammad@mustaqim-16301174:~$ sudo docker run -d -p 5000:5000 --restart=always --name registry registry:2
[sudo] password for muhammad:
Unable to find image 'registry:2' locally
2: Pulling from library/registry
cbdbe7a5bc2a: Pull complete
47112e65547d: Pull complete
46bcb632e506: Pull complete
c1cc712bcecd: Pull complete
3db6272dcbfa: Pull complete
Digest: sha256:8be26f81ffea54106bae012c6f349df70f4d5e7e2ec01b143c46e2c03b9e551d
Status: Downloaded newer image for registry:2
a61f50dc31a992f909c43c1cd20b2f69fcbe56ed69b278da5518383508f48984

```

- To make my registry we can write this command.

```
muhammad@mustaqim-16301174:~$ sudo docker tag ubuntu localhost:5000/ubuntu
muhammad@mustaqim-16301174:~$ sudo docker push localhost:5000/ubuntu
The push refers to repository [localhost:5000/ubuntu]
095624243293: Pushed
a37e74863e72: Pushed
8eeb4a14bcb4: Pushed
ce3011290956: Pushed
latest: digest: sha256:60f560e52264ed1cb7829a0d59b1ee7740d7580e0eb293aca2d722136edb1e24 size: 1152
```

- Then we have to make a tag.

```
muhammad@mustaqim-16301174:~$ sudo docker image rm -f localhost:5000/ubuntu
Untagged: localhost:5000/ubuntu:latest
Untagged: localhost:5000/ubuntu@sha256:60f560e52264ed1cb7829a0d59b1ee7740d7580e0eb293aca2d722136edb1e24
muhammad@mustaqim-16301174:~$ sudo docker images
```

- Remove image from local.

```
muhammad@mustaqim-16301174:~$ sudo docker images
```

REPOSITORY	SIZE	TAG	IMAGE ID	CREATED
mustaqim16301174/ubuntu		latest	400d9c2ec6d4	18 hours ago
	73.9MB			
<none>		<none>	24e85c3cf3e9	20 hours ago
	217MB			
suzana17301075/ubuntu-next2		latest	034fedf9cf63	22 hours ago
	738MB			
newdoc		1.0	1ddc6a8849f3	28 hours ago
	96.5MB			
<none>		<none>	e5c34e7be7be	28 hours ago
	5.57MB			
registry		2	2d4f4b5309b1	7 weeks ago
	26.2MB			
alpine		latest	a24bb4013296	2 months ago
	5.57MB			
hello-world		latest	bf756fb1ae65	7 months ago
	13.3kB			

- Check that the image is existing or not.

```
muhammad@mustaqim-16301174:~$ sudo docker pull localhost:5000/ubuntu
Using default tag: latest
latest: Pulling from ubuntu
Digest: sha256:60f560e52264ed1cb7829a0d59b1ee7740d7580e0eb293aca2d722136edb1e24
Status: Downloaded newer image for localhost:5000/ubuntu:latest
localhost:5000/ubuntu:latest
muhammad@mustaqim-16301174:~$
```

- Then we can check by pulling from our registry.

8. Create a small website or app with minimal functionality (Could be a simple HTML website that has a button which opens a static image/file) inside Docker container. Then run the application (inside the container) in the background of your HOST machine in any port. Browse the website from your host machine:

```
muhammad@mustaqim-16301174:~/nginx folder$ sudo docker build -t nginx .
Sending build context to Docker daemon 2.048kB
Step 1/3 : FROM ubuntu
latest: Pulling from library/ubuntu
Digest: sha256:5d1d5407f353843ecf8b16524bc5565aa332e9e6a1297c73a92d3e754b8a636d
Status: Downloaded newer image for ubuntu:latest
--> 1e4467b07108
Step 2/3 : MAINTAINER mustaqim
--> Using cache
--> 510b216059b7
Step 3/3 : RUN apt-get update
--> Using cache
--> 1367fad185b2
Successfully built 1367fad185b2
Successfully tagged nginx:latest
```

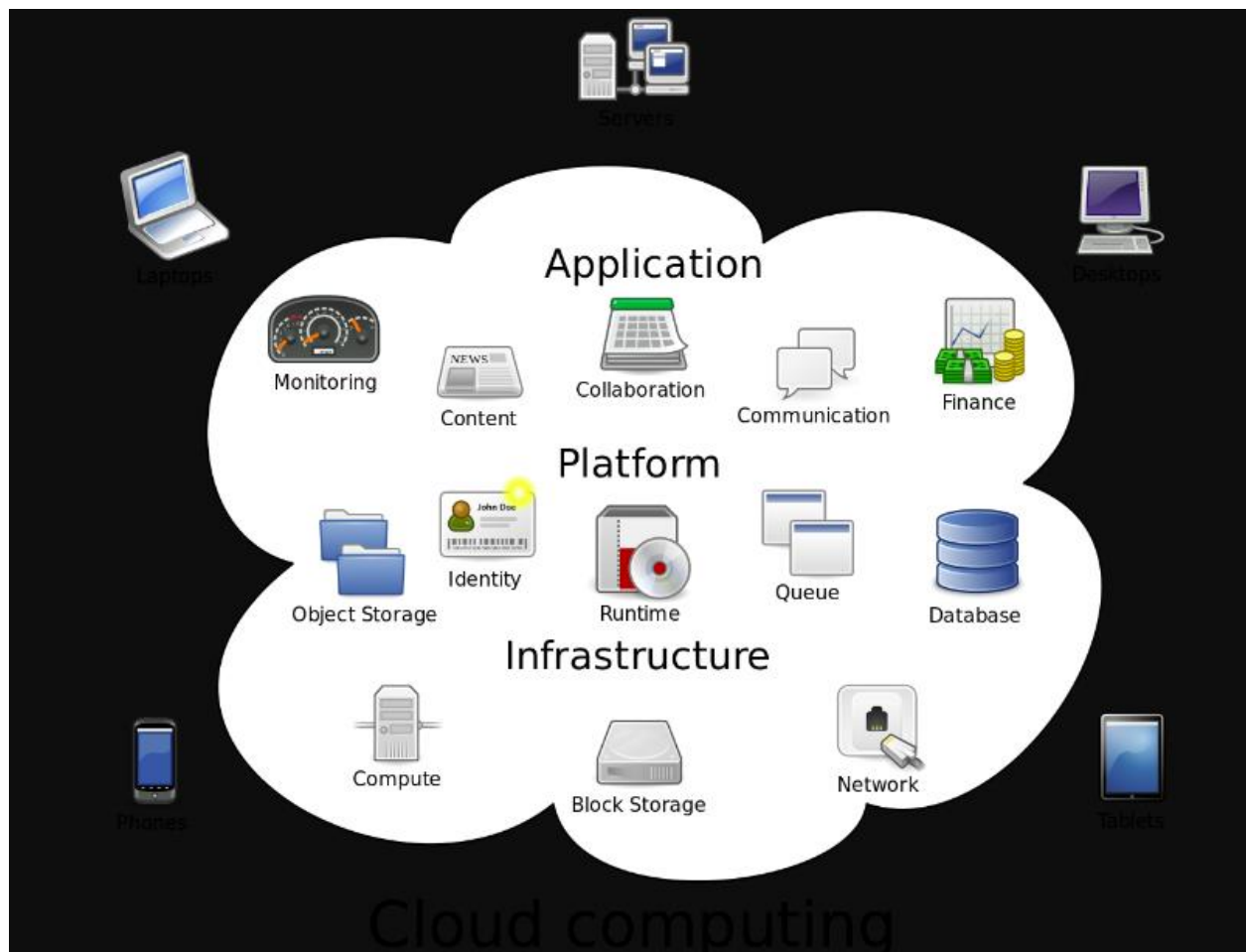
```
muhammad@mustaqim-16301174:~/nginx folder$ sudo docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
mustaqim16301174/ubuntu	latest	400d9c2ec6d4	18 hours ago	73.9MB
<none>	<none>	24e85c3cf3e9	20 hours ago	217MB
suzana17301075/ubuntu-next2	latest	034fedf9cf63	22 hours ago	738MB
nginx	latest	1367fad185b2	28 hours ago	96.5MB
newdoc	1.0	1ddc6a8849f3	28 hours ago	96.5MB
<none>	<none>	e5c34e7be7be	28 hours ago	5.57MB
ubuntu	latest	1e4467b07108	2 weeks ago	73.9MB
localhost:5000/ubuntu	latest	1e4467b07108	2 weeks ago	73.9MB
registry	2	2d4f4b5309b1	7 weeks ago	26.2MB
alpine	latest	a24bb4013296	2 months ago	5.57MB
hello-world	latest	bf756fb1ae65	7 months ago	13.3kB

```
muhammad@mustaqim-16301174:~/nginx folder$ sudo docker run -d --name assignment3 -p 8000:80 nginx
[sudo] password for muhammad:
e841f5bf5b5f0f3b62c335d347cca49ebd6271073a02bc026ada4d2976540f9c
```

CSE491 Cloud computing

mustaqim-16301174



9. Migrate the new container having the application into another machine. Again, run the container and browse the URL. It should work:

```
muhammad@mustaqim-16301174:~$ sudo docker run -d -t --name "muhammad16301174" ubuntu:latest /bin/bash
b59f52100319d0b05f9d3703d3157597013c4bc75f7dff0bd163b0a8d498acf7
muhammad@mustaqim-16301174:~$ docker container ls
Got permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Get http://%2Fvar%2Frun%2Fdocker.sock/v1.40/containers/json: dial unix /var/run/docker.sock: connect: permission denied
muhammad@mustaqim-16301174:~$ sudo docker container ls
CONTAINER ID        IMAGE               PORTS              COMMAND              CREATED
STATUS             PORTS              NAMES
b59f52100319      ubuntu:latest      "/bin/bash"        22 seconds ago
Up 21 seconds      muhammad16301174
```

```
samia-suzana-17301075@suzana-17301075:~$ sudo docker pull mustaqim16301174/ubuntu
[sudo] password for samia-suzana-17301075:
Using default tag: latest
latest: Pulling from mustaqim16301174/ubuntu
3ff22d22a855: Already exists
e7cb79d19722: Already exists
323d0d660b6a: Already exists
b7f616834fd0: Already exists
9003948645ea: Pull complete
Digest: sha256:cbea29149860dfe7cad88c19fc9c60082723fd4b1cd34fc7422ea89841d67995
Status: Downloaded newer image for mustaqim16301174/ubuntu:latest
docker.io/mustaqim16301174/ubuntu:latest
samia-suzana-17301075@suzana-17301075:~$
```