

# WEEK \_5

## Task 1 : Working with Docker CLI Commands:

### Basic Docker Commands

#### 1.docker –version

```
PS Select Windows PowerShell
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\kmit> docker --version
Docker version 27.3.1, build ce12230
PS C:\Users\kmit> docker version
Client:
  Version:          27.3.1
  API version:      1.47
  Go version:       go1.22.7
  Git commit:       ce12230
  Built:            Fri Sep 20 11:42:27 2024
  OS/Arch:          windows/amd64
  Context:          desktop-linux

Server: Docker Desktop 4.36.0 (175267)
Engine:
  Version:          27.3.1
  API version:      1.47 (minimum version 1.24)
  Go version:       go1.22.7
  Git commit:       41ca978
  Built:            Fri Sep 20 11:41:11 2024
  OS/Arch:          linux/amd64
  Experimental:    false
containerd:
  Version:          1.7.21
  GitCommit:        472731909fa34bd7bc9c087e4c27943f9835f111
runc:
  Version:          1.1.13
  GitCommit:        v1.1.13-0-g58aa920
docker-init:
  Version:          0.19.0
  GitCommit:        de40ad0
PS C:\Users\kmit> docker images
```

#### 2.docker images

GitCommit: de40ad0	REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
	ashrith13/wordpress	latest	79dd7ea093b2	9 months ago	993MB
	wordpress	latest	79dd7ea093b2	9 months ago	993MB
	ubuntu	latest	80dd3c3b9c6c	9 months ago	117MB
	ashrith13/wordpressimage	latest	80dd3c3b9c6c	9 months ago	117MB
	jsontorivers/nagios	latest	2a7c2520d118	9 months ago	1.36GB
	docker/desktop-kubernetes	kubernetes-v1.30.5-cni-v1.4.0-critools-v1.29.0-cri-dockerd-v0.3.11-1-debian	797002256c8d	10 months ago	625MB
	registry.k8s.io/kube-apiserver	v1.30.5	7746ea55a7d4	11 months ago	153MB
	registry.k8s.io/kube-controller-manager	v1.30.5	bb1d5u207294	11 months ago	146MB
	registry.k8s.io/kube-scheduler	v1.30.5	62c91756a3c9	11 months ago	84.6MB
	registry.k8s.io/kube-proxy	v1.30.5	f420491153b9	11 months ago	118MB
	gcr.io/k8s-minikube/kicbase	<none>	610f28859520	11 months ago	1.81GB
	gcr.io/k8s-minikube/kicbase	v0.0.45	e7c9bc3b0c515	11 months ago	1.81GB
	registry.k8s.io/coredns/coredns	v1.11.3	9caab0f6238b	12 months ago	85.1MB
	registry.k8s.io/etcd	3.5.12-0	44a1e24dcbb4	18 months ago	211MB
	mysql	5.7	4bc0bc963e6d	20 months ago	689MB
	docker/desktop-vpnkit-controller	dc331cb22850be0cd97c84a9cfecaf44a1af06c	7ecf567ea070	2 years ago	47MB
	registry.k8s.io/pause	3.9	7031c1b128338	2 years ago	1.07MB
	docker/desktop-storage-provisioner	v2.0	115d77fe6e62	4 years ago	59.2MB
	registry.k8s.io/etcd	3.5.15-0	a6dc63e6e8cf	55 years ago	56.9MB

#### 3.docker ps

```
PS C:\Users\kmit> docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
CONTAINER ID IMAGE COMMAND NAMES
0c0800003636 javonrivers/nagioslatest "java /bin/bash" 7 months ago Exited (4) 7 months ago
7af07195141d 886d5c309cc " /bin/bash" 7 months ago Exited (0) 7 months ago
0033c029c94c 886d5c309cc " /bin/bash" 7 months ago Exited (0) 7 months ago
74430f9a094 886d5c309cc " /bin/bash" 7 months ago Exited (255) 8 minutes ago
7e014b085a793 wordpresslatest "docker-entrypoint.s" 7 months ago Exited (255) 8 minutes ago 0.0.0.0:8885->80/tcp
0376a98ac93e mysql:5.7 "docker-entrypoint.s" 7 months ago Exited (255) 8 minutes ago 3306/tcp, 33060/tcp
41c2edc1af gcr.io/bs-minikube/kibbase:0.0.45 " /bin/bash" 7 months ago Exited (255) 7 months ago 127.0.0.1:55000->8443/tcp, 127.0.0.1:55001->2376/tcp, 127.0.0.1:55002->8000/tcp, 127.0.0.1:55003->8443/tcp, 127.0.0.1:55004->32443/tcp minikube
```

## 4.ls

```
See 'docker run --help'.
PS C:\Users\kmit> ls
```

```
Directory: C:\Users\kmit

Mode LastWriteTime Length Name
---- - - - - -
d---- 24-12-2024 10:29 .aws
d---- 24-12-2024 10:29 .azure
d---- 16-12-2024 16:04 .cache
d---- 19-08-2025 10:20 .docker
d---- 16-12-2024 16:04 .eclipse
d---- 19-06-2024 10:34 .ipython
d---- 24-12-2024 12:15 .jupyter
d---- 24-12-2024 11:18 .kube
d---- 16-01-2025 12:43 .m2
d---- 24-12-2024 16:23 .minikube
d---- 16-12-2024 15:53 .ms-ad
d---- 18-01-2024 13:11 .p2
d---- 19-12-2024 19:11 .th-client
d---- 28-12-2024 16:14 .VirtualBox
d---- 16-12-2024 15:21 .vscode
d-r--- 17-12-2024 04:04 3D Objects
d-r--- 17-12-2024 04:04 Contacts
d-r--- 19-08-2025 10:21 Desktop
d-r--- 17-01-2025 12:22 Documents
d-r--- 19-08-2025 10:21 Downloads
d---- 17-01-2025 13:21 eclipse-workspace
d-r--- 17-12-2024 04:04 Favorites
d-r--- 17-12-2024 04:04 Links
d-r--- 17-12-2024 04:04 Music
d-r--- 16-12-2024 15:48 OneDrive
d-r--- 28-12-2024 14:10 Pictures
d-r--- 17-12-2024 04:04 Saved Games
d-r--- 17-12-2024 04:05 Searches
d---- 16-01-2025 12:57 SEexternal
d-r--- 03-01-2025 09:42 Videos
-a--- 16-01-2025 13:04 255 .bash_history
-a--- 16-01-2025 12:48 74 .gitconfig
-a--- 02-01-2025 10:21 0 .node_repl_history
-a--- 17-12-2024 10:54 0 wsl
```

## Docker CLI Commands with redis

### Step 1: Pull the redis Image

docker pull redis

```
PS C:\Users\kmit> docker pull redis
Using default tag: latest
latest: Pulling from library/redis
63edde0222ea: Download complete
311d9cf20af5: Download complete
b1badc6e5066: Download complete
6f34ca96de3f: Download complete
4f4fb700ef54: Already exists
f22261c94fe4: Download complete
e51f60c71d8e: Download complete
Digest: sha256:cc2dfb8f5151da2684b4a09bd04b567f92d07591d91980eb3eca21df07e12760
Status: Downloaded newer image for redis:latest
docker.io/library/redis:latest
PS C:\Users\kmit> docker run --name my-redis -d redis
```

## Step 2: Run a Redis Container

docker run --name my-redis -d redis

```
see 'docker run --help'.
PS C:\Users\kmit> docker run --name my-redis -d redis
3734c2f902a1f6ff794c224eb00dc689402efa34788969a0b164c27f752db9ce
```

## Step 3: Check Running Containers

docker ps

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
3734c2f902a1	redis	"docker-entrypoint.s..."	About a minute ago	Up About a minute	6379/tcp	my-redis

## Step 4: Access Redis

docker exec -it my-redis redis-cli

```
PS C:\Users\kmit> docker exec -it my-redis redis-cli
:27.0.0.1:6379> SET name "SE_LAB"
OK
:27.0.0.1:6379> GET name
"SE_LAB"
:27.0.0.1:6379> docker stop my-redis
(error) ERR unknown command 'docker', with args beginning with: 'stop' 'my-redis'
:27.0.0.1:6379> "SE_LAB"
(error) ERR unknown command 'SE_LAB', with args beginning with:
:27.0.0.1:6379> 127.0.0.1:6379> docker stop my-redis
(error) ERR unknown command '127.0.0.1:6379>', with args beginning with: 'docker' 'stop' 'my-redis'
:27.0.0.1:6379> (error) ERR unknown command 'docker', with args beginning with: 'stop' 'my-redis'
invalid argument(s)
:27.0.0.1:6379> docker stop my-redis
(error) ERR unknown command 'docker', with args beginning with: 'stop' 'my-redis'
:27.0.0.1:6379> stop my-redis
(error) ERR unknown command 'stop', with args beginning with: 'my-redis'
:27.0.0.1:6379> exit
```

## Step 5: Stop the Redis Container

```
docker stop my-redis
```

```
PS C:\Users\kmit> docker stop my-redis  
my-redis  
PS C:\Users\kmit> docker start my-redis  
my-redis
```

### Step 6: Restart the Redis Container

```
PS C:\Users\kmit> docker start my-redis  
my-redis  
PS C:\Users\kmit> docker rm my-redis
```

```
docker start my-redis
```

### Step 7: Remove the Redis Container

```
docker rm my-redis
```

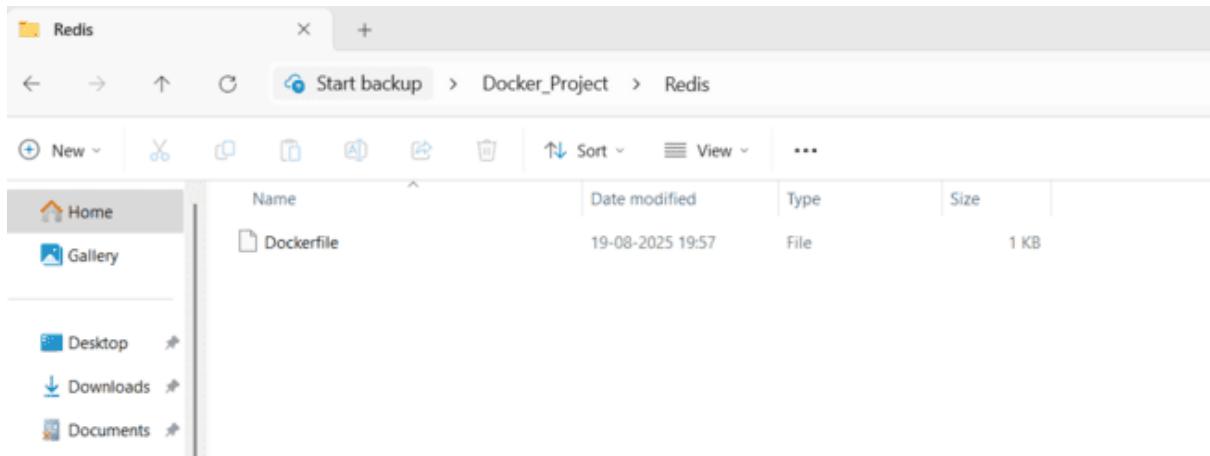
### Step 8: Remove the Redis Image

```
docker rmi redis
```

```
PS C:\Users\kmit> docker stop my-redis  
my-redis  
PS C:\Users\kmit> docker rm my-redis  
my-redis  
PS C:\Users\kmit> docker rmi redis  
Untagged: redis:latest  
Deleted: sha256:cc2dfb8f5151da2684b4a09bd04b567f92d07591d91980eb3eca21df07e12760  
PS C:\Users\kmit>
```

## Task 2: Working with Docker file

### Step 1: Set Up Your Folder



## Step 2: Write the Docker file

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis
$ notepad Dockerfile

azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis
$ cat Dockerfile
FROM redis:latest
CMD ["redis-server"]
```

## Docker Commands (Step-by-step):

### 1. docker build -t redisnew

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker build -t redisnew .
[+] Building 16.2s (6/6) FINISHED
      docker:desktop-linux
-> [internal] load build definition from Dockerfile          0.1s
-> => transferring dockerfile: 76B                          0.0s
-> [internal] load metadata for docker.io/library/redis:latest 5.8s
-> [auth] library/redis:pull token for registry-1.docker.io  0.0s
-> [internal] load .dockerignore                            0.1s
-> => transferring context: 2B                           0.0s
-> [1/1] FROM docker.io/library/redis:latest@sha256:cc2dfb8f5151da2684b 5.7s
-> => resolve docker.io/library/redis:latest@sha256:cc2dfb8f5151da2684b 0.1s
-> => sha256:311d9cf20af57b45fc01f6e264cac4a6e2e213067a559 876B / 876B 1.0s
-> => sha256:4f4fb700ef54461cfa02571ae0db9a0dc1e0cdb5577484a6 32B / 32B 1.3s
-> => sha256:e51f60c71d8e10e0555ce03c32fd4407a9dd7090df 1.10kB / 1.10kB 1.6s
-> => sha256:63edde0222ea5d1f451341c589856bd7a648df0d06 2.12kB / 2.12kB 1.5s
-> => sha256:f34ca96de3ff70793fb163e4f3b823438504df5004d00b4 97B / 97B 0.8s
-> => sha256:f22261c94fe4aaa2fc0818ade274d1b988a83d48 24.19MB / 24.19MB 3.7s
-> => sha256:b1badc6e50664185acfaa0ca255d8076061c2a9d 28.23MB / 28.23MB 3.8s
-> exporting to image                                     9.4s
-> => exporting layers                                    0.0s
-> => exporting manifest sha256:5ad876ccc1c46b2046e6706fee0f5953519cd22 0.0s
-> => exporting config sha256:f5b47042e2a5a960bc6bac4a2ef05fb1e2ae054f3 0.0s
-> => exporting attestation manifest sha256:0d7c05bf334762ba3ce8c8c03e4 0.1s
-> => exporting manifest list sha256:2e2a048d9a45f61db66d22c65d1adb204 0.0s
-> => naming to docker.io/library/redisnew:latest        0.0s
-> => unpacking to docker.io/library/redisnew:latest     9.1s
```

## 2. docker run --name myredisnew -d redisnew

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis
$ docker run --name myredisnew -d redisnew
0c244d708cc6d422ac82b7b66fa6bd7c67fb54cc5bf2ddfa46af53d407736082
```

## 3. docker ps

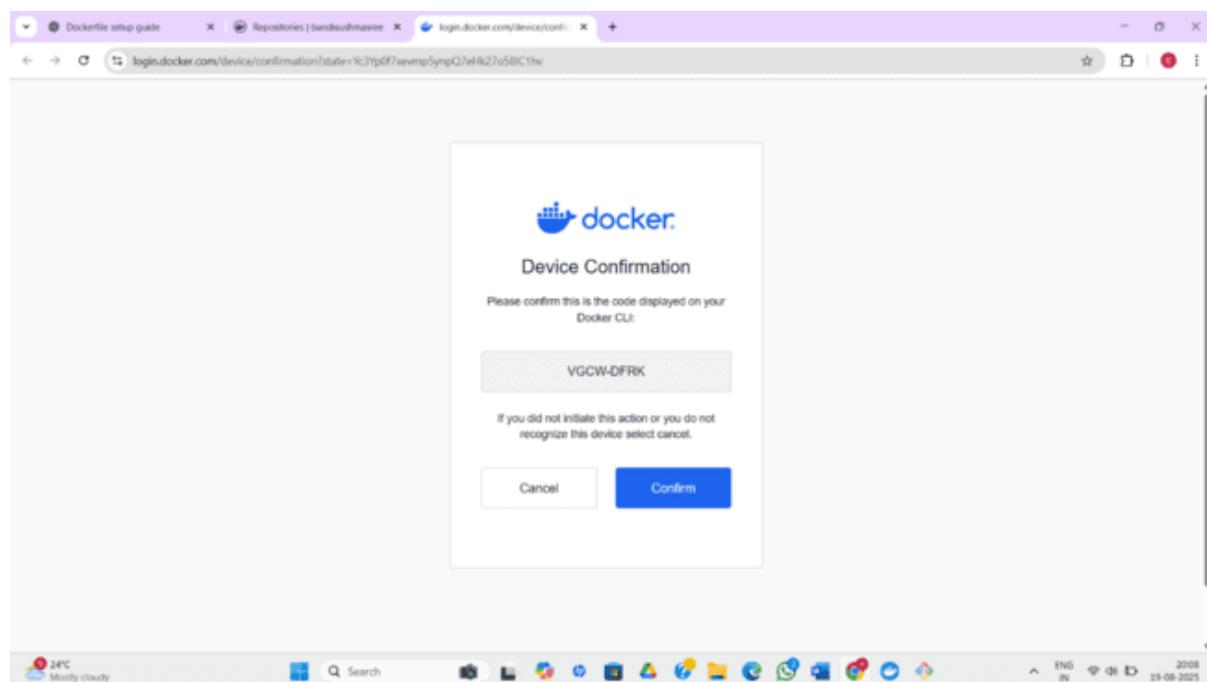
```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker ps
CONTAINER ID   IMAGE      COMMAND       CREATED          STATUS          PORTS     NAME
0c244d708cc6   redisnew   "docker-entrypoint.s..."   31 seconds ago   Up 30 seconds   6379/tcp   myredisnew
```

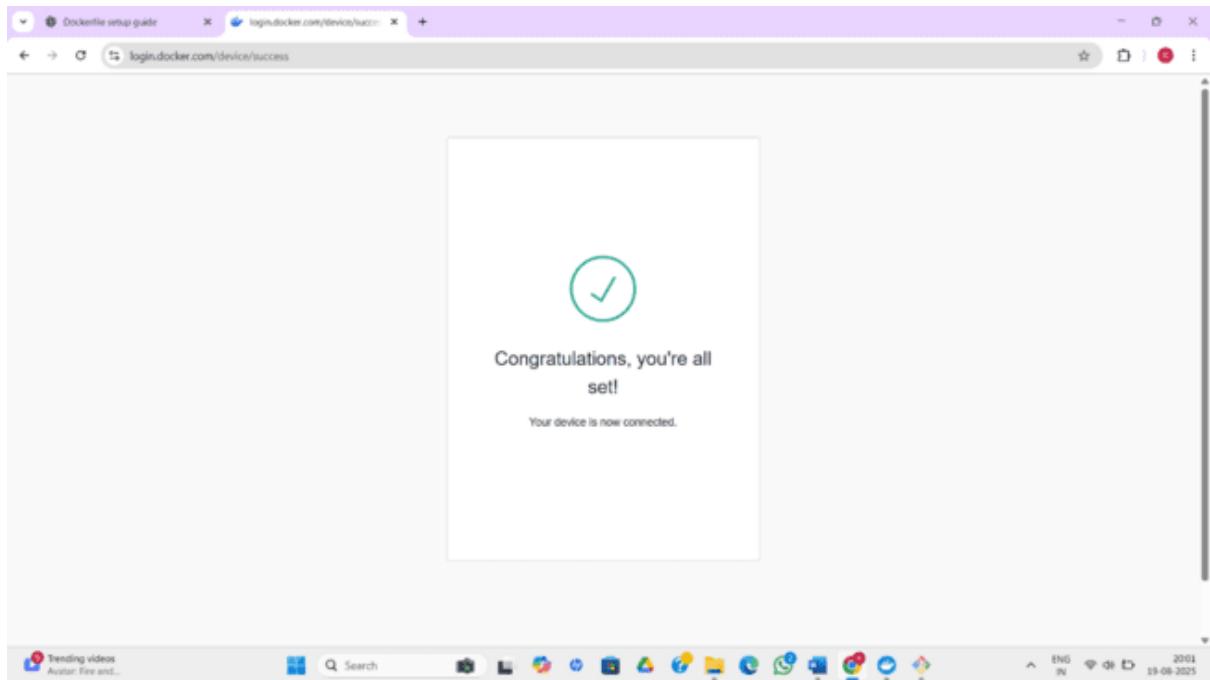
## 4. docker stop myredisnew

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis
$ docker stop myredisnew
myredisnew
```

## 5. docker login

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis
$ docker login
Authenticating with existing credentials...
Login Succeeded
```





## 6. docker ps -a

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS
	PORTS	NAMES		
5a7fd86f8509	azeemafirdous/redis1:latest	"docker-entrypoint.s..."	54 seconds ago	Up 52 second
s	6379/tcp	myredis		
86ad0197200e	ubuntu	/bin/bash	2 months ago	Exited (255)
5 days ago	infallible_shtern	/bin/bash		
fb062c4f516f	osubuntu	/bin/bash	4 months ago	Exited (255)
2 months ago	hopeful_fermi	/bin/bash		
ec09dbdb96497	osubuntu	/bin/bash	4 months ago	Exited (255)
2 months ago	eager_gould	/bin/bash		
22b013398083	osubuntu	/bin/bash	4 months ago	Exited (255)
2 months ago	quirky_swartz	/bin/bash		
38b5181c67af	osubuntu	/bin/bash	5 months ago	Exited (255)
4 months ago	magical_bartik	/bin/bash		
622489b66819	osubuntu	/bin/bash	5 months ago	Exited (255)
4 months ago	keen_pasteur	/bin/bash		
f12afb237620	ubuntu	/bin/bash	5 months ago	Exited (127)
5 months ago	cranky_nash	/bin/bash		
cc3e9c20869d	osubuntu	/bin/bash	5 months ago	Exited (127)
5 months ago	pedantic_kepler	/bin/bash		
4d66ec4905dd	ubuntu	/bin/bash	5 months ago	Exited (130)
5 months ago	quizzical_lederberg	/bin/bash		
1dc97087fd82	osubuntu	/bin/bash	5 months ago	Exited (255)
5 months ago	affectionate_brahmagupta	/bin/bash		
87f3adca5517	osubuntu	/bin/bash	5 months ago	Exited (255)
5 months ago	elated_lumiere	/bin/bash		
1bf02eee38db	osubuntu	/bin/bash	5 months ago	Exited (255)

## 7. docker commit

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker commit 0c244d708cc6 azeemafirdous/redis1
sha256:e39ec005579e3e7d42dc46e573716a2eb10e25e280de35160515d9a7fed4dd16
```

## 8. docker images

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker images
REPOSITORY          TAG      IMAGE ID      CREATED       SIZE
azeemafirdous/redis1    latest   e39ec005579e  14 seconds ago  200MB
redisnew              latest   2e2a048d9a45  5 days ago   200MB
hello-world           latest   a0dfb02aac21  2 weeks ago   20.3kB
osubuntu              latest   6829fdd8f64   5 months ago  515MB
ubuntu                latest   72297848456d  6 months ago  117MB
```

## 9. docker push

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker push azeemafirdous/redis1:1.0
The push refers to repository [docker.io/azeemafirdous/redis1]
tag does not exist: azeemafirdous/redis1:1.0

azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker push azeemafirdous/redis1:latest
The push refers to repository [docker.io/azeemafirdous/redis1]
f22261c94fe4: Pushed
63edde0222ea: Pushed
311d9cf20af5: Pushed
b1badc6e5066: Pushed
e51f60c71d8e: Pushed
6f34ca96de3f: Pushed
4f4fb700ef54: Pushed
latest: digest: sha256:e39ec005579e3e7d42dc46e573716a2eb10e25e280de35160515d9a7fed4dd16 size: 1821
```

## 10. docker rm

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker rm 0c244d708cc6
0c244d708cc6
```

## 11. docker rmi

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker rmi azeemafirdous/redis1
Untagged: azeemafirdous/redis1:latest
Deleted: sha256:e39ec005579e3e7d42dc46e573716a2eb10e25e280de35160515d9a7fed4dd16
```

## 12. docker ps -a

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NA
MES						
86ad0197200e	ubuntu	"/bin/bash"	2 months ago	Exited (255) 5 days ago		in
fabbile_shtern	osubuntu	"/bin/bash"	4 months ago	Exited (255) 2 months ago		ho
peful_fermi	osubuntu	"/bin/bash"	4 months ago	Exited (255) 2 months ago		ea
ec09dbd96497	osubuntu	"/bin/bash"	4 months ago	Exited (255) 2 months ago		
ger_gould	osubuntu	"/bin/bash"	4 months ago	Exited (255) 2 months ago		
22b013398083	osubuntu	"/bin/bash"	4 months ago	Exited (255) 2 months ago		qu
irky_swartz	osubuntu	"/bin/bash"	5 months ago	Exited (255) 4 months ago		ma
38b5181c67af	osubuntu	"/bin/bash"	5 months ago	Exited (255) 4 months ago		
gical_bartik	osubuntu	"/bin/bash"	5 months ago	Exited (255) 4 months ago		ke
622489b66819	osubuntu	"/bin/bash"	5 months ago	Exited (255) 4 months ago		
en_pasteur	ubuntu	"/bin/bash"	5 months ago	Exited (127) 5 months ago		cr
f12afb237620	ubuntu	"/bin/bash"	5 months ago	Exited (127) 5 months ago		
anky_nash	osubuntu	"/bin/bash"	5 months ago	Exited (127) 5 months ago		pe
cc3e9c20869d	osubuntu	"/bin/bash"	5 months ago	Exited (127) 5 months ago		
dantic_kepler	ubuntu	"/bin/bash"	5 months ago	Exited (130) 5 months ago		qu
4d66ec4905dd	ubuntu	"/bin/bash"	5 months ago	Exited (255) 5 months ago		
izzical_lederberg	osubuntu	"/bin/bash"	5 months ago	Exited (255) 5 months ago		af
1dc97087fd82	osubuntu	"/bin/bash"	5 months ago	Exited (255) 5 months ago		
fectionate_brahmagupta	osubuntu	"/bin/bash"	5 months ago	Exited (255) 5 months ago		el
87f3adca5517	osubuntu	"/bin/bash"	5 months ago	Exited (255) 5 months ago		
ated_lumiere	osubuntu	"/bin/bash"	5 months ago	Exited (255) 5 months ago		ec
1bf02eee38db	osubuntu	"/bin/bash"	5 months ago	Exited (255) 5 months ago		
static_lovelace						

## 13. docker logout

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker logout
Removing login credentials for https://index.docker.io/v1/
```

## 14. docker pull

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker pull azeemafirdous/redis1:latest
latest: Pulling from azeemafirdous/redis1
Digest: sha256:e39ec005579e3e7d42dc46e573716a2eb10e25e280de35160515d9a7fed4dd16
Status: Downloaded newer image for azeemafirdous/redis1:latest
docker.io/azeemafirdous/redis1:latest
```

## 15. docker run --name myredis -d

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker run --name myredis -d azeemafirdous/redis1:latest
5a7fd86f8509db32a2c662bdfc4978c23aaa41efb3bbef9406c3ebb38066e4b6
```

## 16. docker exec -it myredis redis-cli

## 17. SET name

## 18. GET name

## 19. exit

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker exec -it myredis redis-cli
127.0.0.1:6379> SET name "Azeema firdouss"
OK
127.0.0.1:6379> GET name
"Azeema firdouss"
127.0.0.1:6379> exit
```

## 20. docker ps -a

CONTAINER ID	IMAGE PORTS	NAMES	COMMAND	CREATED	STATUS
5a7fd86f8509	azeemafirdous/redis1:latest 6379/tcp	myredis	"docker-entrypoint.s..."	54 seconds ago	Up 52 second
s86ad0197200e	ubuntu	infallible_shtern	"/bin/bash"	2 months ago	Exited (255)
5 days ago	osubuntu	hopeful_fermi	"/bin/bash"	4 months ago	Exited (255)
fb062c4f516f	osubuntu	eager_gould	"/bin/bash"	4 months ago	Exited (255)
2 months ago	osubuntu	quirky_swartz	"/bin/bash"	4 months ago	Exited (255)
ec09dbbd96497	osubuntu	magical_bartik	"/bin/bash"	5 months ago	Exited (255)
2 months ago	osubuntu	keen_pasteur	"/bin/bash"	5 months ago	Exited (255)
22b013398083	osubuntu	cranky_nash	"/bin/bash"	5 months ago	Exited (127)
2 months ago	osubuntu	pedantic_kepler	"/bin/bash"	5 months ago	Exited (127)
38b5181c67af	osubuntu	quizzical_lederberg	"/bin/bash"	5 months ago	Exited (130)
4 months ago	osubuntu	affectionate_brahmagupta	"/bin/bash"	5 months ago	Exited (255)
622489b66819	osubuntu	elated_lumiere	"/bin/bash"	5 months ago	Exited (255)
4 months ago	ubuntu		"/bin/bash"	5 months ago	Exited (255)
f12afb237620	ubuntu		"/bin/bash"	5 months ago	Exited (127)
5 months ago	osubuntu		"/bin/bash"	5 months ago	Exited (127)
cc3e9c20869d	osubuntu		"/bin/bash"	5 months ago	Exited (127)
5 months ago	ubuntu		"/bin/bash"	5 months ago	Exited (130)
4d66ec4905dd	ubuntu		"/bin/bash"	5 months ago	Exited (255)
5 months ago	osubuntu		"/bin/bash"	5 months ago	Exited (255)
1dc97087fd82	osubuntu		"/bin/bash"	5 months ago	Exited (255)
5 months ago	osubuntu		"/bin/bash"	5 months ago	Exited (255)
87f3adca5517	osubuntu		"/bin/bash"	5 months ago	Exited (255)
5 months ago	osubuntu		"/bin/bash"	5 months ago	Exited (255)
1bf02eee38db	osubuntu		"/bin/bash"	5 months ago	Exited (255)

## 21. docker stop myredis

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker stop myredis
myredis
```

## 22. docker rm

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker rm 5a7fd86f8509
5a7fd86f8509
```

## 23. docker images

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker images
REPOSITORY          TAG      IMAGE ID      CREATED       SIZE
azeemafirdous/redis1    latest   e39ec005579e  9 minutes ago  200MB
redisnew            latest   2e2a048d9a45  5 days ago   200MB
hello-world         latest   a0dfb02aac21  2 weeks ago   20.3kB
osubuntu             latest   6829fddff8f64  5 months ago  515MB
ubuntu               latest   72297848456d  6 months ago  117MB
```

## 24. docker rmi

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker rmi azeemafirdous/redis1:latest
Untagged: azeemafirdous/redis1:latest
Deleted: sha256:e39ec005579e3e7d42dc46e573716a2eb10e25e280de35160515d9a7fed4dd16
```

## 25. Remove Login Credentials (Optional)

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker logout
Removing login credentials for https://index.docker.io/v1/
```

## Task 3: Scenario based Questions

**1.Your application is running inside Docker, but you're not sure if the container is active.**

**Which command helps you check running containers?**

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
b5a712e78f2a redisnew "docker-entrypoint.s..." 5 seconds ago Up 4 seconds 6379/tcp myredisnew

azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
b5a712e78f2a redisnew "docker-entrypoint.s..." 23 seconds ago Up 21 seconds 6379/
tcp myredisnew
86ad0197200e ubuntu "/bin/bash" 2 months ago Exited (255) 5 days ago
infallible_shtern
fb062c4f516f osubuntu hopeful_fermi
ec09dbd96497 osubuntu eager_gould
22b013398083 osubuntu quirky_swartz
38b5181c67af osubuntu magical_bartik
622489b66819 osubuntu keen_pasteur
f12afb237620 ubuntu cranky_nash
cranky_nash
```

**2. You notice one of your containers is consuming high CPU and want to stop it.**

**How do you stop a running container named web\_app?**

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker pull nginx
Using default tag: latest
latest: Pulling from library/nginx
c3741b707ce6: Download complete
a2da0c0f2353: Download complete
716cdf61af59: Download complete
14e422fd20a0: Download complete
14a859b5ba24: Download complete
e5d9bb0b85cc: Download complete
Digest: sha256:33e0bbc7ca9ecf108140af6288c7c9d1ecc77548cbfd3952fd8466a75edefe57
Status: Downloaded newer image for nginx:latest
docker.io/library/nginx:latest

azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker run -d --name web_app -p 8080:80 nginx
8bd39bb919079a4723935b0b5d779753e17bf0cf4d820bffabe7b49fd64f6dca

azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
8bd39bb91907 nginx "/docker-entrypoint...." 8 seconds ago Up 5 seconds 0.0.0.0:8080-
>80/tcp web_app
b5a712e78f2a redisnew "docker-entrypoint.s..." About a minute ago Up About a minute 6379/tcp myredisnew
```

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project
$ docker stop web_app
web_app
```

**3. You've written a Dockerfile in your project directory and want to build an image named myapi.**

## What Docker CLI command do you use?

```
azeem@LAPTOP-MUV4D4NQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker build -t myapi .
[+] Building 4.4s (5/5) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 76B
=> [internal] load metadata for docker.io/library/redis:latest
=> [internal] load .dockerignore
=> => transferring context: 28
=> CACHED [1/1] FROM docker.io/library/redis:latest@sha256:cc2dfb8f5151da2684b4a09bd04b567f92d075
=> => resolve docker.io/library/redis:latest@sha256:cc2dfb8f5151da2684b4a09bd04b567f92d07591d9198
=> exporting to image
=> => exporting layers
=> => exporting manifest sha256:5ad876ccc1c46b2046e6706fee0f5953519cd22b7fcbb76fdb897544851ab4985
=> => exporting config sha256:f5b47042e2a5a960bc6bac4a2ef05fb1e2ae054f3d355efcf15c67b865c05647
=> => exporting attestation manifest sha256:6e8081bd0bdb0f1beb6fa35fe297e091ad761d6100169c709c20f
=> => exporting manifest list sha256:64825fb4d70a25b9ad01bdbf44036b122f04e26ab705295a7c73e2c36854
=> => naming to docker.io/library/myapi:latest
=> => unpacking to docker.io/library/myapi:latest

azeem@LAPTOP-MUV4D4NQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker images
REPOSITORY          TAG      IMAGE ID      CREATED       SIZE
redisnew            latest   2e2a048d9a45  5 days ago   200MB
myapi               latest   64825fb4d70a  5 days ago   200MB
nginx              latest   33e0bbc7ca9e  10 days ago  279MB
hello-world         latest   a0fdb02aac21  2 weeks ago  20.3kB
osubuntu            latest   6829ffddf8f64  5 months ago  515MB
ubuntu              latest   72297848456d  6 months ago  117MB
```

4. You want to run your web\_app container and expose its internal port 5000 on host port 8080.

# Which command should you use?

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker run -d -p 8080:5000 --name web_apps myapi
f38c2abbba91faa701a02c23a6f2f6132f0ab37230aebe32002de649bc944f2a
```

5. Your container is running, but you want to go inside and debug it using a shell. What CLI command helps you enter the container's shell?

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker exec -it web_app /bin/bash
Error response from daemon: container 8bd39bb919079a4723935b0b5d779753e17bf0cf4d820bffabe7b49fd64f6dca is
not running
```

6. You've built a few test images and want to delete one called old\_api. How would you do this?

```
azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker images
REPOSITORY      TAG        IMAGE ID      CREATED       SIZE
redisnew        latest     2e2a048d9a45  5 days ago   200MB
old_api         latest     e02c31e25a9d  5 days ago   200MB
myapi           latest     64825fb4d70a  5 days ago   200MB
nginx           latest     33e0bbc7ca9e  10 days ago  279MB
hello-world     latest     a0dfb02aac21  2 weeks ago  20.3kB
osubuntu        latest     6829fdddf8f64  5 months ago 515MB
ubuntu          latest     72297848456d  6 months ago  117MB

azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker rmi old_api
Untagged: old_api:latest
Deleted: sha256:e02c31e25a9df7dbf1abee126d84a24219c9be6d92cd9e88e46dcec0d20faa46
```

- 7. Your app crashed in the container. You need to check the logs. How do you check this?**

```

azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker logs web_app
/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: Sourcing /docker-entrypoint.d/15-local-resolvers.envsh
/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
2025/08/24 06:09:05 [notice] 1#1: using the "epoll" event method
2025/08/24 06:09:05 [notice] 1#1: nginx/1.29.1
2025/08/24 06:09:05 [notice] 1#1: built by gcc 12.2.0 (Debian 12.2.0-14+deb12u1)
2025/08/24 06:09:05 [notice] 1#1: OS: Linux 5.15.167.4-microsoft-standard-WSL2
2025/08/24 06:09:05 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2025/08/24 06:09:05 [notice] 1#1: start worker processes
2025/08/24 06:09:05 [notice] 1#1: start worker process 29
2025/08/24 06:09:05 [notice] 1#1: start worker process 30
2025/08/24 06:09:05 [notice] 1#1: start worker process 31
2025/08/24 06:09:05 [notice] 1#1: start worker process 32
2025/08/24 06:09:05 [notice] 1#1: start worker process 33
2025/08/24 06:09:05 [notice] 1#1: start worker process 34
2025/08/24 06:09:05 [notice] 1#1: start worker process 35
2025/08/24 06:09:05 [notice] 1#1: start worker process 36
2025/08/24 06:09:05 [notice] 1#1: start worker process 37

```

```

azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker logs ubuntu

```

```

azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker logs 5ec370e73792
root@5ec370e73792:/# apt update
Get:1 http://archive.ubuntu.com/ubuntu noble InRelease [256 kB]
Get:2 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:3 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Packages [34.0 kB]
Get:4 http://archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:5 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Packages [909 kB]
Get:6 http://archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:7 http://archive.ubuntu.com/ubuntu noble/restricted amd64 Packages [117 kB]
Get:8 http://archive.ubuntu.com/ubuntu noble/main amd64 Packages [1808 kB]
Get:9 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [1062 kB]
Get:10 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [841 kB]
Get:11 http://archive.ubuntu.com/ubuntu noble/universe amd64 Packages [19.3 MB]
43% [11 Packages 4332 kB/19.3 MB 22%]
50% [11 Packages 6718 kB/19.3 MB 35%]
55% [11 Packages 8460 kB/19.3 MB 44%]
57% [11 Packages 9121 kB/19.3 MB 47%]
62% [11 Packages 10.9 MB/19.3 MB 56%]
65% [11 Packages 12.2 MB/19.3 MB 63%]

```

## 8. You want to start a container and let it run in the background. Which command should you use?

```

azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker run -d --name ubuntu_bg ubuntu sleep 1000
b971a50e8cdffebcea199d48723f4bf8b7c7cdebeb5e78b0633a620981e95ba4f

```

## 9. You're not sure which container is using port 3000. How do you check?

CONTAINER ID							IMAGE	COMMAND		CREATED	STATUS	PORTS	
								NAMES					
37ade3a69024	myapi:latest	"docker-entrypoint.s..."		About a minute ago	Up	About a minute				6379/tcp			
b971a50e8cdf	ubuntu	myapi	"sleep 1000"	3 minutes ago	Up	3 minutes							
f38c2abbbba91	myapi	"docker-entrypoint.s..."		11 minutes ago	Up	11 minutes				6379/tcp,			
	0.0.0.0:8080->5000/tcp	web_apps											
CONTAINER ID							NAME	CPU %	MEM USAGE / LIMIT	MEM %	NET I/O	BLOCK I/O	PIDS
8e0059dd6e07	myapi2	0.51%	9.379MiB / 7.585GiB	0.12%	746B / 0B	0B / 0B	7						
37ade3a69024	myapi	0.61%	9.496MiB / 7.585GiB	0.12%	746B / 0B	0B / 0B	7						
f38c2abbbba91	web_apps	0.54%	11.7MiB / 7.585GiB	0.15%	746B / 0B	0B / 0B	7						
b5a712e78f2a	myredisnew	0.64%	11.54MiB / 7.585GiB	0.15%	1.05kB / 0B	0B / 0B	7						

## 10. You built an image but forgot to tag it. How do you tag it now?

```

azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker tag myapi:latest
"docker tag" requires exactly 2 arguments.
See 'docker tag --help'.

Usage: docker tag SOURCE_IMAGE[:TAG] TARGET_IMAGE[:TAG]

Create a tag TARGET_IMAGE that refers to SOURCE_IMAGE

azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker tag myapi:latest myapi:v1

azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ |

```

**11. You want to export an image to a .tar file for offline transfer. How do you export it?**

```

azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker save -o myapi_image.tar myapi:latest

azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ |

```

**12. You want to restart a container automatically if it crashes. What Docker CLI command do you use?**

```

azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker run -d --restart=always --name myapi3 myapi:latest
6058c961159161ad39ade000d760403a63d339616519c09f8256ad195486a6a9

```

**13. You want to see how much CPU/RAM each container uses. What Docker CLI command do you use? How to Control or Limit RAM in Docker? How to Measure Actual Memory Usage?**

```

azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker stats

```

CONTAINER ID	NAME	CPU %	MEM USAGE / LIMIT	MEM %	NET I/O	BLOCK I/O	PIDS
6058c9611591	myapi3	0.51%	9.379MiB / 7.585GiB	0.12%	746B / 0B	0B / 0B	7
8e0059dd6e07	myapi2	0.46%	9.379MiB / 7.585GiB	0.12%	746B / 0B	0B / 0B	7
37ade3a69024	myapi	0.52%	9.496MiB / 7.585GiB	0.12%	746B / 0B	0B / 0B	7
f38c2abbba91	web_apps	0.38%	11.71MiB / 7.585GiB	0.15%	746B / 0B	0B / 0B	7
b5a712e78f2a	myredisnew	0.50%	11.42MiB / 7.585GiB	0.15%	1.05kB / 0B	0B / 0B	7

**14. You want your container to run a shell command before starting the app. What do you include in docker file?**

```

FROM node:18

WORKDIR /app
COPY . .

RUN npm install
COPY entrypoint.sh /entrypoint.sh
RUN chmod +x /entrypoint.sh

ENTRYPOINT [ "/entrypoint.sh" ]
CMD [ "npm", "start" ]

```

## 15. You want to create a custom Nginx image with your static files. What do you do?

```

azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker pull nginx
Using default tag: latest
latest: Pulling from library/nginx
Digest: sha256:33e0bbc7ca9ecf108140af6288c7c9d1ecc77548cbfd3952fd8466a75edefe57
Status: Image is up to date for nginx:latest
docker.io/library/nginx:latest

azeem@LAPTOP-MUV4INQ MINGW64 ~/oneDrive/Desktop/Docker_Project/Redis (main)
$ docker run -d --name web_app -p 8081:80 nginx
9ef404bc40a142c0cc59675658459fa059e039bec75f01e5cf74b5bd03cc10aa

azeem@LAPTOP-MUV4INQ MINGW64 ~/oneDrive/Desktop/Docker_Project/Redis (main)
$ docker ps
CONTAINER ID   IMAGE      COMMAND       CREATED        STATUS        PORTS
NAMES
9ef404bc40a1   nginx      "/docker-entrypoint..."   11 seconds ago   Up 10 seconds   0.0.0.0:8081->80/tcp
web_app

azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker stop web_app
web_app

azeem@LAPTOP-MUV4INQ MINGW64 ~/OneDrive/Desktop/Docker_Project/Redis (main)
$ docker build -t myapi .
[+] Building 1.6s (1/2)
=> [internal] load build definition from Dockerfile
=> > transferring dockerfile: 76B

```