

Ques 7 : Create a Docker volume and mount it to a container.

SOLN:

Step 1: Create a Docker Volume

```
docker volume create my-volume
```

You can list all volumes to confirm:

```
docker volume ls
```

```
C:\Users\prate>docker volume create my-volume
my-volume

C:\Users\prate>docker volume ls
DRIVER      VOLUME NAME
local      my-volume

C:\Users\prate>
```

Step 2: Run a Container and Mount the Volume

Mount the volume to a specific path in the container:

```
docker run -d -v my-volume:/app/data --name my-container nginx
```

- `my-volume`: your named volume.
- `/app/data`: directory inside the container where the volume will be mounted.
- `nginx`: image you're running (can be any image).
- `--name my-container`: optional name for your container.

```
C:\Users\prate>docker run -d -v my-volume:/app/data --name my-python-app nginx
fe501cbd6a4942c9f60f4553aaa191214b61bf10d0f3f742f9147cec207fc9d
```

```
C:\Users\prate>docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
fe501cbd6a49	nginx	"/docker-entrypoint..."	7 seconds ago	Up 6 seconds	80/tcp	my-python-app

Step 3: Check Volume Mount

To inspect where the volume is mounted:

```
docker inspect my-container
```

Search for the `MOUNTS` section in the output.

Volume Mount Confirmed

```
"Mounts": [  
  {  
    "Type": "volume",  
    "Name": "my-volume",  
    "Source": "/var/lib/docker/volumes/my-volume/_data",  
    "Destination": "/app/data",  
    "Driver": "local",  
    "RW": true  
  }  
]
```

Step 4: Test the Volume

1. Exec into the container:

```
docker exec -it my-container sh
```

2. Go to the mounted directory:

```
cd /app/data  
echo "Hello from volume!" > test.txt
```

```
C:\Users\prate>docker exec -it my-python-app sh  
# cd /app/data  
# echo "Hello from volume!" > test.txt  
# exit  
  
C:\Users\prate>
```

3. Exit and check from host:

```
docker run --rm -v my-volume:/data alpine cat /data/test.txt
```

It should output:

Hello from volume!

```
C:\Users\prate>docker run --rm -v my-volume:/data ubuntu cat /data/test.txt  
Hello from volume!  
  
C:\Users\prate>
```

`docker run -it --rm -v my-volume:/data ubuntu sh` → open a shell inside and explore /data

This is an extra verification step to:

- Check if the volume is mounted properly.
- See all the files present inside /data.
- Add, modify, or remove files manually inside the volume.

```
C:\Users\prate>docker run -it --rm -v my-volume:/data ubuntu sh
# cd /data
# ls
test.txt
# cat test.txt
Hello from volume!
#
```