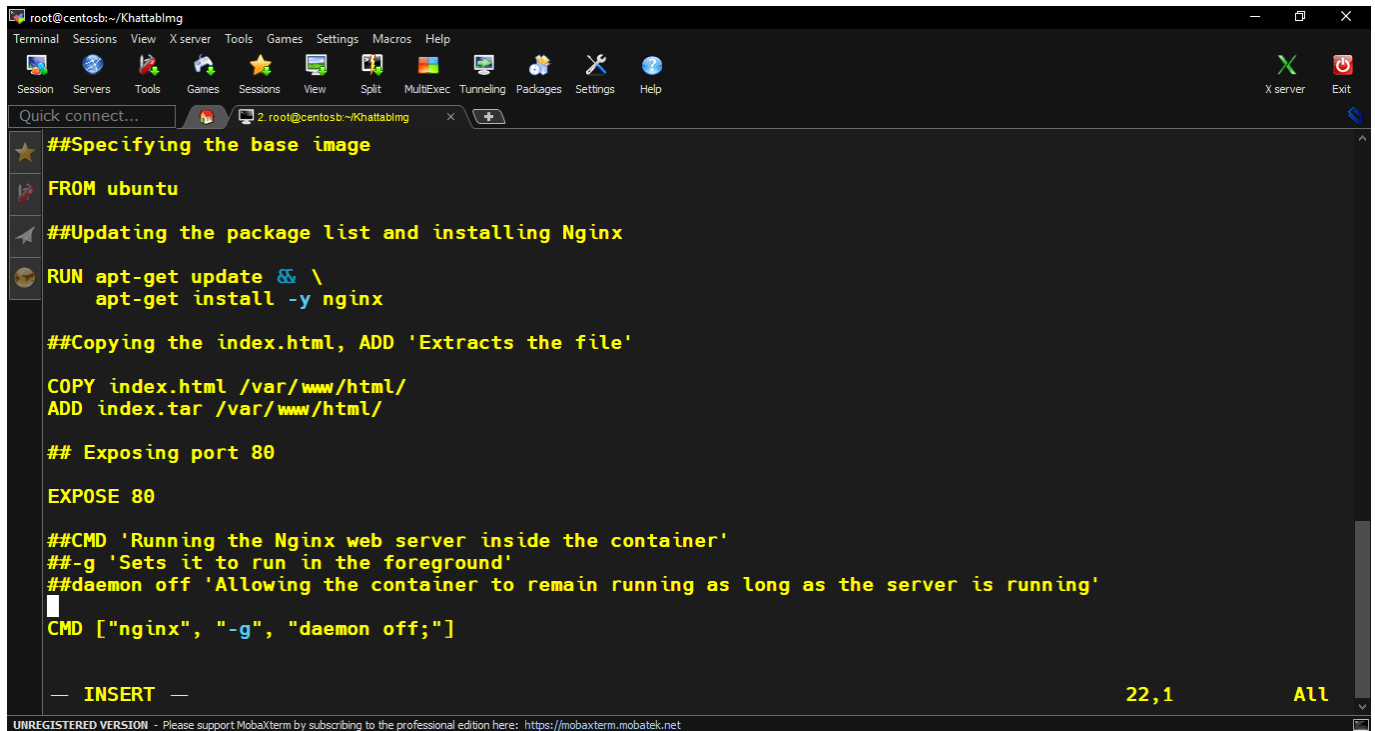


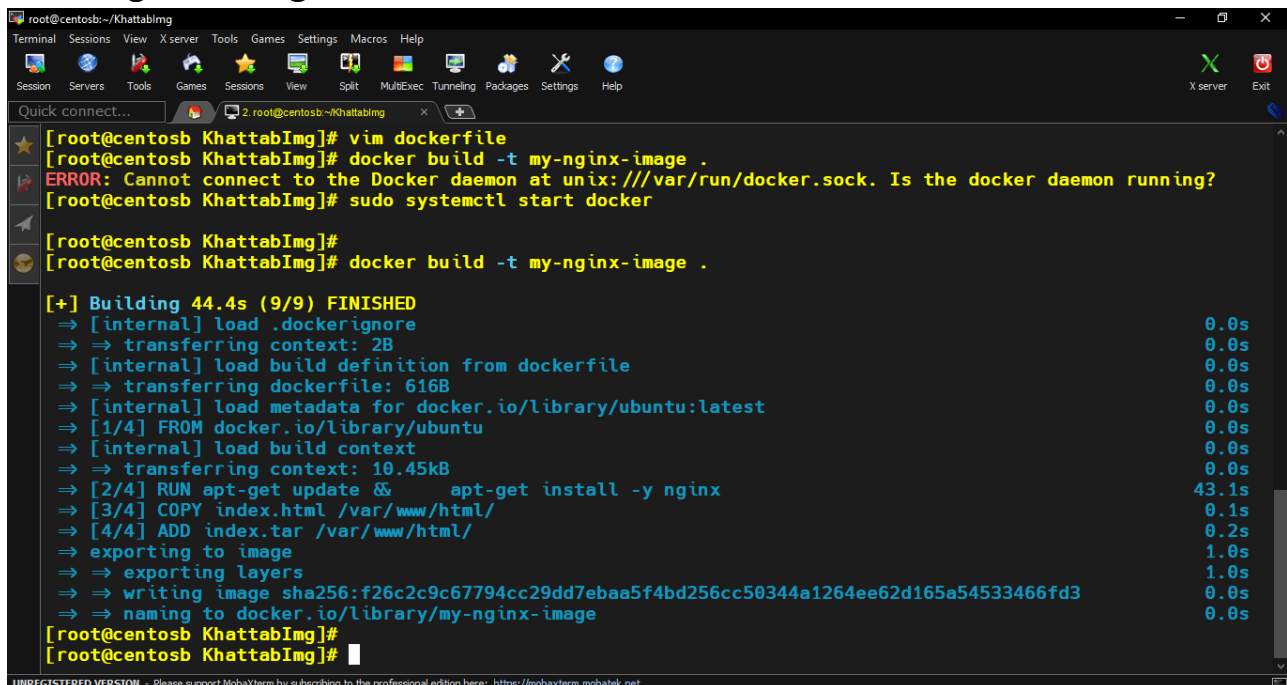
P1:

Docker file:



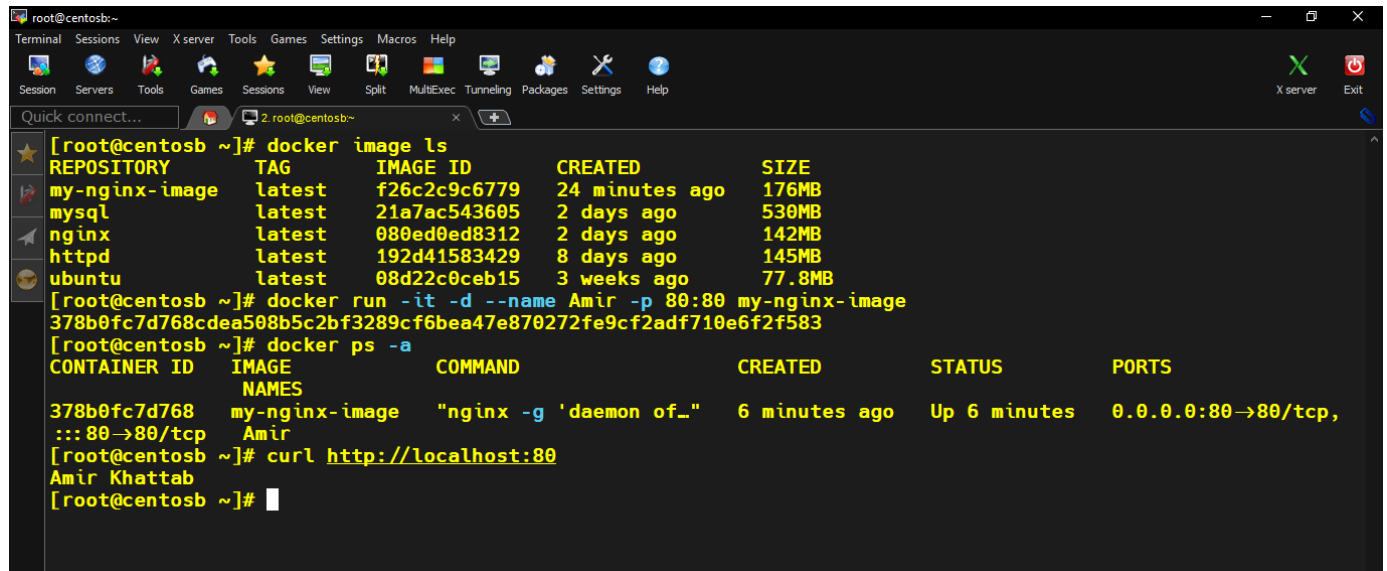
```
root@centosb:~/KhatabImg
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help
Quick connect... 2.root@centosb:~/KhatabImg x
★ ##Specifying the base image
FROM ubuntu
##Updating the package list and installing Nginx
RUN apt-get update && \
    apt-get install -y nginx
##Copying the index.html, ADD 'Extracts the file'
COPY index.html /var/www/html/
ADD index.tar /var/www/html/
## Exposing port 80
EXPOSE 80
##CMD 'Running the Nginx web server inside the container'
##-g 'Sets it to run in the foreground'
##daemon off 'Allowing the container to remain running as long as the server is running'
CMD ["nginx", "-g", "daemon off;"]
— INSERT — 22,1 All
UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: https://mobaxterm.mobatek.net
```

Building the image:



```
root@centosb:~/KhatabImg
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help
Quick connect... 2.root@centosb:~/KhatabImg x
★ [root@centosb KhatabImg]# vim dockerfile
[root@centosb KhatabImg]# docker build -t my-nginx-image .
ERROR: Cannot connect to the Docker daemon at unix:///var/run/docker.sock. Is the docker daemon running?
[root@centosb KhatabImg]# sudo systemctl start docker
[root@centosb KhatabImg]#
[root@centosb KhatabImg]# docker build -t my-nginx-image .
[+] Building 44.4s (9/9) FINISHED
=> [internal] load .dockerignore 0.0s
=> => transferring context: 2B 0.0s
=> [internal] load build definition from dockerfile 0.0s
=> => transferring dockerfile: 616B 0.0s
=> [internal] load metadata for docker.io/library/ubuntu:latest 0.0s
=> [1/4] FROM docker.io/library/ubuntu 0.0s
=> [internal] load build context 0.0s
=> => transferring context: 10.45kB 0.0s
=> [2/4] RUN apt-get update && apt-get install -y nginx 43.1s
=> [3/4] COPY index.html /var/www/html/ 0.1s
=> [4/4] ADD index.tar /var/www/html/ 0.2s
=> exporting to image 1.0s
=> => exporting layers 1.0s
=> => writing image sha256:f26c2c9c67794cc29dd7ebaa5f4bd256cc50344a1264ee62d165a54533466fd3 0.0s
=> => naming to docker.io/library/my-nginx-image 0.0s
[root@centosb KhatabImg]#
[root@centosb KhatabImg]#
UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: https://mobaxterm.mobatek.net
```

Creating container and test html file:



The screenshot shows a terminal window with the following commands and output:

```
[root@centosb ~]# docker image ls
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
my-nginx-image	latest	f26c2c9c6779	24 minutes ago	176MB
mysql	latest	21a7ac543605	2 days ago	530MB
nginx	latest	080ed0ed8312	2 days ago	142MB
httpd	latest	192d41583429	8 days ago	145MB
ubuntu	latest	08d22c0ceb15	3 weeks ago	77.8MB

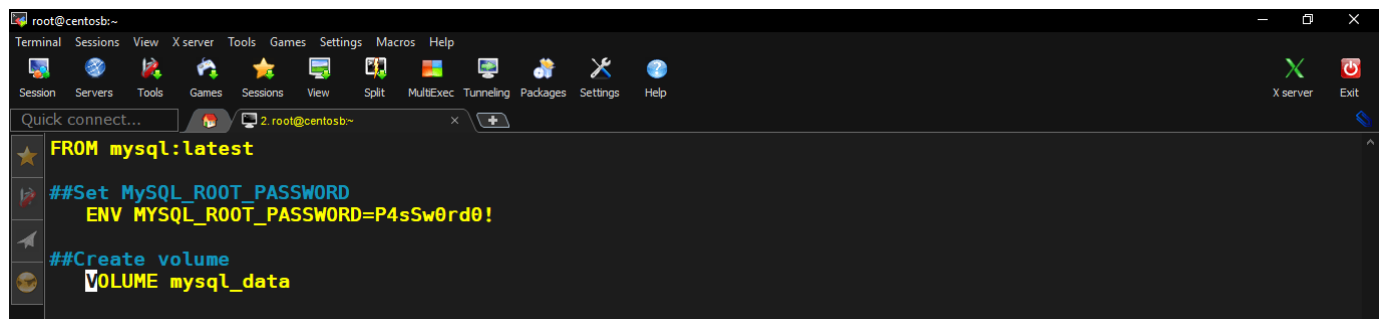
```
[root@centosb ~]# docker run -it -d --name Amir -p 80:80 my-nginx-image
378b0fc7d768cdea508b5c2bf3289cf6bea47e870272fe9cf2adf710e6f2f583
[root@centosb ~]# docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS
378b0fc7d768	my-nginx-image	"nginx -g 'daemon of..."	6 minutes ago	Up 6 minutes	0.0.0.0:80→80/tcp,
:::80→80/tcp	Amir				

```
[root@centosb ~]# curl http://localhost:80
Amir Khattab
[root@centosb ~]#
```

P2:

Docker File:



The screenshot shows a terminal window displaying the content of a Dockerfile:

```
FROM mysql:latest

##Set MySQL_ROOT_PASSWORD
ENV MYSQL_ROOT_PASSWORD=P4sSw0rd0!

##Create volume
VOLUME mysql_data
```

Building the image:

```
root@centosb: ~/KhattabImg
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help
Quick connect... 2.root@centosb:~/KhattabImg x +
[root@centosb KhattabImg]# vim dockerfile
[root@centosb KhattabImg]# docker build -t my-nginx-image .
ERROR: Cannot connect to the Docker daemon at unix:///var/run/docker.sock. Is the docker daemon running?
[root@centosb KhattabImg]# sudo systemctl start docker
[root@centosb KhattabImg]#
[root@centosb KhattabImg]# docker build -t my-nginx-image .

[+] Building 44.4s (9/9) FINISHED
=> [internal] load .dockerignore 0.0s
=> => transferring context: 2B 0.0s
=> [internal] load build definition from dockerfile 0.0s
=> => transferring dockerfile: 616B 0.0s
=> [internal] load metadata for docker.io/library/ubuntu:latest 0.0s
=> [1/4] FROM docker.io/library/ubuntu 0.0s
=> [internal] load build context 0.0s
=> => transferring context: 10.45kB 0.0s
=> [2/4] RUN apt-get update && apt-get install -y nginx 43.1s
=> [3/4] COPY index.html /var/www/html/ 0.1s
=> [4/4] ADD index.tar /var/www/html/ 0.2s
=> exporting to image 1.0s
=> => exporting layers 1.0s
=> => writing image sha256:f26c2c9c67794cc29dd7ebaa5f4bd256cc50344a1264ee62d165a54533466fd3 0.0s
=> => naming to docker.io/library/my-nginx-image 0.0s
[root@centosb KhattabImg]#
[root@centosb KhattabImg]#
```

The created volume:

```
root@centosb: ~
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help
Quick connect... 2.root@centosb:~ x +
[root@centosb ~]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        475M   0  475M   0% /dev
tmpfs           487M  16K  487M   1% /dev/shm
tmpfs           487M  7.8M  479M   2% /run
tmpfs           487M   0  487M   0% /sys/fs/cgroup
/dev/mapper/centos-root 8.0G  4.2G  3.9G  52% /
/dev/sda1       1014M  198M  817M  20% /boot
overlay         8.0G  4.2G  3.9G  52% /var/lib/docker/overlay2/043b2c4aa26064619659e56f6de3e573a2bb
2a579e4c97a2ebfea2bd8373b00d/merged
tmpfs           98M   0   98M   0% /run/user/0
[root@centosb ~]# docker ps -a
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS                    NAMES
24a7ae696e40   mysql_img  "docker-entrypoint.s..." 5 minutes ago  Up 5 minutes  3306/tcp, 33060/tcp      C1
[root@centosb ~]# docker volume ls
DRIVER    VOLUME NAME
local    7a64ee8e800bd2f7451bdedefafae984461d357b0f8605314c4ff92eb342dc40
local    d6977d29d2874f143b970c2446dd6ed1c1d66ea973e7d961c167ac9d6118eca8
local    mysql_data
[root@centosb ~]#
```

Creating container:

Testing the mount point by touching file “osamaaaaaaaaaaaaaa” in container /var/lib/mysql

The file will be permanently stored in /var/lib/docker/volumes/mysql_data/_data

```
root@centosb:~# docker image ls
REPOSITORY TAG IMAGE ID CREATED SIZE
img latest 4c6b79f320e4 18 hours ago 530MB
[root@centosb ~]# docker run -d -v mysql_data:/var/lib/mysql --name C1 img
57697790a0a018900fde23cd43777a2d0feebcf3c1eb505949501a8c81b55e7a
[root@centosb ~]# ls /var/lib/docker/volumes/mysql_data/_data/
auto.cnf ca.pem ib_buffer_pool mysql private_key.pem undo_001
binlog.000001 client-cert.pem ibdata1 mysql.ibd public_key.pem undo_002
binlog.000002 client-key.pem ibtmp1 mysql.sock server-cert.pem
binlog.index #ib_16384_0.dblwr #innodb_redo osamaaaaaaaaaaaaaa server-key.pem
ca-key.pem #ib_16384_1.dblwr #innodb_temp performance_schema sys
[root@centosb ~]# docker exec -it C1 bash
bash-4.4# ls /var/lib/mysql
'#ib_16384_0.dblwr' binlog.000001 client-cert.pem mysql private_key.pem undo_001
'#ib_16384_1.dblwr' binlog.000002 client-key.pem mysql.ibd public_key.pem undo_002
'#innodb_redo' binlog.index ib_buffer_pool mysql.sock server-cert.pem
'#innodb_temp' ca-key.pem ibdata1 osamaaaaaaaaaaaaaa server-key.pem
auto.cnf ca.pem ibtmp1 performance_schema sys
bash-4.4#
```