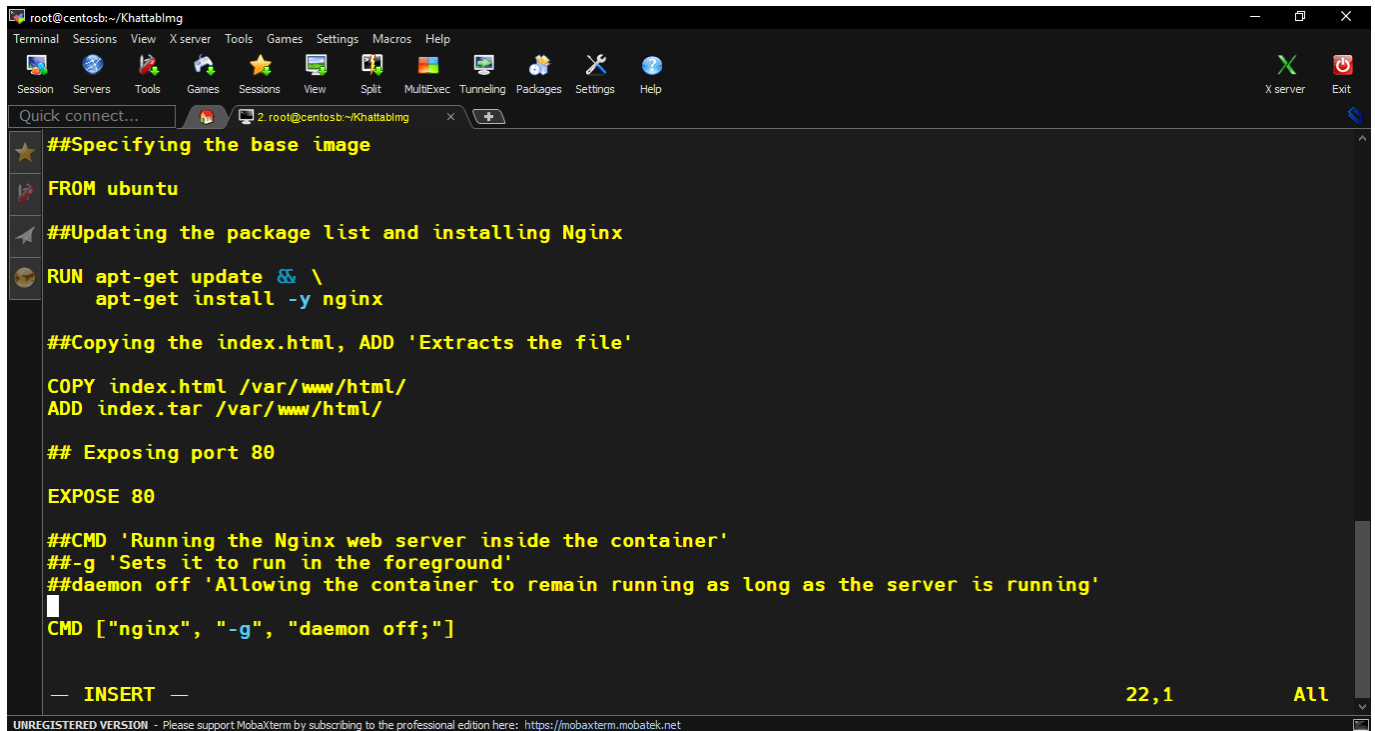


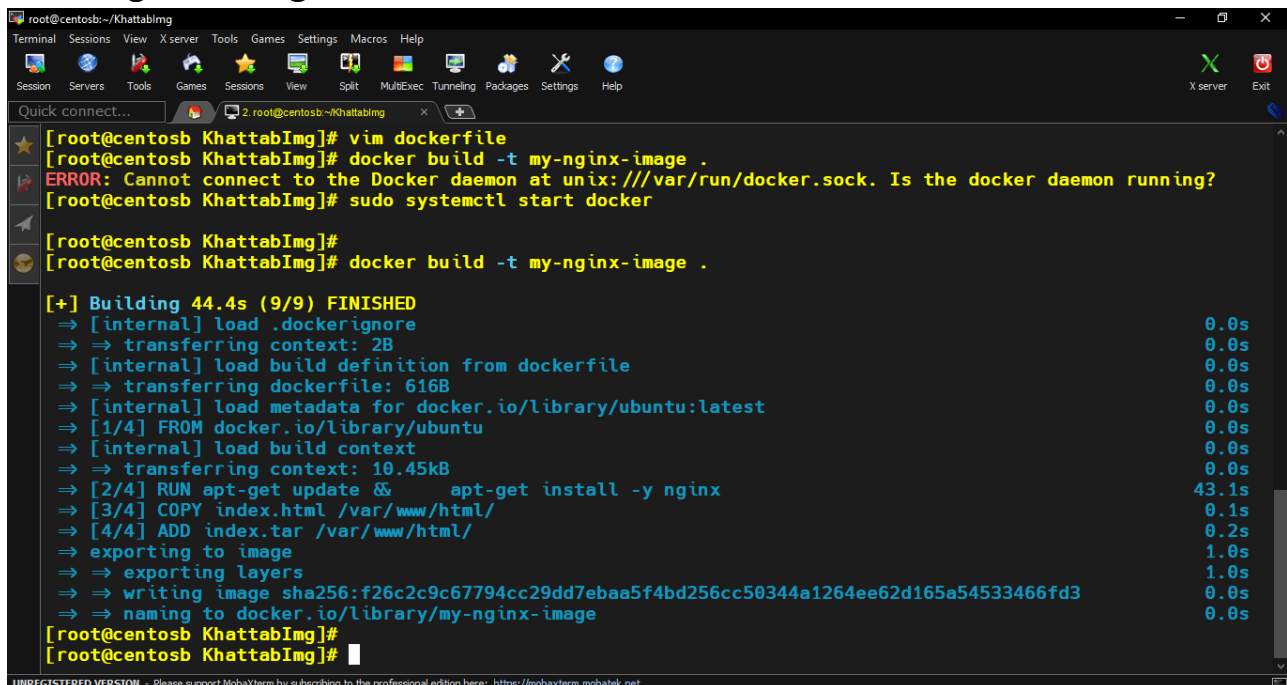
P1:

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
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```

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]#
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```

Creating container and test html file:

```
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~  
[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:

```
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~  
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]#
```

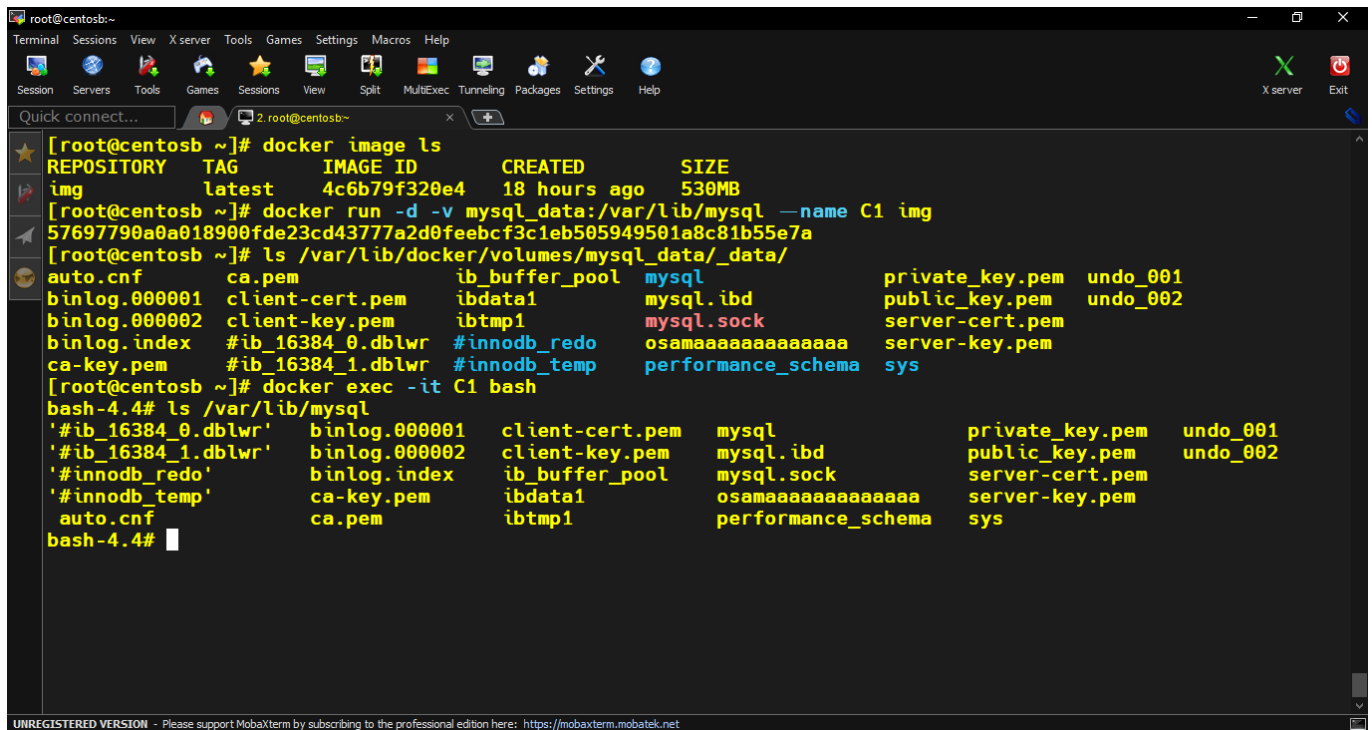
The created volume:

```
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



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

```
[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#
```

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P5:

```
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:~  
[root@centosb ~]# docker network create --driver bridge --subnet 192.168.0.1/24 AmirNetwork  
818f26a19f805e2da9392bcd239f78f0e9f8178d0b97a3722b1a6862ddaffa44  
[root@centosb ~]# docker network ls  
NETWORK ID      NAME      DRIVER      SCOPE  
818f26a19f80    AmirNetwork  bridge      local  
1cd90c01c2fc    bridge      bridge      local  
2f5d2259fac5    host        host        local  
37d015d8d8a3    none        null        local  
[root@centosb ~]# docker run -d -it --name c1 --network AmirNetwork ubuntu bash  
8e30c7f2de5854b8bd8333e2ce518528f101a1646224be43afe0b15943903225  
[root@centosb ~]# docker run -d -it --name c2 --network AmirNetwork ubuntu bash  
a800d022406c5f88204e3eb1a591dd44f4c9abbb39789cd5e5a99ef4bb23a158  
[root@centosb ~]#  
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```

```
root@8e30c7f2de58: /  
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@8e30c7f2de58: /  
root@a800d022406c: /#  
exit  
[root@centosb ~]# docker exec -it c1 bash  
root@8e30c7f2de58: /# ping c2  
PING c2 (192.168.0.3) 56(84) bytes of data.  
64 bytes from c2.AmirNetwork (192.168.0.3): icmp_seq=1 ttl=64 time=0.114 ms  
64 bytes from c2.AmirNetwork (192.168.0.3): icmp_seq=2 ttl=64 time=0.073 ms  
64 bytes from c2.AmirNetwork (192.168.0.3): icmp_seq=3 ttl=64 time=0.077 ms  
64 bytes from c2.AmirNetwork (192.168.0.3): icmp_seq=4 ttl=64 time=0.081 ms  
64 bytes from c2.AmirNetwork (192.168.0.3): icmp_seq=5 ttl=64 time=0.084 ms  
64 bytes from c2.AmirNetwork (192.168.0.3): icmp_seq=6 ttl=64 time=0.135 ms  
64 bytes from c2.AmirNetwork (192.168.0.3): icmp_seq=7 ttl=64 time=0.085 ms  
64 bytes from c2.AmirNetwork (192.168.0.3): icmp_seq=8 ttl=64 time=0.077 ms  
64 bytes from c2.AmirNetwork (192.168.0.3): icmp_seq=9 ttl=64 time=0.089 ms  
64 bytes from c2.AmirNetwork (192.168.0.3): icmp_seq=10 ttl=64 time=0.088 ms  
64 bytes from c2.AmirNetwork (192.168.0.3): icmp_seq=11 ttl=64 time=0.068 ms  
^C  
--- c2 ping statistics ---  
11 packets transmitted, 11 received, 0% packet loss, time 10012ms  
rtt min/avg/max/mdev = 0.068/0.088/0.135/0.018 ms  
root@8e30c7f2de58: /#  
UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: https://mobaxterm.mobatek.net
```