

## Problem 1

```
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help
Quick connect... 3. /home/mobaxterm x +
★ [root@centosb ~]#
[root@centosb ~]# sudo docker run hello-world
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
UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: https://mobaxterm.mobatek.net
```

```
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help
Quick connect... 3. root@centosb:~ x +
★ [root@centosb ~]# docker start d6a9d056b1cf
d6a9d056b1cf
[root@centosb ~]# docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS
PORTS         NAMES
c5ca2841e7f6   hello-world    "/hello"                14 hours ago   Exited (0) 5 minutes ago
d6a9d056b1cf   hello-world    "/hello"                15 hours ago   Exited (0) 8 seconds ago
eager_lichterman
[root@centosb ~]# docker rm c5ca2841e7f6
c5ca2841e7f6
[root@centosb ~]# docker rmi hello-world:latest
Error response from daemon: conflict: unable to remove repository reference
"hello-world:latest" (must force) - container d6a9d056b1cf is using its refe
renced image feb5d9fea6a5
[root@centosb ~]# docker rm d6a9d056b1cf
d6a9d056b1cf
[root@centosb ~]# docker ps -a
CONTAINER ID   IMAGE          COMMAND                  STATUS        PORTS        NAMES
[root@centosb ~]# docker rmi hello-world:latest
Untagged: hello-world:latest
Untagged: hello-world@sha256:ffb13da98453e0f04d33a6eee5bb8e46ee50d08ebe17735
fc0779d0349e889e9
Deleted: sha256:feb5d9fea6a5e9606aa995e879d862b825965ba48de054caab5ef356dc6b
3412
Deleted: sha256:e07ee1baac5fae6a26f30cabfe54a36d3402f96afda318fe0a96cec4ca39
3359
[root@centosb ~]#
```

## Problem 2

```
root@centosb:~# docker run -it --name MyUbuntu ubuntu
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
2ab09b027e7f: Pull complete
Digest: sha256:67211c14fa74f070d27cc59d69a7fa9aeff8e28ea118ef3babc295a0428a6d21
Status: Downloaded newer image for ubuntu:latest
root@9a4f416d3467:/# echo docker
docker
root@9a4f416d3467:/# touch hello-docker
root@9a4f416d3467:/# ls
bin  dev  hello-docker  lib  lib64  media  opt  root  sbin  sys  usr
boot  etc  home  lib32  libx32  mnt  proc  run  srv  tmp  var
root@9a4f416d3467:/# ^C
root@9a4f416d3467:/#
exit
[root@centosb ~]# docker ps -a
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS          NAMES
9a4f416d3467   ubuntu    "/bin/bash"             2 minutes ago  Exited (130)  25 seconds ago  MyUbuntu
[root@centosb ~]# docker rm MyUbuntu
MyUbuntu
[root@centosb ~]# docker container prune
WARNING! This will remove all stopped containers.
Are you sure you want to continue? [y/N] y
Total reclaimed space: 0B
[root@centosb ~]#
```

## Problem 3

```
root@centosb:~#
Deleted Containers:
c7ae3649f91f2c4223736b8b5d3d8db0016e21d7ec2162b18240d8eb886f108f
ac52aa1e1075e39550d5aa9146602c467f711858d026e497c8526ada2ffd0029
a3175ad4d3cf49dce60fa81705a15d47e28008037144627b60fc606665a15feb
f87c7dbb757f5406103c71e8ae119661b8e86f83643c308539a79523f61a623f

Total reclaimed space: 0B
[root@centosb ~]#
[root@centosb ~]# docker ps -a
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS          NAMES
[root@centosb ~]#
[root@centosb ~]# docker run -p 8080:80 -d --name apache -v /Mount:/usr/local/apache2/htdocs httpd
982574eb7ffe2a67844080c84ceb6613cbd62f77afbd78f32830d0114acb4d64
[root@centosb ~]# curl http://localhost:8080
Amir Khattab
[root@centosb ~]# docker stop apache
apache
[root@centosb ~]# docker rm apache
apache
[root@centosb ~]# ls
anaconda-ks.cfg
[root@centosb ~]# ls /
bin  dev  home  lib64  mnt  opt  root  sbin  sys  usr
boot  etc  lib  media  Mount  proc  run  srv  tmp  var
[root@centosb ~]# ls /Mount/
index.html
```

## Problem 4

```
root@centosb:~# docker run -d -p 9898:80 --name MyNginx nginx
Unable to find image 'nginx:latest' locally
latest: Pulling from library/nginx
f1f26f570256: Already exists
7f7f30930c6b: Pull complete
2836b727df80: Pull complete
e1eeb0f1c06b: Pull complete
86b2457cc2b0: Pull complete
9862f2ee2e8c: Pull complete
Digest: sha256:2ab30d6ac53580a6db8b657abf0f68d75360ff5cc1670a85acb5bd85ba1b19c0
Status: Downloaded newer image for nginx:latest
9b724f6ada1e8882b2ae1c55aa80e064fcd2776f5fbf8b9b293b5a3d83a9f7f9
root@centosb ~]# docker exec -it MyNginx bash
root@9b724f6ada1e:/# echo 'Amir Khattab' > /usr/share/nginx/html/index.html
root@9b724f6ada1e:/#
exit
[root@centosb ~]# curl http://localhost:9898
Amir Khattab
[root@centosb ~]#
```

## Problem 5

```
root@centosb:~# docker volume create mysql_data
mysql_data
[root@centosb ~]# docker run -d --name app-database -e MYSQL_ROOT_PASSWORD=p4sSw0rd0! -v /var/lib/docker/volumes/mysql_data:/var/lib/mysql mysql:latest
Unable to find image 'mysql:latest' locally
latest: Pulling from library/mysql
d98f79840351: Pull complete
eb1ebcf71068: Pull complete
1ae5de5bc10f: Pull complete
e7be806b0533: Pull complete
efe4db00091d: Pull complete
cdc80326f5be: Pull complete
2e8b64cd8427: Pull complete
6175ffbdd824: Pull complete
2321d4015453: Pull complete
74fea5c11a80: Pull complete
dbe213e7bfd3: Pull complete
Digest: sha256:e8dc80474af00e0c49d55742815da52073f466059648738e648c9dd262ff51db
Status: Downloaded newer image for mysql:latest
4ddf98edb758de89aab201e6bbd47c6aa50dfd2915bda28883d2377cab40059a
[root@centosb ~]# docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS
NAMES
9b724f6ada1e   nginx     "/docker-entrypoint. ..." 3 hours ago   Up 3 hours   0.0.0.0:9898->80/tcp, :::9898->80/tcp
MyNginx
[root@centosb ~]#
```