

Lab1

Problem 1

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~$ docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
e6590344b1a5: Pull complete
Digest: sha256:424f1f86cdf501deb591ace8d14d2f40272617b51b374915a87a2886b2025ece
Status: Downloaded newer image for hello-world:latest
```

Hello from Docker!
This message shows that your installation appears to be working correctly.

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~$ docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS
cb7b8020cf85	hello-world	"/hello"	22 seconds ago	Exited (0) 20 seconds ago	

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~$ docker start cb7b8020cf85
cb7b8020cf85
abdo@abdo-Lenovo-ideapad-520-15IKB:~$ docker rm cb7b8020cf85
cb7b8020cf85
abdo@abdo-Lenovo-ideapad-520-15IKB:~$ docker rmi hello-world
Untagged: hello-world:latest
Untagged: hello-world@sha256:424f1f86cdf501deb591ace8d14d2f40272617b51b374915a87a2886b2025ece
Deleted: sha256:74cc54e27dc41bb10dc4b2226072d469509f2f22f1a3ce74f4a59661a1d44602
Deleted: sha256:63a41026379f4391a306242eb0b9f26dc3550d863b7fdbb97d899f6eb89efe72
abdo@abdo-Lenovo-ideapad-520-15IKB:~$
```

Problem 2

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~$ docker rmi hello-world
Untagged: hello-world:latest
Untagged: hello-world@sha256:424f1f86cdf501deb591ace8d14d2f40272617b51b374915a87a2886b2025ece
Deleted: sha256:74cc54e27dc41bb10dc4b2226072d469509f2f22f1a3ce74f4a59661a1d44602
Deleted: sha256:63a41026379f4391a306242eb0b9f26dc3550d863b7fdbb97d899f6eb89efe72
abdo@abdo-Lenovo-ideapad-520-15IKB:~$ docker run -it --name test-container ubuntu
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
2726e237d1a3: Pull complete
Digest: sha256:1e622c5f073b4f6bfad6632f2616c7f59ef256e96f78bf6a595d1dc4376ac02
Status: Downloaded newer image for ubuntu:latest
root@18464b7eb20b:/# echo docker
docker
root@18464b7eb20b:/# touch hello-docker
root@18464b7eb20b:/# ls
bin  boot  dev  etc  hello-docker  home  lib  lib64  media  mnt  opt  proc  root  run  sbin  srv  sys  tmp  usr  var
root@18464b7eb20b:/# exit
exit
```

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~$ docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS
p5c536060881  nginx:1.16.0-alpine  "nginx -g 'daemon of..."  11 months ago  Up 11 hours   0.0.0.0:8181->80/tcp, [
nx-1
```

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~$ docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS
NAMES
18464b7eb20b   ubuntu        "/bin/bash"             2 minutes ago  Exited (0)    About a minute ago
test-container
p5c536060881  nginx:1.16.0-alpine  "nginx -g 'daemon of..."  11 months ago  Up 11 hours   0.0.0.
tcp  propyzui-nginx-1
433bf2ebd208  node:18-alpine    "docker-entrypoint.s..."  11 months ago  Exited (0)    11 months ago
propyzui-node-1
```

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~$ docker stop 18464b7eb20b
18464b7eb20b
abdo@abdo-Lenovo-ideapad-520-15IKB:~$ docker rm 18464b7eb20b
18464b7eb20b
abdo@abdo-Lenovo-ideapad-520-15IKB:~$ docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS
NAMES
p5c536060881  nginx:1.16.0-alpine  "nginx -g 'daemon of..."  11 months ago  Up 11 hours   0.0.0.0:818
propyzui-nginx-1
433bf2ebd208  node:18-alpine    "docker-entrypoint.s..."  11 months ago  Exited (0)    11 months ago
propyzui-node-1
abdo@abdo-Lenovo-ideapad-520-15IKB:~$
```

Problem 3

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI$ mv html/ config/ docker/
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI$ ls
docker  Linux  python
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI$ cd docker/
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker$ ls
config  html
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker$ touch html/index.html config/httpd.conf
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker$ ls
config  html
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker$ ls html/ config/
config/:
httpd.conf

html/:
index.html
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker$
```

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker/html$ docker run -d --name apache -v /home/abdo/NTI/docker/html:/usr/local/apache2/htdocs/ -v /home/abdo/NTI/docker/config:/usr/local/apache2/conf/ httpd
ce84f3bf4100e6723936b9d4253400c3a1978d7adf01dcde22043410a8d8d4c3
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker/html$
```

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker/html$ docker stop ce84f3bf4100
ce84f3bf4100
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker/html$ docker rm ce84f3bf4100
ce84f3bf4100
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker/html$
```

```
64cd2005cd4b3d65c0c0a97c051e4f6b8b6610d5e7716ada9e3564f5b37a3c81
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker$ ls
config  html
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker$ curl http://localhost:9898
<!DOCTYPE html>
<html>
<style>
body, html {
  height: 100%;
  margin: 0;
}

.bgimg {
  background-image: url('/w3images/forestbridge.jpg');
  height: 100%;
  background-position: center;
```

Problem 4

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~/zillirance$ docker run -dit --name apache-p4 httpd
8aaf7002f8e596c63bfbe2ca8eb03341eb5788772a456fd483c5ae8f6dc9c17
abdo@abdo-Lenovo-ideapad-520-15IKB:~/zillirance$ docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
8aaf7002f8e5	httpd	"httpd -foreground"	4 seconds ago	Up 4 seconds	80/tcp	apache-p4

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker/html$ docker cp index.html apache-p4:/usr/local/apache2/htdocs/
Successfully copied 2.56kB to apache-p4:/usr/local/apache2/htdocs/
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker/html$
```

```
Successfully copied 2.56kB to apache-p4:/usr/local/apache2/htdocs/
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker/html$ curl http://localhost:80
<html>
```

```
<body>
```

```
<h1>Good Morning </h1>
```

```
</body>
```

```
</html>
```

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker/html$ docker ps
```

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker/html$ docker commit apache-p4 apache-v1
sha256:a27b2cfb4ef68ffcc658b63f1c681e8858f7083ff6e377d4ab2021e213af4444
```

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker/html$ docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
apache-v1	latest	a27b2cfb4ef6	11 seconds ago	148MB
ubuntu	latest	602ab6fb314b	6 days ago	78.1MB

nginx	1.16.0-alpine	e104b00b089d	3 years ago	20.4MB
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```
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker/html$ cat Dockerfile
```

```
FROM httpd:latest
```

```
COPY index.html /usr/local/apache1/htdocs
```

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker/html$
```

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker/html$ docker build -t apache-abdo:v2 .
[+] Building 0.3s (7/7) FINISHED
```

```
=> [internal] load build definition from Dockerfile
```

```
=> => transferring dockerfile: 99B
```

```
=> [internal] load metadata for docker.io/library/httpd:latest
```

```
=> [internal] load .dockerignore
```

```
=> => transferring context: 2B
```

```
=> [internal] load build context
```

```
=> => transferring context: 982B
```

```
=> [1/2] FROM docker.io/library/httpd:latest
```

```
=> [2/2] COPY index.html /usr/local/apache1/htdocs
```

```
=> exporting to image
```

```
=> => exporting layers
```

```
=> => writing image sha256:a962bed77e2f885cb341d01e3070c148e69059614e6bdd2e9aedce659d2e5
```

```
=> => naming to docker.io/library/apache-abdo:v2
```

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~/NTI/docker/html$ docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
apache-abdo	v2	a962bed77e2f	6 seconds ago	148MB
apache-v1	latest	a27b2cfb4ef6	4 minutes ago	148MB

Problem 5

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~$ docker volume create mysql_data
mysql_data
abdo@abdo-Lenovo-ideapad-520-15IKB:~$ docker run -d \
  --name app-database \
  -e MYSQL_ROOT_PASSWORD='P4sSw0rd0!' \
  -v mysql_data:/var/lib/mysql \
  mysql:latest
Unable to find image 'mysql:latest' locally
latest: Pulling from library/mysql
cea172a6e83b: Pull complete
fa811e9a869e: Pull complete
47a2982daa21: Pull complete
634d7076afe3: Pull complete
aa8a3958f09f: Pull complete
84e4e5ea3754: Pull complete
2275c0ff11a0: Pull complete
2792ea2d4e0e: Pull complete
f488b2cd8494: Pull complete
9451290759df: Pull complete
Digest: sha256:7839322bd6c3174a699586c3ea36314c59b61b4ce01b4146951818b94aef5fd7
Status: Downloaded newer image for mysql:latest
549e8415e4114761369ca1029479fa2a7aa5e589ef9eed74f1ff7d9825ea6ddb
abdo@abdo-Lenovo-ideapad-520-15IKB:~$ docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
549e8415e411	mysql:latest	"docker-entrypoint.s..."	4 minutes ago	Up 4 minutes	3306/tcp, 33060/tcp	app-database