

Name: Reem Ahmed Mansour

Lab:1

Problem 1

- Run the container hello-world

```
Command Prompt
C:\Users\hi55>docker run --name=hello hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
2db29710123e: Pull complete
Digest: sha256:ffb13da98453e0f04d33a6eee5bb8e46ee50d08ebe17735fc0779d0349e889e9
Status: Downloaded newer image for hello-world:latest

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

Share images, automate workflows, and more with a free Docker ID:
https://hub.docker.com/

For more examples and ideas, visit:
https://docs.docker.com/get-started/

C:\Users\hi55>
```

- Check the container status

```
C:\Users\hi55>docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
555bc6fcab79	hello-world	"/hello"	About a minute ago	Exited (0) About a minute ago		hello
edcbab57148e	docker/getting-started	"/docker-entrypoint..."	17 minutes ago	Up 17 minutes	0.0.0.0:80->80/tcp	great_keldysh

- Start the stopped container

```
C:\Users\hi55>docker start hello
hello
```

- Remove the container

```
C:\Users\hi55>docker rm hello
hello

C:\Users\hi55>docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
edcbab57148e	docker/getting-started	"/docker-entrypoint..."	22 minutes ago	Up 22 minutes	0.0.0.0:80->80/tcp	great_keldysh

- Remove the image

```
C:\Users\hi55>docker rmi hello-world
Untagged: hello-world:latest
Untagged: hello-world@sha256:ffb13da98453e0f04d33a6eee5bb8e46ee50d08ebe17735fc0779d0349e889e9
Deleted: sha256:feb5d9fea6a5e9606aa995e879d862b825965ba48de054caab5ef356dc6b3412
Deleted: sha256:e07ee1baac5fae6a26f30cabfe54a36d3402f96afda318fe0a96cec4ca393359

C:\Users\hi55>docker image ls
REPOSITORY          TAG             IMAGE ID        CREATED         SIZE
docker/getting-started latest          3e4394f6b72f   3 months ago   47MB
```

Problem 2

- Run container centos or ubuntu in an interactive mode

```
C:\Users\hi55>docker run -it --name=centos centos
Unable to find image 'centos:latest' locally
latest: Pulling from library/centos
a1d0c7532777: Pull complete
Digest: sha256:a27fd8080b517143cbbbab9dfb7c8571c40d67d534bbdee55bd6c473f432b177
Status: Downloaded newer image for centos:latest
[root@a1be7a758229 /]# docker ps -a
```

- Run the following command in the container “echo docker ”

```
[root@a1be7a758229 /]# echo docker
docker
```

- Open a bash shell in the container and touch a file named hello-docker

```
[root@a1be7a758229 /]# touch hello-docker
[root@a1be7a758229 /]# ls
bin dev etc hello-docker home lib lib64 lost+found media mnt opt proc root run sbin srv sys tmp usr var
[root@a1be7a758229 /]#
```

- Stop the container and remove it. Write your comment about the file hello-docker

```
C:\Users\hi55>docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                               NAMES
a1be7a758229   centos        "/bin/bash"             10 minutes ago Up 2 minutes   0.0.0.0:80->80/tcp                 centos
edcbab57148e   docker/getting-started "/docker-entrypoint..." 50 minutes ago Up 50 minutes   0.0.0.0:80->80/tcp                 great_keldysh

C:\Users\hi55>docker stop centos
centos

C:\Users\hi55>docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                               NAMES
a1be7a758229   centos        "/bin/bash"             11 minutes ago Exited (0) 2 seconds ago         0.0.0.0:80->80/tcp                 centos
edcbab57148e   docker/getting-started "/docker-entrypoint..." 51 minutes ago Up 50 minutes   0.0.0.0:80->80/tcp                 great_keldysh

C:\Users\hi55>docker rm centos
centos

C:\Users\hi55>docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                               NAMES
edcbab57148e   docker/getting-started "/docker-entrypoint..." 51 minutes ago Up 51 minutes   0.0.0.0:80->80/tcp                 great_keldysh
```

The file will be deleted

- Remove all stopped containers

```
C:\Users\hi55>docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                    NAMES
a359a64806a4   mysql         "docker-entrypoint.s..." 8 hours ago    Exited (255)  9 minutes ago          3306/tcp, 33060/tcp    app-database
822921a5d8b7   httpd        "httpd-foreground"       9 hours ago    Exited (255)  9 minutes ago          80/tcp                apache3
957b514665d3   httpd        "httpd-foreground"       9 hours ago    Exited (255)  9 minutes ago          0.0.0.0:9898->80/tcp   apache2
edcbab57148e   docker/getting-started "/docker-entrypoint..." 13 hours ago    Up 6 seconds   0.0.0.0:80->80/tcp      great_keldysh

C:\Users\hi55>docker container prune -f
Deleted Containers:
a359a64806a451c4b613e3a4f5b1f1e846d221d622b2807252fe286a107efa69
822921a5d8b73bda1271567a30ed42933c113d3e0b642afd210cea86554517e0
957b514665d304d249e9710334c7b9563373ae29988bb26652c8f97196877b9a

Total reclaimed space: 54.71MB

C:\Users\hi55>docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                    NAMES
edcbab57148e   docker/getting-started "/docker-entrypoint..." 13 hours ago    Up 2 minutes   0.0.0.0:80->80/tcp      great_keldysh
```

Problem 3

- Run a container httpd with name apache and attach a volume to the container .

Volume for containing static html file.

```
C:\Users\hi55\Documents>docker run -d -p 80:80 --name apache -v C:\Users\hi55\Documents\html:/usr/local/apache2/htdocs httpd
8699d373823260297c86b760d1dd3840e49d971b17b2dcc2b1bdf935f19f47e2

C:\Users\hi55\Documents>curl http://localhost
<!DOCTYPE html>
<html>
<head>
<title>My Static HTML Page</title>
</head>
<body>
<h1>Hello, Reem!</h1>
<p>This is my static HTML page.</p>
</body>
</html>
C:\Users\hi55\Documents>
```

- Remove the container

```
C:\Users\hi55\Documents>docker run -d -p 80:80 --name apache -v C:\Users\hi55\Documents\html:/usr/local/apache2/htdocs httpd
8699d373823260297c86b760d1dd3840e49d971b17b2dcc2b1bdf935f19f47e2

C:\Users\hi55\Documents>curl http://localhost
<!DOCTYPE html>
<html>
<head>
<title>My Static HTML Page</title>
</head>
<body>
<h1>Hello, Reem!</h1>
<p>This is my static HTML page.</p>
</body>
</html>
C:\Users\hi55\Documents>docker stop apache
apache
C:\Users\hi55\Documents>docker rm apache
apache
C:\Users\hi55\Documents>
```

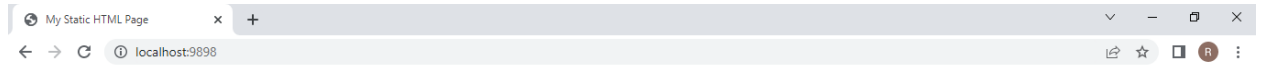
- Run a new container with the following: • Attach the volume that was attached to the previous container.

Map port 80 to port 9898 on you host machine your browser.

```
C:\Users\hi55\Documents>docker run -d -p 9898:80 --name apache2 -v C:\Users\hi55\Documents\html:/usr/local/apache2/htdocs httpd
957b514665d304d249e9710334c7b9563373ae29988bb26652c8f97196877b9a
```

Activate
Go to Settings

- Access the html files from



Hello, Reem!

This is my static HTML page.

Activate Windows
Go to Settings to activate Windows.

Problem 4

- Run the image httpd again without attaching any volumes

```
C:\Users\hi55>docker run -d --name=apache3 httpd
822921a5d8b73bda1271567a30ed42933c113d3e0b642afd210cea86554517e0
```

- Add html static files to the container and make sure they are accessible

```
root@822921a5d8b7:/usr/local/apache2/htdocs# curl http://localhost
<html><body><h1>Hello Reem !</h1></body></html>
root@822921a5d8b7:/usr/local/apache2/htdocs#
```

- Commit the container with image name my apache

```
C:\Users\hi55>docker commit apache3 my-apacheash
sha256:5440b13ef23f2666370ab99d252c78e554ef1dacb9fbd75b90873947d56844f8
```

Problem 5

- Create a volume called `mysql_data`, then deploy a MySQL database called `app-database`. Use the `mysql` latest image, and use the `-e` flag to set `MYSQL_ROOT_PASSWORD` to `P4sSw0rd0!.M`ount the `mysql_data` volume to `/var/lib/mysql`. The container should run in the background

```
C:\Users\hi55>docker run -d --name app-database -e MYSQL_ROOT_PASSWORD=P4sSw0rd0!.M -v 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
568fc4d5c6aa8604471adba12b72d8f74ab6e57347ce3248b026c66dc25b5e

C:\Users\hi55>docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                    NAMES
568fc4d5c6aa   mysql:latest   "docker-entrypoint.s..." About a minute Up About a minute      3306/tcp, 33060/tcp     app-database
edcbab57148e   docker/getting-started "/docker-entrypoint...." 3 hours ago    Up 3 hours    0.0.0.0:80->80/tcp      great_keldysh

C:\Users\hi55> docker volume ls
DRIVER    VOLUME NAME
local     157568c3486bb714ec1b8c0ae68388133188144f25b5c1a740206f5e1fef29a1
local     6707512b42bc2f7daf5b806f827ade0110e1387bd8da723468fd1149fde61403
local     mysql_data

C:\Users\hi55>
```