Docker & Docker Hub

Task 1:

1. docker –version

This command is used to get the currently installed version of docker.

```
prana@MSI MINGW64 ~
$ docker --version
Docker version 20.10.17, build 100c701
```

2. docker pull

Usage: docker pull <image name>

This command is used to pull images from the docker repository(hub.docker.com)

```
prana@MSI MINGW64 ~
$ docker pull python
Using default tag: latest
latest: Pulling from library/python
f606d8928ed3: Pull complete
47db815c6a45: Pull complete
bf4849400000: Pull complete
a572f7a256d3: Pull complete
8f7d05258955: Pull complete
7110f04115ae: Pull complete
c4b413c6a489: Pull complete
22311b72a3cb: Pull complete
8dcbfe38b6fa: Pull complete
Digest: sha256:fe068d8c06a719e26a1388c9d5c7c67d94923b0654ba89b0b7b5e518609e3304
Status: Downloaded newer image for python:latest
docker.io/library/python:latest
```

3. docker run

Usage: docker run -it -d <image name>

This command is used to create a container from an image

```
prana@MSI MINGW64 ~
$ docker run -it -d python
c35eeda0ffa6708c5853200abd8bb7633e6225fc52007836b19d1a7cb2641ced
```

4. docker ps

This command is used to list the running containers

```
prana@MSI MINGW64 ~
$ docker ps
CONTAINER ID   IMAGE     COMMAND     CREATED              STATUS              PORTS     NAMES
c35eeda0ffa6   python    "python3"   About a minute ago   Up About a minute             hardcore_sinoussi
```

5. **docker ps -a**

This command is used to show all the running and exited containers

```
prana@MSI MINGW64 ~
$ docker ps -a
CONTAINER ID   IMAGE     COMMAND     CREATED          STATUS          PORTS     NAMES
c35eeda0ffa6   python    "python3"   16 seconds ago   Up 16 seconds             hardcore_sinoussi
```

6. **docker exec**

Usage: docker exec -it <container id> bash

This command is used to access the running container

```
prana@MSI MINGW64 ~
$ docker exec -it hardcore_sinoussi bash
root@c35eeda0ffa6:/#
```

7. **docker stop**

Usage: docker stop <container id>

This command stops a running container

```
prana@MSI MINGW64 ~
$ docker stop hardcore_sinoussi
hardcore_sinoussi

prana@MSI MINGW64 ~
$ docker ps -a
CONTAINER ID   IMAGE     COMMAND     CREATED          STATUS                       PORTS     NAMES
c35eeda0ffa6   python    "python3"   24 minutes ago   Exited (137) 10 seconds ago            hardcore_sinoussi
```

8. **docker kill**

Usage: docker kill <container id>

This command kills the container by stopping its execution immediately. The difference between ‘docker kill’ and ‘docker stop’ is that ‘docker stop’ gives the container time to shutdown gracefully, in situations when it is taking too much time for getting the container to stop, one can opt to kill it.

```
prana@MSI MINGW64 ~
$ docker kill reverent_chatterjee
reverent_chatterjee

prana@MSI MINGW64 ~
$ docker ps -a
CONTAINER ID   IMAGE     COMMAND     CREATED              STATUS                       PORTS     NAMES
7596946b81a7   python    "python3"   About a minute ago   Exited (137) 11 seconds ago            reverent_chatterjee
c35eeda0ffa6   python    "python3"   30 minutes ago       Exited (137) 6 minutes ago             hardcore_sinoussi
```

9. **docker commit**

Usage: docker commit <conatainer id> <username/imagename>

This command creates a new image of an edited container on the local system

```
prana@MSI MINGW64 ~
$ docker commit zen_rubin pranaysawant17/new_h
sha256:7fb9c6db3dfc9ac786833bc3b56298ad367e2ba1862715841875ae9a65fc8815
```

10. **docker login**

This command is used to login to the docker hub repository

```
prana@MSI MINGW64 ~
$ docker login
Authenticating with existing credentials...
Login Succeeded

Logging in with your password grants your terminal complete access to your account.
For better security, log in with a limited-privilege personal access token. Learn more at https://docs.docker.com/go/access-tokens/
```

11. **docker push**

Usage: docker push <username/image name>

This command is used to push an image to the docker hub repository

```
prana@MSI MINGW64 ~
$ docker push pranaysawant17/new_h
Using default tag: latest
The push refers to repository [docker.io/pranaysawant17/new_h]
e07ee1baac5f: Mounted from library/hello-world
latest: digest: sha256:866cb8407f68bd71c4d5bc9b27f2f0b99c1e233aa9d473e223b3740867e144cd size: 525
```

12. **docker images**

This command lists all the locally stored docker images

```
prana@MSI MINGW64 ~
$ docker images
REPOSITORY              TAG       IMAGE ID       CREATED         SIZE
pranaysawant17/new_h    latest    7fb9c6db3dfc   6 minutes ago   13.3kB
python                  latest    da84e66c3a7c   5 days ago      921MB
stap                    latest    fd8d9e906cc7   6 weeks ago     4.21GB
stapp                   latest    e7c716b4e1bd   6 weeks ago     4.22GB
hello-world             latest    feb5d9fea6a5   12 months ago   13.3kB
```

13. **docker rm**

Usage: docker rm <container id>

This command is used to delete a stopped container

```
prana@MSI MINGW64 ~
$ docker rm 82b12cc9cbf5
82b12cc9cbf5

prana@MSI MINGW64 ~
$ docker ps -a
CONTAINER ID   IMAGE         COMMAND     CREATED             STATUS                         PORTS     NAMES
370bac4fba8b   hello-world   "/hello"    18 minutes ago      Exited (0) 18 minutes ago                reLaxed_shannon
7596946b81a7   python        "python3"   42 minutes ago      Exited (137) 41 minutes ago              reverent_chatterjee
c35eeda0ffa6   python        "python3"   About an hour ago   Exited (137) 47 minutes ago              hardcore_sinoussi
```

14. **docker rmi**

Usage: docker rmi <image-id>

This command is used to delete an image from local storage

```
prana@MSI MINGW64 ~
$ docker rmi 7fb9c6db3dfc
Untagged: pranaysawant17/new_h:latest
Untagged: pranaysawant17/new_h@sha256:866cb8407f68bd71c4d5bc9b27f2f0b99c1e233aa9d473e223b3740867e144cd
Deleted: sha256:7fb9c6db3dfc9ac786833bc3b56298ad367e2ba1862715841875ae9a65fc8815
```

15. **docker build**

Usage: docker build <path to docker file>

This command is used to build an image from a specified docker file

```
(env) D:\fastapi>docker build -t hello_world_fastapi .
[+] Building 0.2s (10/10) FINISHED
 => [internal] load build definition from Dockerfile                                                0.0s
 => => transferring dockerfile: 32B                                                                 0.0s
 => [internal] load .dockerignore                                                                   0.0s
 => => transferring context: 2B                                                                     0.0s
 => [internal] load metadata for docker.io/library/python:latest                                    0.0s
 => [internal] load build context                                                                   0.1s
 => => transferring context: 191.16kB                                                               0.1s
 => [1/5] FROM docker.io/library/python:latest                                                      0.0s
 => CACHED [2/5] COPY . /usr/app/                                                                   0.0s
 => CACHED [3/5] RUN pip install --upgrade pip                                                      0.0s
 => CACHED [4/5] WORKDIR /usr/app/                                                                  0.0s
 => CACHED [5/5] RUN pip install -r requirements.txt                                                0.0s
 => exporting to image                                                                              0.0s
 => => exporting layers                                                                             0.0s
 => => writing image sha256:c1aacffae7855aebc4399c6df9cf2405969ad98a4955c3b63c4886286c445b2a        0.0s
 => => naming to docker.io/library/hello_world_fastapi                                              0.0s
```

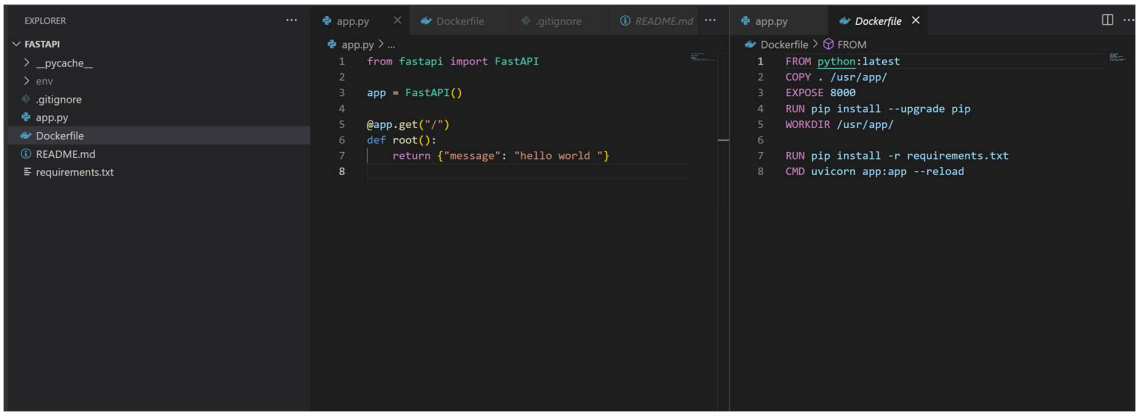
Task 2:

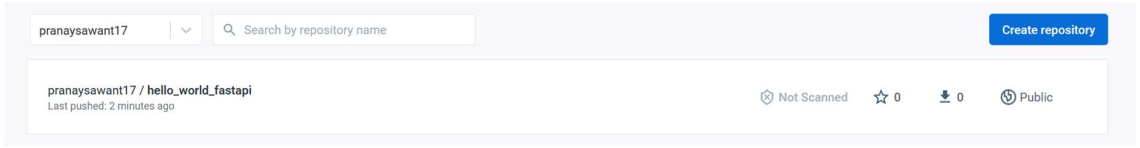
Hello World Docker Image Run Hello World Docker Image Locally.

```
prana@MSI MINGW64 ~
$ docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
2db29710123e: Pull complete
Digest: sha256:62af9efd515a25f84961b70f973a798d2eca956b1b2b026d0a4a63a3b0b6a3f2
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/
```

Task 3:

Create a hello world fastapi application. Create a Dockerfile for your fastapi hello world application. Build Docker image using Docker file. Run docker image build in previous step. Push your Docker image to Docker Hub.

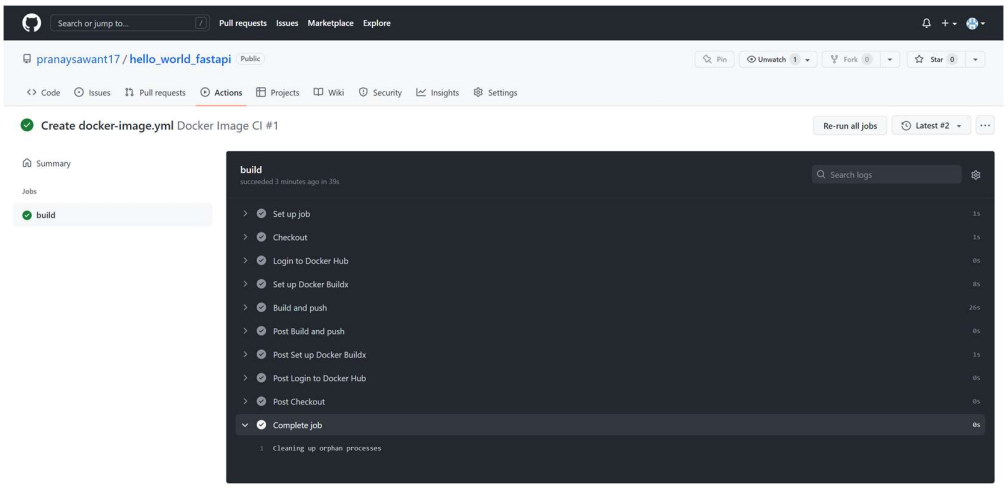




Task 4:

Automate Assignment below task using github action.

1. Build Docker Image
2. Push Docker Image to Docker hub.



pranaysawant17 / **hello_world_fastapi**

Description

This repository does not have a description

Last pushed: 3 minutes ago

Tags and scans

VULNERABILITY SCANNING - **DISABLED**
Enable

This repository contains 1 tag(s).

Tag	OS	Pulled	Pushed
latest		---	3 minutes ago

See all

Go to Advanced Image Management