Unit 1.4 Graded Assignment

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1) Creating Dockerfile:

- First we made a directory ‘Unit 1.4’ for this assignment and created a Dockerfile there.
- Next, we wrote our Dockerfile:

- Here,

  -FROM: specifies what base image we want for the image that we are building. In this case, its Jupyter Minimal Notebook.

  -ENV: sets the environment variables for our image. In this case we’re setting the default ports our jupyter notebook should have, 8889.

  -RUN: specifies what commands are going to run when starting this image in a container. In this case we want pandas to be installed in our image, so we write ‘pip install pandas’

2) Building Dockerfile:

- We build our dockerfile by changing directory to the folder we've created the Dockerfile in, in our case 'Unit 1.4'.

```
saadsameerkhan@all-MS-7D35:~/Documents/Assignments/Unit 1.4$ docker build -t saad-jupyter .
[+] Building 29.7s (6/6) FINISHED
 => [internal] load .dockerignore                                          0.0s
 => => transferring context: 2B                                            0.0s
 => [internal] load build definition from Dockerfile                       0.0s
 => => transferring dockerfile: 122B                                       0.0s
 => [internal] load metadata for docker.io/jupyter/minimal-notebook:lates  0.0s
 => [1/2] FROM docker.io/jupyter/minimal-notebook                          0.1s
 => [2/2] RUN pip install pandas                                          28.9s
 => exporting to image                                                     0.6s
 => => exporting layers                                                    0.6s
 => => writing image sha256:ce6a5c456a4ed0cd872d8e1c0f4c282ed6a09f92b5ed0  0.0s
 => => naming to docker.io/library/saad-jupyter                            0.0s
saadsameerkhan@all-MS-7D35:~/Documents/Assignments/Unit 1.4$ docker images
REPOSITORY                TAG       IMAGE ID       CREATED          SIZE
saad-jupyter              latest    ce6a5c456a4e   7 seconds ago    1.63GB
jupyter/minimal-notebook  latest    660320e123df   7 days ago       1.47GB
ubuntu                    latest    08d22c0ceb15   4 weeks ago      77.8MB
hello-world               latest    feb5d9fea6a5   18 months ago    13.3kB
```

- Here, with '-t' we give a name to our image. 'saad-jupyter' and '.' specifies the location of our dockerfile, which is where our current directory is so '.'

3) Running our image:

```
saadsameerkhan@all-MS-7D35:~/Documents/Assignments/Unit 1.4$ docker run -p8889:8889 saad-jupyter
Entered start.sh with args: jupyter lab --port=8889
Executing the command: jupyter lab --port=8889
[I 2023-04-10 04:34:06.553 ServerApp] Package jupyterlab took 0.0000s to import
[I 2023-04-10 04:34:06.556 ServerApp] Package jupyter_server_fileid took 0.0025s to import
[I 2023-04-10 04:34:06.561 ServerApp] Package jupyter_server_terminals took 0.0052s to import
[I 2023-04-10 04:34:06.585 ServerApp] Package jupyter_server_ydoc took 0.0234s to import
[I 2023-04-10 04:34:06.585 ServerApp] Package nbclassic took 0.0000s to import
[W 2023-04-10 04:34:06.588 ServerApp] A `_jupyter_server_extension_points` function was not found in
his function name will be deprecated in future releases of Jupyter Server.
[I 2023-04-10 04:34:06.588 ServerApp] Package notebook_shim took 0.0000s to import
[W 2023-04-10 04:34:06.588 ServerApp] A `_jupyter_server_extension_points` function was not found in
w. This function name will be deprecated in future releases of Jupyter Server.
[I 2023-04-10 04:34:06.590 ServerApp] jupyter_server_fileid | extension was successfully linked.
[I 2023-04-10 04:34:06.593 ServerApp] jupyter_server_terminals | extension was successfully linked.
[I 2023-04-10 04:34:06.595 ServerApp] jupyter_server_ydoc | extension was successfully linked.
[I 2023-04-10 04:34:06.597 ServerApp] jupyterlab | extension was successfully linked.
```

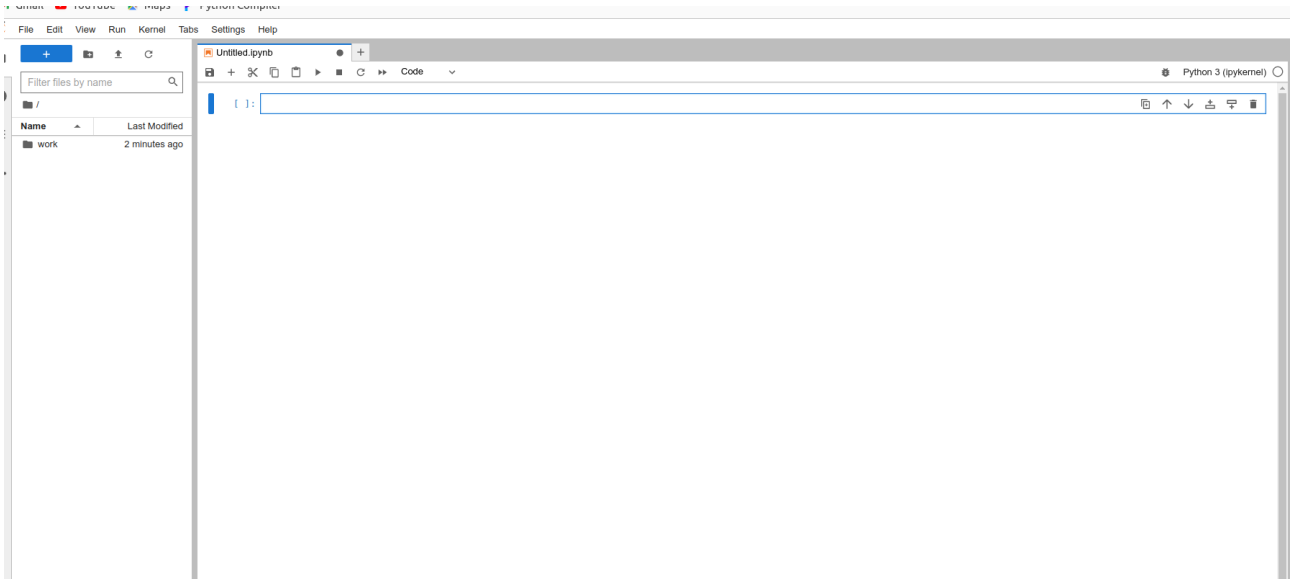
Here, with -p we bind the Host's ports with the container's ports.

4) Running our image:

Now to verify whether our container is running we open the link:

```
To access the server, open this file in a browser:
    file:///home/jovyan/.local/share/jupyter/runtime/jpserver-7-open.html
Or copy and paste one of these URLs:
    http://f5105d00e1f7:8889/lab?token=576ff427d12ebd09854e1a3628358b0b685d6c61d7129417
    http://127.0.0.1:8889/lab?token=576ff427d12ebd09854e1a3628358b0b685d6c61d7129417
```

It works:



Now Run pandas, to see if it was installed: