

Unit 1.4: Graded Assignment 4

Peer Members:

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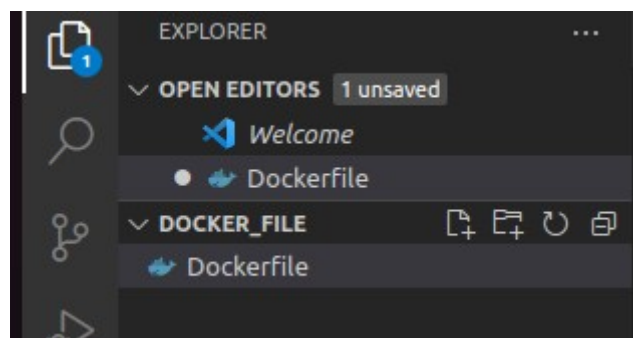
Assignment:

- Build an image based on Jupyter Notebook (jupyter/minimal-notebook) with Pandas installed (pip install pandas)
- Create a container from this image and use the `NOTEBOOK_ARGS=--port=8889` environment variable to change the port Jupyter is exposed on
- Verify you can access it on port 8889 and that Pandas is installed (type `import pandas` in a notebook).

Solution:

Step 1:

Create a "Dockerfile" in VSCODE.



Step 2:

Using FROM select base image, using RUN install dependencies and using ENV is used to set an environment variable named `NOTEBOOK_ARGS` and its value to `--port=8889`.

```
Welcome Dockerfile
Dockerfile
1 FROM jupyter/minimal-notebook
2
3 RUN pip install pandas
4
5 ENV NOTEBOOK_ARGS="--port=8889"
```

Step 3:

Using build command, we build the new image having tag pandas.

```
muhammadrqim@all-MS-7D35:~/Documents/Templates$ docker build -t pandas .
[+] Building 72.9s (6/6) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 122B
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [internal] load metadata for docker.io/jupyter/minimal-notebook:latest
=> [1/2] FROM docker.io/jupyter/minimal-notebook@sha256:87bebc4299577ec11ec0eb0bf27f5e836cc493c1bd40f0523863bf66cfa315d0
=> => resolve docker.io/jupyter/minimal-notebook@sha256:87bebc4299577ec11ec0eb0bf27f5e836cc493c1bd40f0523863bf66cfa315d0
=> => sha256:2ab09b027e7f3a0c2e8bb1944ac46de38cebab7145f0bd6effebfe5492c818b6 29.53MB / 29.53MB
=> => sha256:dbd4f919476a7af68e7014c2adb5ecf5035492d75a5a30d44f2f365e55b7995b 4.90kB / 4.90kB
=> => sha256:660320e123dfcf8e1a80d1c2445de797e2d7fe942c1da630401cf0208c9d6869 14.15kB / 14.15kB
=> => sha256:87bebc4299577ec11ec0eb0bf27f5e836cc493c1bd40f0523863bf66cfa315d0 772B / 772B
=> => sha256:f4e55dc24ebcbba7c6f752de6182a77f5f363a4c54d29ab996802c5a0db2be9e 8.80MB / 8.80MB
```

Step 4:

Using run, we run the image named pandas on given ports.

```
muhammadrqim@all-MS-7D35:~/Docker_file$ docker run -p 8889:8889 pandas
docker: Error response from daemon: driver failed programming external connectivity on en
r 0.0.0.0:8889 failed: port is already allocated.
ERRO[0000] error waiting for container:
muhammadrqim@all-MS-7D35:~/Docker_file$ docker run -p 8889:8889 pandas
Entered start.sh with args: jupyter lab --port=8889
Executing the command: jupyter lab --port=8889
[I 2023-04-07 04:45:26.854 ServerApp] Package jupyterlab took 0.0000s to import
```

Step 5:

Click on generated link and open it in chrome.

```
To access the server, open this file in a browser:
file:///home/jovyan/.local/share/jupyter/runtime/jpserver-7-open.html
Or click on the link below:
Follow link (ctrl + click) :8889/lab?token=fc025d494f5ebfbb773d9fe8eca2d8fa5ca862d5f27e60b
http://127.0.0.1:8889/lab?token=fc025d494f5ebfbb773d9fe8eca2d8fa5ca862d5f27e60bf
[I 2023-04-07 04:45:56.923 LabApp] Generating new user for token-authenticated request: a3
[I 2023-04-07 04:45:59.428 LabApp] Build is up to date
```

Step 6:

Check in Jupyter Notebook whether the library pandas is installed successfully

