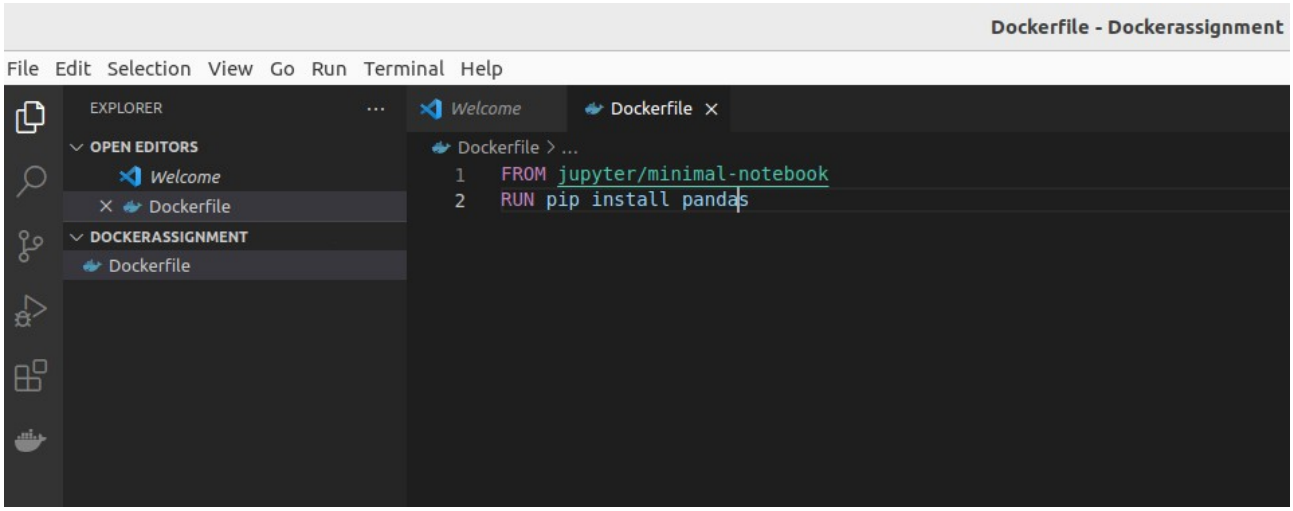
UNIT 1.4 ASSIGNMENT

MUHAMMAD MOIZ KHAN(2303-DEG-022-KHI)

- 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).

1) **Image based on Jupyter Notebook (jupyter/minimal-notebook) with Pandas installed (pip install pandas)**



2) **Container from this image and use of NOTEBOOK_ARGS=--port=8889 as a environment variable to change the port Jupyter is exposed on**

```
muhmmadmoizkhan@all-MS-7D35:~/Desktop/Dockerassignment$ docker run -p 8889:8889 -e NOTEBOOK_ARGS=--port="8889" assets
Entered start.sh with args: jupyter lab --port=8889
Executing the command: jupyter lab --port=8889
```

```
muhmmadmoizkhan@all-MS-7D35:~/Desktop/Dockerassignment$ docker run -p 8889:8889 -e NOTEBOOK_ARGS=--port="8889" assets
Entered start.sh with args: jupyter lab --port=8889
Executing the command: jupyter lab --port=8889
[I 2023-04-10 04:46:56.217 ServerApp] Package jupyterlab took 0.0000s to import
[I 2023-04-10 04:46:56.219 ServerApp] Package jupyter_server_fileid took 0.0016s to import
[I 2023-04-10 04:46:56.222 ServerApp] Package jupyter_server_terminals took 0.0029s to import
[I 2023-04-10 04:46:56.234 ServerApp] Package jupyter_server_ydoc took 0.0115s to import
[I 2023-04-10 04:46:56.234 ServerApp] Package nbclassic took 0.0000s to import
[W 2023-04-10 04:46:56.236 ServerApp] A `_jupyter_server_extension_points` function was not found in nbclassic. Instead, a `_jupyter_server_extension_paths` function was found and will be used for now. T
his function name will be deprecated in future releases of Jupyter Server.
[I 2023-04-10 04:46:56.236 ServerApp] Package notebook_shim took 0.0000s to import
[W 2023-04-10 04:46:56.236 ServerApp] A `_jupyter_server_extension_points` function was not found in notebook_shim. Instead, a `_jupyter_server_extension_paths` function was found and will be used for no
w. This function name will be deprecated in future releases of Jupyter Server.
[I 2023-04-10 04:46:56.240 ServerApp] jupyter_server_fileid | extension was successfully linked.
[I 2023-04-10 04:46:56.242 ServerApp] jupyter_server_terminals | extension was successfully linked.
[I 2023-04-10 04:46:56.245 ServerApp] jupyter_server_ydoc | extension was successfully linked.
[I 2023-04-10 04:46:56.250 ServerApp] jupyterlab | extension was successfully linked.
[W 2023-04-10 04:46:56.252 NotebookApp] 'ip' has moved from NotebookApp to ServerApp. This config will be passed to ServerApp. Be sure to update your config before our next release.
[W 2023-04-10 04:46:56.252 NotebookApp] 'ip' has moved from NotebookApp to ServerApp. This config will be passed to ServerApp. Be sure to update your config before our next release.
[I 2023-04-10 04:46:56.254 ServerApp] nbclassic | extension was successfully linked.
[I 2023-04-10 04:46:56.254 ServerApp] Writing Jupyter server cookie secret to /home/jovyan/.local/share/jupyter/runtime/jupyter_cookie_secret
[I 2023-04-10 04:46:56.371 ServerApp] notebook_shim | extension was successfully linked.
[I 2023-04-10 04:46:56.430 ServerApp] notebook_shim | extension was successfully loaded.
[I 2023-04-10 04:46:56.430 FileIdExtension] Configured File ID manager: ArbitraryFileIdManager
[I 2023-04-10 04:46:56.430 FileIdExtension] ArbitraryFileIdManager : Configured root dir: /home/jovyan
[I 2023-04-10 04:46:56.430 FileIdExtension] ArbitraryFileIdManager : Configured database path: /home/jovyan/.local/share/jupyter/file_id_manager.db
[I 2023-04-10 04:46:56.430 FileIdExtension] ArbitraryFileIdManager : Successfully connected to database file.
[I 2023-04-10 04:46:56.430 FileIdExtension] ArbitraryFileIdManager : Creating File ID tables and indices with journal_mode = DELETE
[I 2023-04-10 04:46:56.438 FileIdExtension] Attached event listeners.
[I 2023-04-10 04:46:56.438 ServerApp] jupyter_server_fileid | extension was successfully loaded.
[I 2023-04-10 04:46:56.439 ServerApp] jupyter_server_terminals | extension was successfully loaded.
[I 2023-04-10 04:46:56.439 ServerApp] jupyter_server_ydoc | extension was successfully loaded.
[I 2023-04-10 04:46:56.440 LabApp] JupyterLab extension loaded from /opt/conda/lib/python3.10/site-packages/jupyterlab
[I 2023-04-10 04:46:56.440 LabApp] JupyterLab application directory is /opt/conda/share/jupyter/lab
[I 2023-04-10 04:46:56.442 ServerApp] jupyterlab | extension was successfully loaded.
[I 2023-04-10 04:46:56.444 ServerApp] nbclassic | extension was successfully loaded.
[I 2023-04-10 04:46:56.445 ServerApp] Serving notebooks from local directory: /home/jovyan
[I 2023-04-10 04:46:56.445 ServerApp] Jupyter Server 2.5.0 is running at:
[I 2023-04-10 04:46:56.445 ServerApp] http://a6875d658089:8889/lab?token=5271862d8c1d190d772148e6dfccf7da53ec0f94f5a6e314
[I 2023-04-10 04:46:56.445 ServerApp]     http://127.0.0.1:8889/lab?token=5271862d8c1d190d772148e6dfccf7da53ec0f94f5a6e314
[I 2023-04-10 04:46:56.445 ServerApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 2023-04-10 04:46:56.448 ServerApp]

    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:
```

3) Verification on port 8889 and that Pandas is installed (type import pandas in a notebook).