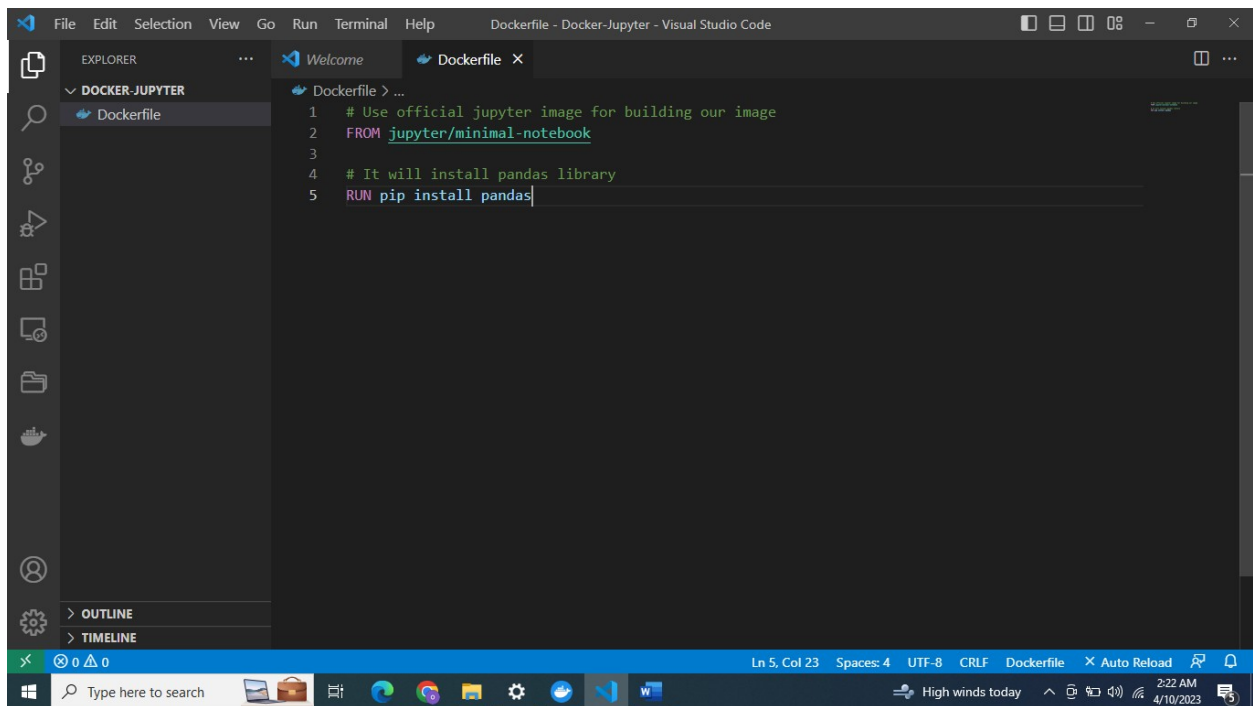


Assignment 1.4

Firstly, I created a Docker file and with in it, I used official jupyter image for building my image and I also install pandas library in it as shown in figure



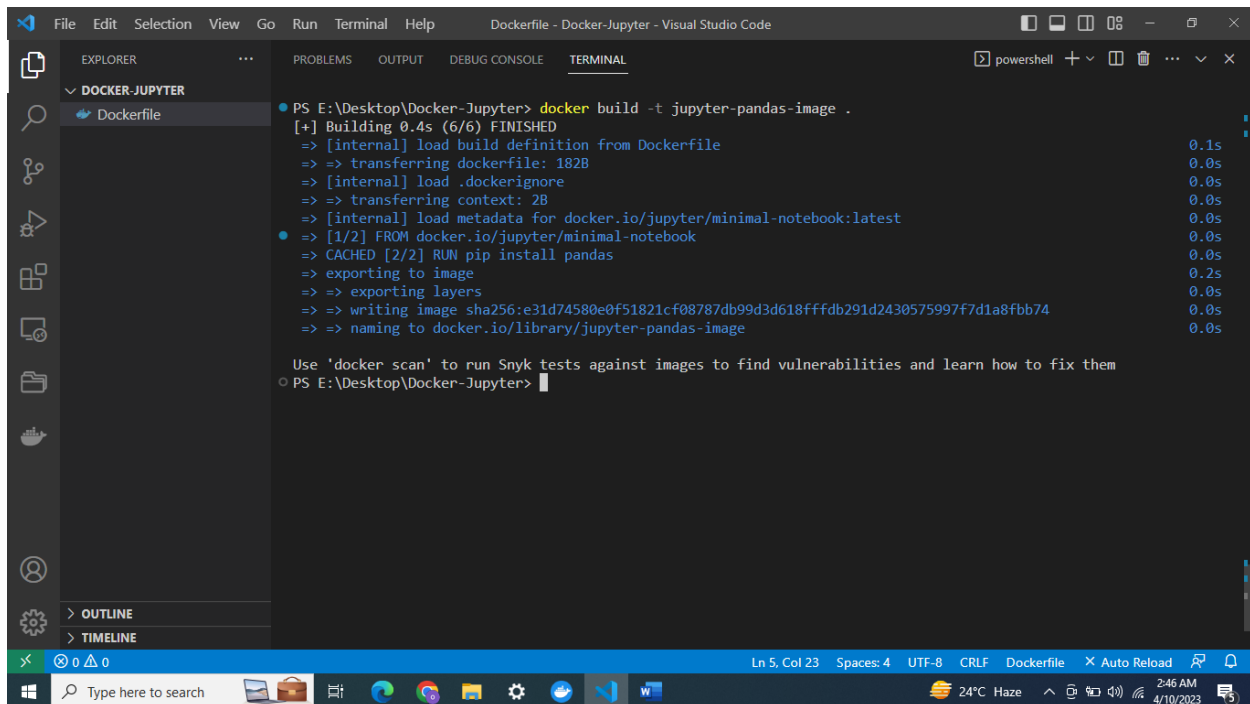
```
1 # Use official jupyter image for building our image
2 FROM jupyter/minimal-notebook
3
4 # It will install pandas library
5 RUN pip install pandas
```

The screenshot shows the Visual Studio Code interface with a Dockerfile open in the editor. The Explorer sidebar on the left shows the file structure with 'DOCKER-JUPYTER' and 'Dockerfile'. The Dockerfile contains five lines of code: a comment, a FROM statement using 'jupyter/minimal-notebook', a blank line, another comment, and a RUN statement to install pandas. The status bar at the bottom indicates the current line and column (Ln 5, Col 23) and shows the file encoding (UTF-8) and line endings (CRLF).

And for build that image locally in my machine, I type the following command

docker build -t jupyter-pandas-image .

In that command, I tagged my image as 'jupyter-pandas-image', which will built in current directory

A screenshot of the Visual Studio Code interface. The 'TERMINAL' pane is active, showing the output of the command 'docker build -t jupyter-pandas-image .' executed in a PowerShell terminal. The output shows the build process starting with 'Building 0.4s (6/6) FINISHED', followed by internal steps like loading build definitions, transferring the Dockerfile, and installing pandas. The final output is 'writing image sha256:e31d74580e0f51821cf08787db99d3d618ffdb291d2430575997f7d1a8fbb74' and 'naming to docker.io/library/jupyter-pandas-image'. The Explorer pane on the left shows the 'DOCKEY-JUPYTER' folder containing a 'Dockerfile'. The status bar at the bottom indicates the current file is 'Dockerfile' and the encoding is 'UTF-8'.

```
PS E:\Desktop\Docker-Jupyter> docker build -t jupyter-pandas-image .
[+] Building 0.4s (6/6) FINISHED
=> [internal] load build definition from Dockerfile                                0.1s
=> => transferring dockerfile: 182B                                              0.0s
=> [internal] load .dockerignore                                                  0.0s
=> => transferring context: 28                                                  0.0s
=> [internal] load metadata for docker.io/jupyter/minimal-notebook:latest        0.0s
=> [1/2] FROM docker.io/jupyter/minimal-notebook                               0.0s
=> CACHED [2/2] RUN pip install pandas                                           0.0s
=> exporting to image                                                            0.2s
=> => exporting layers                                                         0.0s
=> writing image sha256:e31d74580e0f51821cf08787db99d3d618ffdb291d2430575997f7d1a8fbb74 0.0s
=> naming to docker.io/library/jupyter-pandas-image                             0.0s

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them
PS E:\Desktop\Docker-Jupyter>
```

As you see my image is successfully build

And then

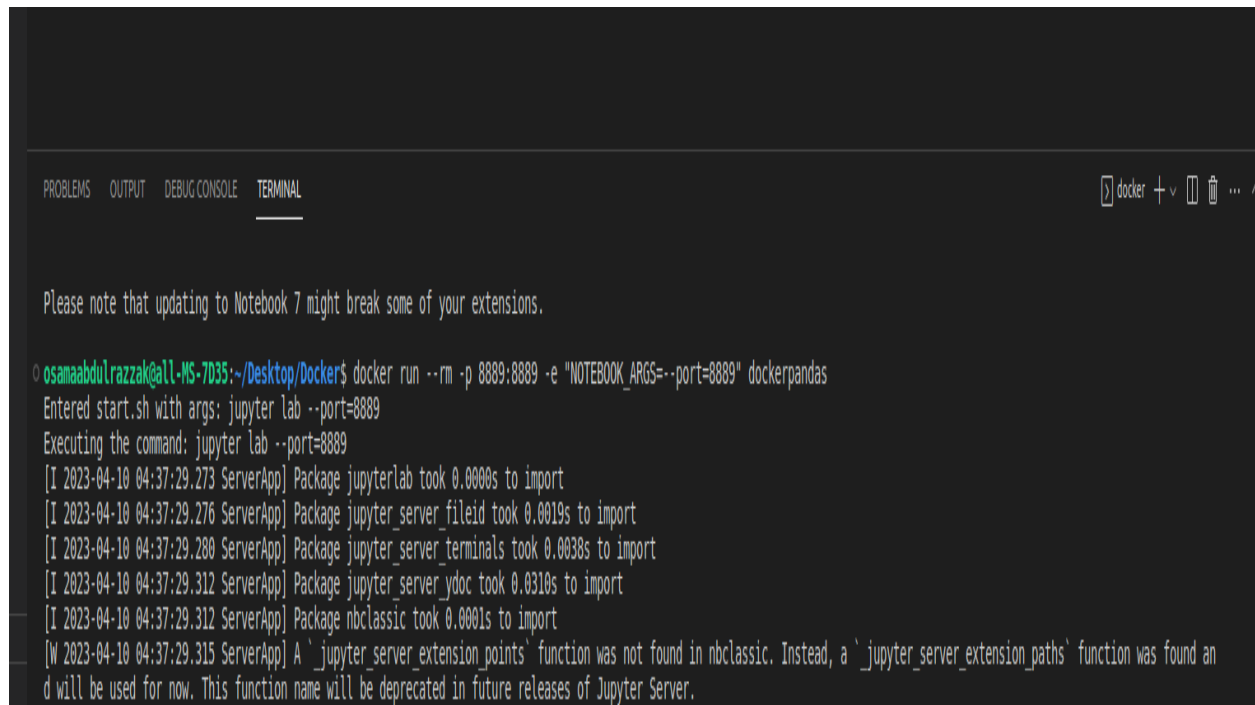
I type the following command

docker run --rm -p 8889:8889 -e "NOTEBOOK_ARGS=--port=8889" jupyter-pandas-image

this will start a container and within it my image 'jupyter-pandas-image' run on the default port of '8889'

and then I navigate to link of jupyter-notebook by clicking the given link in terminal

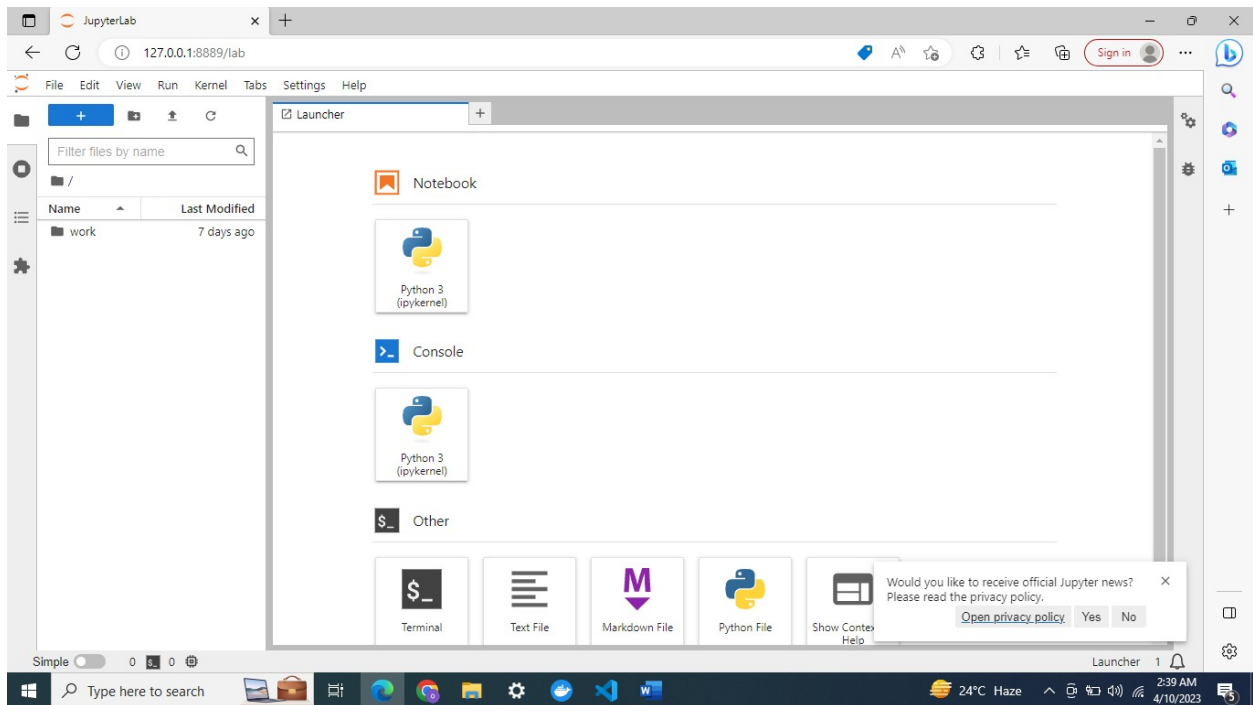
as you see in figure



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Please note that updating to Notebook 7 might break some of your extensions.

osamaabdulrazzak@all-MS-7035:~/Desktop/Docker$ docker run --rm -p 8889:8889 -e "NOTEBOOK_ARGS=--port=8889" dockerspandas
Entered start.sh with args: jupyter lab --port=8889
Executing the command: jupyter lab --port=8889
[I 2023-04-10 04:37:29.273 ServerApp] Package jupyterlab took 0.0000s to import
[I 2023-04-10 04:37:29.276 ServerApp] Package jupyter_server_fileid took 0.0019s to import
[I 2023-04-10 04:37:29.280 ServerApp] Package jupyter_server_terminals took 0.0038s to import
[I 2023-04-10 04:37:29.312 ServerApp] Package jupyter_server_ydoc took 0.0310s to import
[I 2023-04-10 04:37:29.312 ServerApp] Package nbclassic took 0.0001s to import
[W 2023-04-10 04:37:29.315 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. This function name will be deprecated in future releases of Jupyter Server.
```

it will open jupyter notebook at default port '8889'



In the last, I checked pandas library and found it is successfully installed in it

