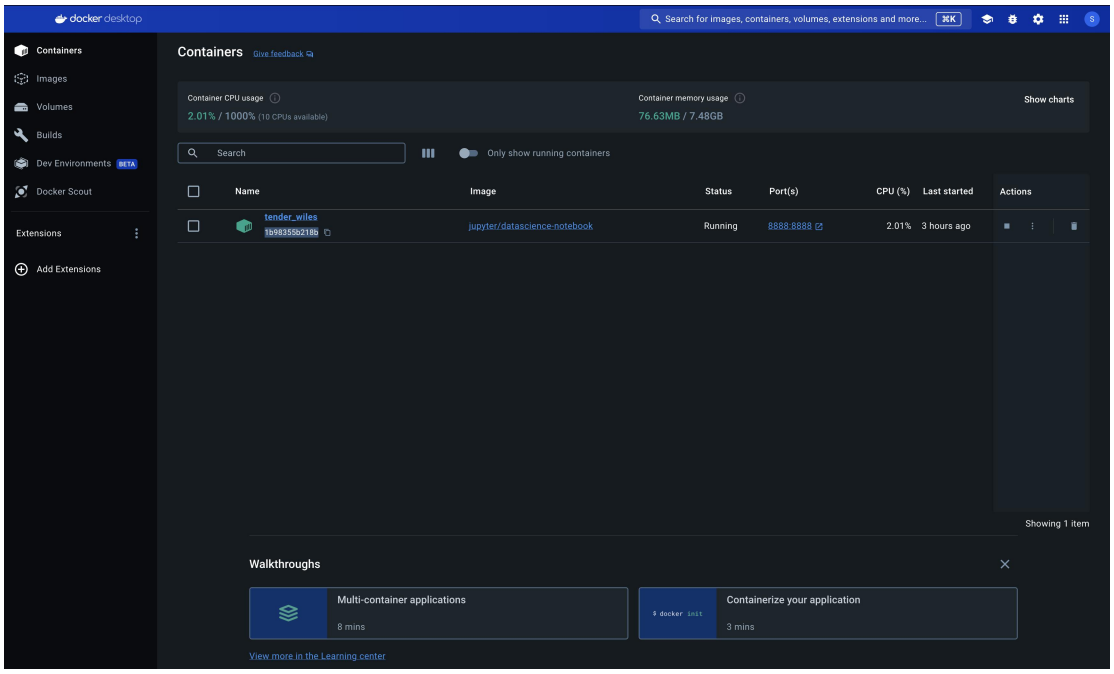
Alexandria University
Faculty of Computer and Data Science
Business Department

Course Title : Cloud Computing
2023-2024

Sherine Khaled Mohamed **ID : 2102100**

1- Install Docker



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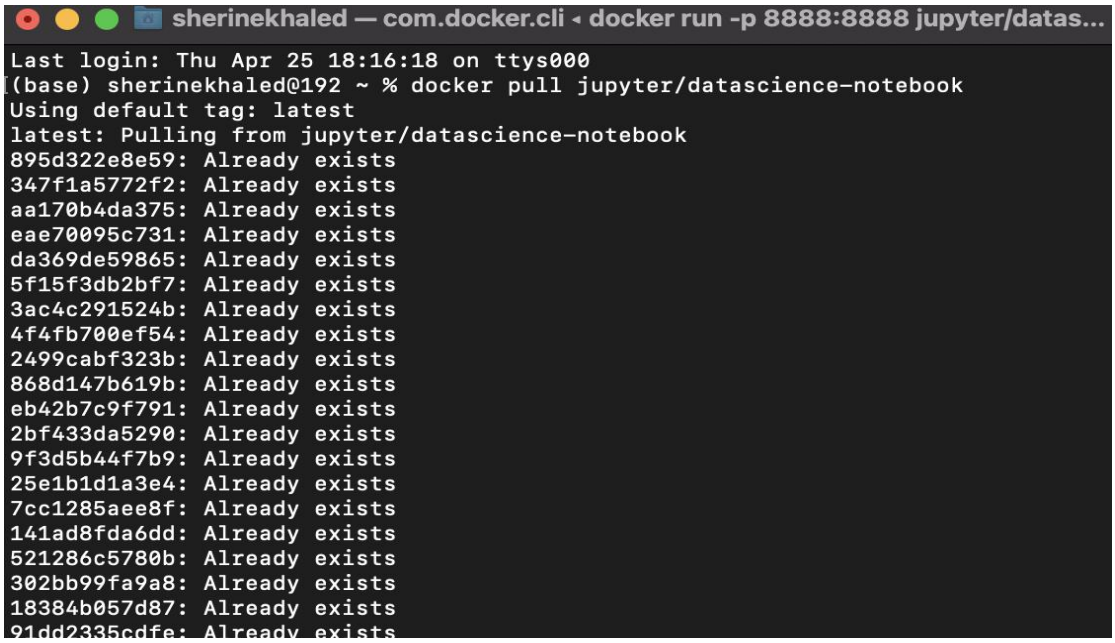

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```
sherinekhaled — com.docker.cli ◂ docker run -p 8888:8888 jupyter/datas...
bash-3.2$ docker run -p 8888:8888 jupyter/datascience-notebook
Entered start.sh with args: jupyter lab
Running hooks in: /usr/local/bin/start-notebook.d as uid: 1000 gid: 100
Done running hooks in: /usr/local/bin/start-notebook.d
Running hooks in: /usr/local/bin/before-notebook.d as uid: 1000 gid: 100
Done running hooks in: /usr/local/bin/before-notebook.d
Executing the command: jupyter lab
[I 2024-04-25 10:40:28.311 ServerApp] Package jupyterlab took 0.0000s to import
[I 2024-04-25 10:40:28.322 ServerApp] Package jupyter_lsp took 0.0112s to import
[W 2024-04-25 10:40:28.322 ServerApp] A `_jupyter_server_extension_points` funct
ion was not found in jupyter_lsp. Instead, a `_jupyter_server_extension_paths` f
unction was found and will be used for now. This function name will be deprecate
d in future releases of Jupyter Server.
[I 2024-04-25 10:40:28.323 ServerApp] Package jupyter_server_mathjax took 0.0010
s to import
[I 2024-04-25 10:40:28.363 ServerApp] Package jupyter_server_proxy took 0.0394s
to import
[I 2024-04-25 10:40:28.368 ServerApp] Package jupyter_server_terminals took 0.00
47s to import
[I 2024-04-25 10:40:28.392 ServerApp] Package jupyterlab_git took 0.0241s to imp
ort
[I 2024-04-25 10:40:28.394 ServerApp] Package nbclassic took 0.0023s to import
[W 2024-04-25 10:40:28.396 ServerApp] A `_jupyter_server_extension_points` funct
ion was not found in nbclassic. Instead, a `_jupyter_server_extension_paths` fun
```

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```
sherinekhaled — com.docker.cli ◂ docker run -p 8888:8888 jupyter/datas...
ome/jovyan
[I 2024-04-25 10:40:28.664 ServerApp] Jupyter Server 2.8.0 is running at:
[I 2024-04-25 10:40:28.664 ServerApp] http://45ceb3702e0d:8888/lab?token=0337fef
3f6f380ac7fc212220fb34928e297e77f00fd10d7
[I 2024-04-25 10:40:28.664 ServerApp]     http://127.0.0.1:8888/lab?token=0337fe
f3f6f380ac7fc212220fb34928e297e77f00fd10d7
[I 2024-04-25 10:40:28.664 ServerApp] Use Control-C to stop this server and shut
 down all kernels (twice to skip confirmation).
[C 2024-04-25 10:40:28.666 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:
        http://45ceb3702e0d:8888/lab?token=0337fef3f6f380ac7fc212220fb34928e297e
77f00fd10d7
        http://127.0.0.1:8888/lab?token=0337fef3f6f380ac7fc212220fb34928e297e77f
00fd10d7
[I 2024-04-25 10:40:29.563 ServerApp] Skipped non-installed server(s): bash-lang
uage-server, dockerfile-language-server-nodejs, javascript-typescript-langserver
, jedi-language-server, julia-language-server, pyright, python-language-server,
python-lsp-server, r-languageserver, sql-language-server, texlab, typescript-lan
guage-server, unified-language-server, vscode-css-languageserver-bin, vscode-htm
l-languageserver-bin, vscode-json-languageserver-bin, yaml-language-server
```

5-

jupyter

Password or token: ••••••••••••••••••••••••••• Log in

Token authentication is enabled

If no password has been configured, you need to open the server with its login token in the URL, or paste it above. This requirement will be lifted if you **enable a password**.

The command:

```
jupyter server list
```

will show you the URLs of running servers with their tokens, which you can copy and paste into your browser. For example:

```
Currently running servers:
http://localhost:8888/?token=c8de56fa... :: /Users/you/notebooks
```

or you can paste just the token value into the password field on this page.

See **the documentation on how to enable a password** in place of token authentication, if you would like to avoid dealing with random tokens.

Cookies are required for authenticated access to the Jupyter server.

Setup a Password

You can also setup a password by entering your token and a new password on the fields below:

Token

New Password

Log in and set new password

6- Apply data cleaning and preprocessing on popular books dataset then apply analysis on Harry Potter series to discover most selling books and average rating (as shown in Harry Potter Analysis.ipynb)

7- Analysis shows that the average rating is 4.497 and the most selling series is Harry Potter and the Sorcerer's Stone

[27]:
```
print(hp)
```

```
                                  authors  original_publication_year  \
1              J.K. Rowling, Mary GrandPré                     1997.0
6   J.K. Rowling, Mary GrandPré, Rufus Beck                     1999.0
8              J.K. Rowling, Mary GrandPré                     2003.0
9              J.K. Rowling, Mary GrandPré                     1998.0
10             J.K. Rowling, Mary GrandPré                     2000.0
11             J.K. Rowling, Mary GrandPré                     2007.0
12             J.K. Rowling, Mary GrandPré                     2005.0

                                           title  average_rating  \
1   Harry Potter and the Sorcerer's Stone (Harry P...            4.44
6   Harry Potter and the Prisoner of Azkaban (Harr...            4.53
8   Harry Potter and the Order of the Phoenix (Har...            4.46
9   Harry Potter and the Chamber of Secrets (Harry...            4.37
10  Harry Potter and the Goblet of Fire (Harry Pot...            4.53
11  Harry Potter and the Deathly Hallows (Harry Po...            4.61
12  Harry Potter and the Half-Blood Prince (Harry ...            4.54

    ratings_count
1         4602479
6         1832823
8         1735368
9         1779331
10        1753043
11        1746574
12        1678823
```

[28]:
```
#calculate average rating of Harry Potter books
hp.loc[:, 'average_rating'].mean()
```

[28]:
```
4.497142857142857
```

[29]:
```
#find most selling books within the Harry Potter series
hp['ratings_count'].max()
```

[29]:
```
4602479
```