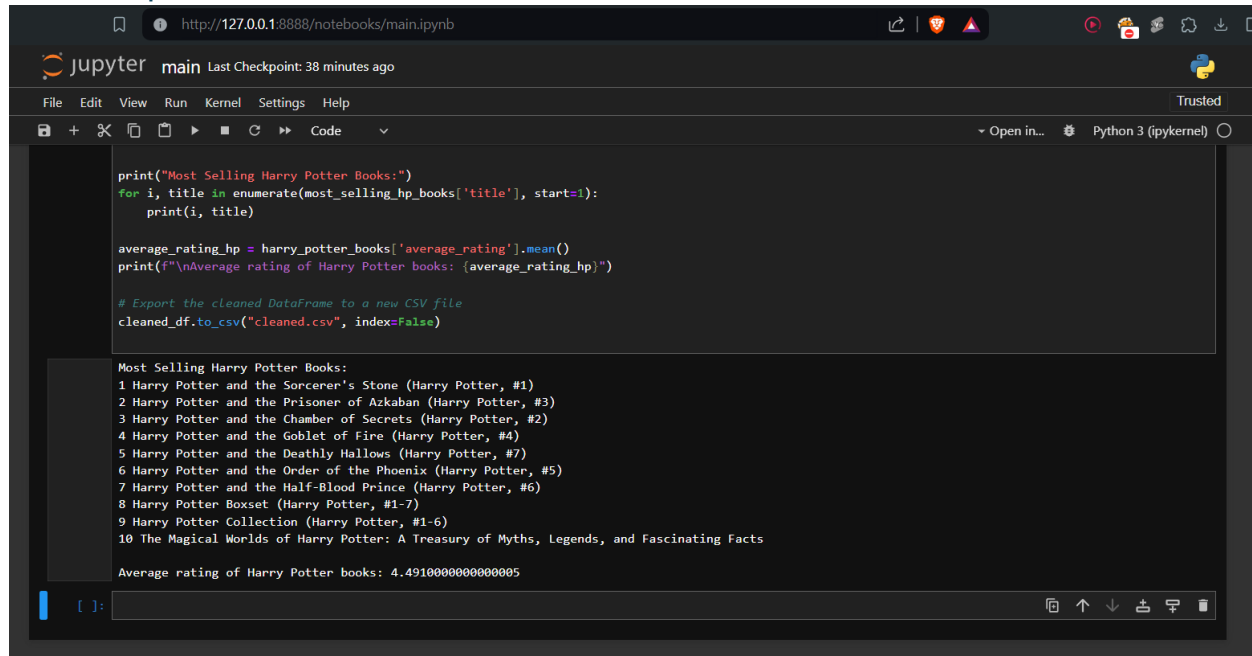


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Code output:



The screenshot shows a Jupyter Notebook interface in a web browser. The browser address bar shows the URL `http://127.0.0.1:8888/notebooks/main.ipynb`. The Jupyter Notebook interface includes a menu bar (File, Edit, View, Run, Kernel, Settings, Help) and a toolbar. The code cell contains the following Python code:

```
print("Most Selling Harry Potter Books:")
for i, title in enumerate(most_selling_hp_books['title'], start=1):
    print(i, title)

average_rating_hp = harry_potter_books['average_rating'].mean()
print(f"\nAverage rating of Harry Potter books: {average_rating_hp}")

# Export the cleaned DataFrame to a new CSV file
cleaned_df.to_csv("cleaned.csv", index=False)
```

The output cell displays the following results:

```
Most Selling Harry Potter Books:
1 Harry Potter and the Sorcerer's Stone (Harry Potter, #1)
2 Harry Potter and the Prisoner of Azkaban (Harry Potter, #3)
3 Harry Potter and the Chamber of Secrets (Harry Potter, #2)
4 Harry Potter and the Goblet of Fire (Harry Potter, #4)
5 Harry Potter and the Deathly Hallows (Harry Potter, #7)
6 Harry Potter and the Order of the Phoenix (Harry Potter, #5)
7 Harry Potter and the Half-Blood Prince (Harry Potter, #6)
8 Harry Potter Boxset (Harry Potter, #1-7)
9 Harry Potter Collection (Harry Potter, #1-6)
10 The Magical Worlds of Harry Potter: A Treasury of Myths, Legends, and Fascinating Facts

Average rating of Harry Potter books: 4.4910000000000005
```

Most Selling Harry Potter Books:

- 1 Harry Potter and the Sorcerer's Stone (Harry Potter, #1)
- 2 Harry Potter and the Prisoner of Azkaban (Harry Potter, #3)
- 3 Harry Potter and the Chamber of Secrets (Harry Potter, #2)
- 4 Harry Potter and the Goblet of Fire (Harry Potter, #4)
- 5 Harry Potter and the Deathly Hallows (Harry Potter, #7)
- 6 Harry Potter and the Order of the Phoenix (Harry Potter, #5)
- 7 Harry Potter and the Half-Blood Prince (Harry Potter, #6)
- 8 Harry Potter Boxset (Harry Potter, #1-7)
- 9 Harry Potter Collection (Harry Potter, #1-6)
- 10 The Magical Worlds of Harry Potter: A Treasury of Myths, Legends, and Fascinating Facts

Average rating of Harry Potter books: 4.4910000000000005

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Docker build:

```
(base) PS D:\Codes\Cloud-Ass> docker build -t data_clean_jupyter .
[+] Building 2.3s (9/9) FINISHED                                docker:default
=> [internal] load build definition from Dockerfile            0.0s
=> => transferring dockerfile: 226B                             0.0s
=> [internal] load metadata for docker.io/jupyter/datascience-notebook:latest 0.0s
=> [internal] load .dockerignore                               0.0s
=> => transferring context: 2B                                    0.0s
=> [1/4] FROM docker.io/jupyter/datascience-notebook:latest 0.0s
=> [internal] load build context                               0.0s
=> => transferring context: 773B                                  0.0s
=> CACHED [2/4] WORKDIR /app                                   0.0s
=> [3/4] COPY . /app                                           0.0s
=> [4/4] RUN pip install -r req.txt                             2.2s
=> exporting to image                                           0.0s
=> => exporting layers                                           0.0s
=> => writing image sha256:7098c2d5694f0a37749a7df61eb2e2f1ec2516cb1cede7e8928746ecb02b91c2 0.0s
=> => naming to docker.io/library/data_clean_jupyter           0.0s

View build details: docker-desktop://dashboard/build/default/default/xmv0rh45rn4ck2y6jo7hcy0yb

What's Next?
  View a summary of image vulnerabilities and recommendations → docker scout quickview
```

Docker run:

```
(base) PS D:\Codes\Cloud-Ass> docker run -p 8888:8888 data_clean_jupyter
[I 2024-04-24 15:13:01.081 ServerApp] Package notebook took 0.0000s to import
[I 2024-04-24 15:13:01.099 ServerApp] Package jupyter_lsp took 0.0180s to import
[W 2024-04-24 15:13:01.099 ServerApp] A `_jupyter_server_extension_points` function was not found in jupyter_lsp. 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.
[I 2024-04-24 15:13:01.101 ServerApp] Package jupyter_server_mathjax took 0.0012s to import
[I 2024-04-24 15:13:01.165 ServerApp] Package jupyter_server_proxy took 0.0637s to import
[I 2024-04-24 15:13:01.171 ServerApp] Package jupyter_server_terminals took 0.0063s to import
[I 2024-04-24 15:13:01.171 ServerApp] Package jupyterlab took 0.0000s to import
[I 2024-04-24 15:13:01.681 ServerApp] Package jupyterlab_git took 0.0334s to import
[I 2024-04-24 15:13:01.684 ServerApp] Package nbclassic took 0.0030s to import
[W 2024-04-24 15:13:01.687 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.
[I 2024-04-24 15:13:01.688 ServerApp] Package nbdtm took 0.0000s to import
```