

Homework-1: Systems Setup and GitHub Skills

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Part – I

1. Anaconda Python 3.x

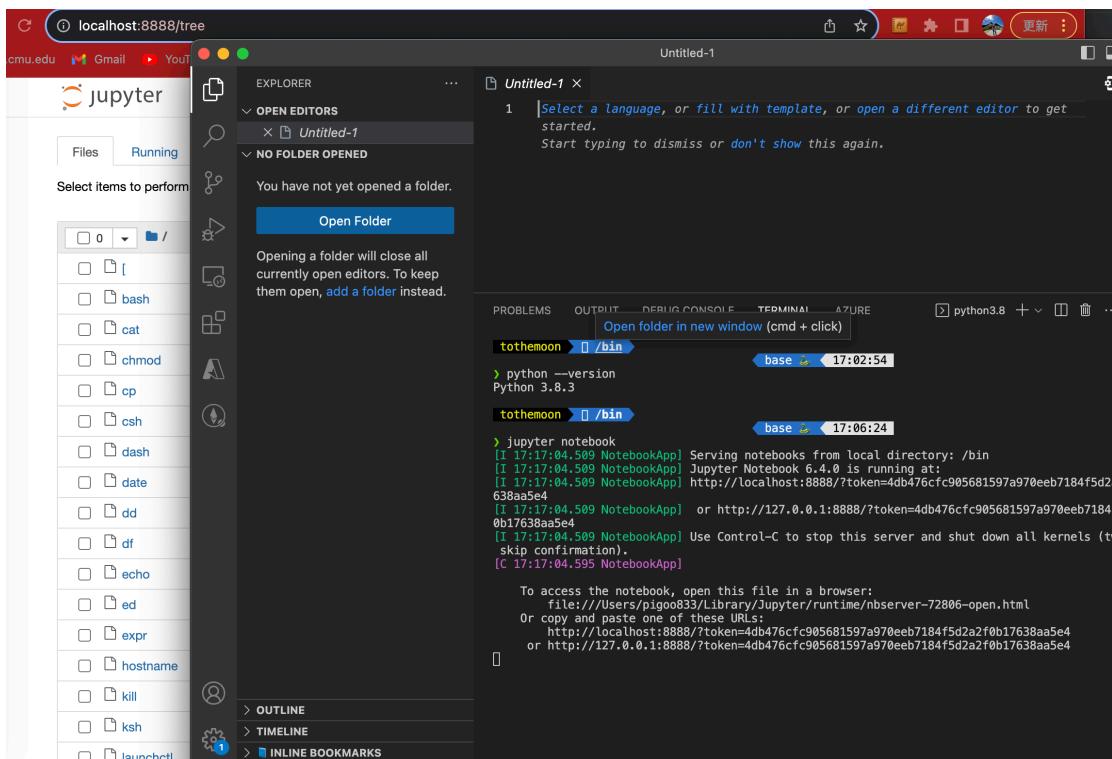
A screenshot of a terminal window titled "zsh". It shows two sessions: "base" and another "base" session. The first "base" session has a timestamp of 17:02:54 and displays the command "python --version" followed by "Python 3.8.3". The second "base" session has a timestamp of 17:06:24. The terminal interface includes tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, and AZURE.

```
tothemoon ▶ /bin
> python --version
Python 3.8.3

tothemoon ▶ /bin
>
```

```
base 2 17:02:54
base 2 17:06:24
```

2. Jupyter



3. PostgreSQL DB

A screenshot of a terminal window titled "psql". It shows a session starting with "psql (14.9 (Homebrew))" and prompting for help. The terminal interface includes tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, and AZURE.

```
tothemoon ▶ /bin
> psql
psql (14.9 (Homebrew))
Type "help" for help.

pigoo833=#
```

```
base 2 20:11:56
```

4. Pgadmin4

The screenshot shows the pgAdmin 4 interface. On the left, the Object Explorer pane displays a tree view of servers and databases, including 'Servers (1)', 'Test Connection', 'Databases (3)' (with 'pigoo833' expanded), and various database objects like Casts, Catalogs, Event Triggers, etc. On the right, a 'Test Connection' dialog is open with the 'Connection' tab selected. It contains fields for Host name/address (localhost), Port (5432), Maintenance database (postgres), Username (pigoo833), Kerberos authentication? (disabled), Role (empty), and Service (empty). Below the dialog is a table titled 'Active sessions only' showing three sessions with IDs 11140, 11141, and 11142, all connected to the 'postgres' database.

5. Apache Spark

The screenshot shows a Jupyter Notebook interface. The browser address bar indicates the notebook is running at `localhost:8888/notebooks/test_spark.ipynb`. The notebook cell area contains the following code:

```
In [1]: # Uncomment the next two lines if you're using Python 3
# import findspark
# findspark.init()
# findspark.find()

import pyspark
```

In [2]:

```
from pyspark.sql import SparkSession
```

In [3]:

```
spark = SparkSession.builder.getOrCreate()
```

In [4]:

```
print(spark)
```

The terminal output shows the notebook server starting and serving the notebook. It also shows log messages related to the NativeCodeLoader and the spark version:

```
tothemoon ~/De/2/Systems and Tool Chains for AI Engineers/HW1 4m 1s base 20:46:35
jupyter notebook test_spark.ipynb
[20:47:14.704 NotebookApp] Serving notebooks from local directory: /Users/pigoo833/Desktop/2023 CMU Fall Courses/Systems and Tool Chains for AI Engineers/HW1
[20:47:14.704 NotebookApp] Jupyter Notebook 6.4.0 is running at:
[20:47:14.704 NotebookApp] http://localhost:8888/?token=f4ae54c2f90fe14e541c2bb6fdb87d9c1cd5447117bf8948
or http://127.0.0.1:8888/?token=f4ae54c2f90fe14e541c2bb6fdb87d9c1cd5447117bf8948
[20:47:14.704 NotebookApp] or http://127.0.0.1:8888/?token=f4ae54c2f90fe14e541c2bb6fdb87d9c1cd5447117bf8948
8948
[20:47:14.704 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[20:47:14.726 NotebookApp]
```

To access the notebook, open this file in a browser:
file:///Users/pigoo833/Library/Jupyter/runtime/nbserver=20475-open.html
Or copy and paste one of these URLs:
http://localhost:8888/?token=f4ae54c2f90fe14e541c2bb6fdb87d9c1cd5447117bf8948
or http://127.0.0.1:8888/?token=f4ae54c2f90fe14e541c2bb6fdb87d9c1cd5447117bf8948

[20:47:18.349 NotebookApp] Notebook test_spark.ipynb is not trusted
[20:47:18.482 NotebookApp] Kernel started: 3ce8a04c-f6aa-4bds-af73-1bb15cba762f, name: python3
Setting default log level to "WARN".
To adjust logging level use sc.setLogLevel(newLevel). For SparkR, use setLogLevel(newLevel).
23/08/23 20:47:57 WARN NativeCodeLoader: Unable to load native-hadoop library for your platform... using b
uiltin-java classes where applicable

In 1, Col 1 Spaces: 4 UTF-8 LF Plain Text

6. Tensorflow

In [1]: `import tensorflow as tf
print("TensorFlow version:", tf.__version__)`

TensorFlow version: 2.13.0

Terminal Output:

```
tothemoon ~/De/2/Systems and Tool Chains for AI Engineers/HW1 1m 42s base 20:58:46  
> jupyter notebook test_tensorflow.ipynb  
[I 21:07:23.018 NotebookApp] Serving notebooks from local directory: /Users/pigoo833/Desktop/2023 CMU Fall Courses/Systems and Tool Chains for AI Engineers/HW1  
[I 21:07:23.018 NotebookApp] Jupyter Notebook 6.4.0 is running at:  
[I 21:07:23.018 NotebookApp] http://localhost:8888/?token=690166567d4b7639d87a8b312719a6cc1e975d4813cb9b0c  
[I 21:07:23.018 NotebookApp] or http://127.0.0.1:8888/?token=690166567d4b7639d87a8b312719a6cc1e975d4813cb9b0c  
[I 21:07:23.018 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).  
[C 21:07:23.060 NotebookApp]  
  
To access the notebook, open this file in a browser:  
file:///Users/pigoo833/Library/Jupyter/runtime/nbserver-24384-open.html  
Or copy and paste one of these URLs:  
http://localhost:8888/?token=690166567d4b7639d87a8b312719a6cc1e975d4813cb9b0c  
or http://127.0.0.1:8888/?token=690166567d4b7639d87a8b312719a6cc1e975d4813cb9b0c  
[W 21:07:26.000 NotebookApp] Notebook test_tensorflow.ipynb is not trusted  
[I 21:07:26.295 NotebookApp] Kernel started: 214a5843-c05a-489a-bb86-b05c1b439dbc, name: python3  
2023-08-23 21:07:32.999255: I tensorflow/core/platform/cpu_feature_guard.cc:182] This TensorFlow binary is optimized to use available CPU instructions in performance-critical operations.  
To enable the following instructions: AVX2 FMA, in other operations, rebuild TensorFlow with the appropriate compiler flags.
```

7. Pytorch

In [2]: `import torch
import pyspark`

In [3]: `print(torch.__version__)`

1.13.1

In [4]: `print(pyspark.__version__)`

3.4.1

Terminal Output:

```
tothemoon ~/De/2/Systems and Tool Chains for AI Engineers/HW1 24m 39s base 21:32:00  
> jupyter notebook  
[I 21:32:05.180 NotebookApp] Serving notebooks from local directory: /Users/pigoo833/Desktop/2023 CMU Fall Courses/Systems and Tool Chains for AI Engineers/HW1  
[I 21:32:05.181 NotebookApp] Jupyter Notebook 6.4.0 is running at:  
[I 21:32:05.181 NotebookApp] http://localhost:8888/?token=389bfff43c1007d7e25e394ff0f26bc6e6dbcf2cc4ddd353  
[I 21:32:05.181 NotebookApp] or http://127.0.0.1:8888/?token=389bfff43c1007d7e25e394ff0f26bc6e6dbcf2cc4ddd353  
[I 21:32:05.181 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).  
[C 21:32:05.201 NotebookApp]  
  
To access the notebook, open this file in a browser:  
file:///Users/pigoo833/Library/Jupyter/runtime/nbserver-28575-open.html  
Or copy and paste one of these URLs:  
http://localhost:8888/?token=389bfff43c1007d7e25e394ff0f26bc6e6dbcf2cc4ddd353  
or http://127.0.0.1:8888/?token=389bfff43c1007d7e25e394ff0f26bc6e6dbcf2cc4ddd353  
[I 21:32:11.462 NotebookApp] Creating new notebook in  
[I 21:32:12.800 NotebookApp] Kernel started: 3bffd25d-3eed-4a6f-806c-8564db6a22b0, name: python3  
[I 21:33:11.535 NotebookApp] Saving file at /Untitled.ipynb
```

8. Docker

```
tothemoon ~/De/2/Systems and Tool Chains for AI Engineers/HW1 1m 46s base 21:33:49  
> docker --version  
Docker version 20.10.17, build 100c70180f
```

Part – II

1. Complete Introduction to GitHub

i. Create a branch

The screenshot shows a GitHub repository named "skills-introduction-to-github". The main branch is "main" with 1 branch and 0 tags. A new branch, "my-first-branch", has been created. The repository contains files like .github, images, .gitignore, LICENSE, and README.md. The README.md file displays the text "Introduction to GitHub" and "Step 1: Create a branch". The right sidebar shows repository details such as "My clone repository", "About", "Releases", and "Packages".

ii. Commit a file

The screenshot shows the same GitHub repository after a commit. A new file, "PROFILE.md", has been added. The repository now has 2 branches and 0 tags. The commit message for PROFILE.md is "Add PROFILE.md". The README.md file still displays the introductory text. The right sidebar remains the same.

iii. Open a pull request

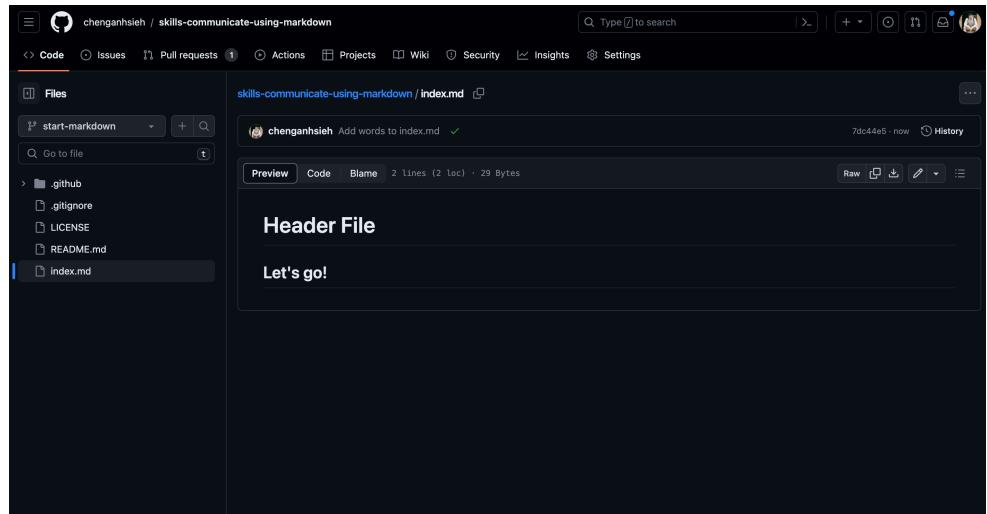
The screenshot shows the repository after another commit. The commit message for README.md is "Update to 2 in STEP and README.md". The repository now has 2 branches and 0 tags. A pull request has been opened from "my-first-branch" to "main". The README.md file still displays the introductory text. The right sidebar remains the same.

iv. Merge pull request

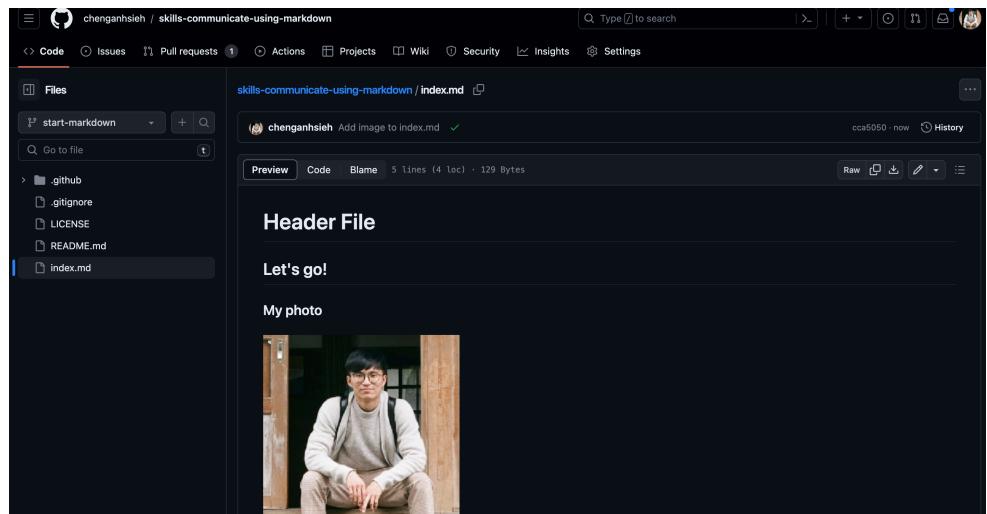
v. Finish

2. Complete communicate-using-markdown

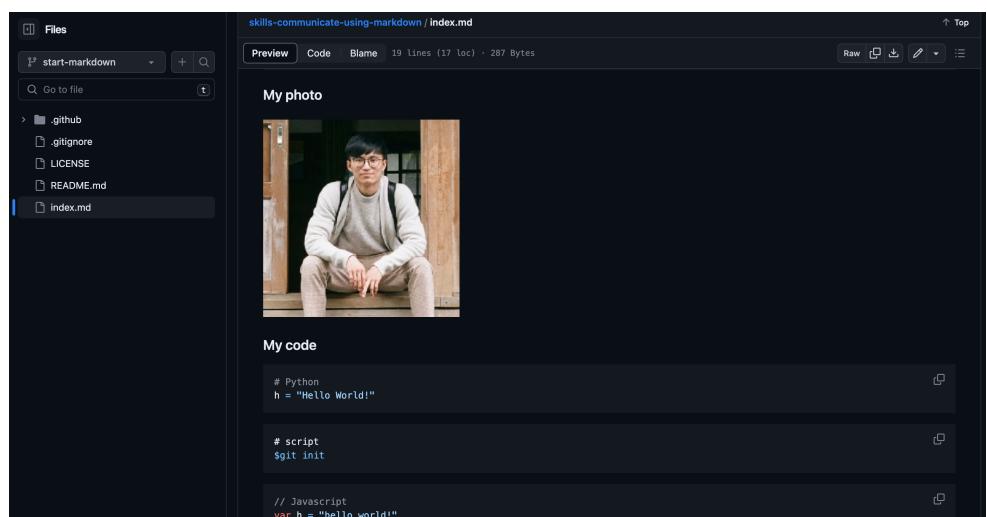
i. Add headers



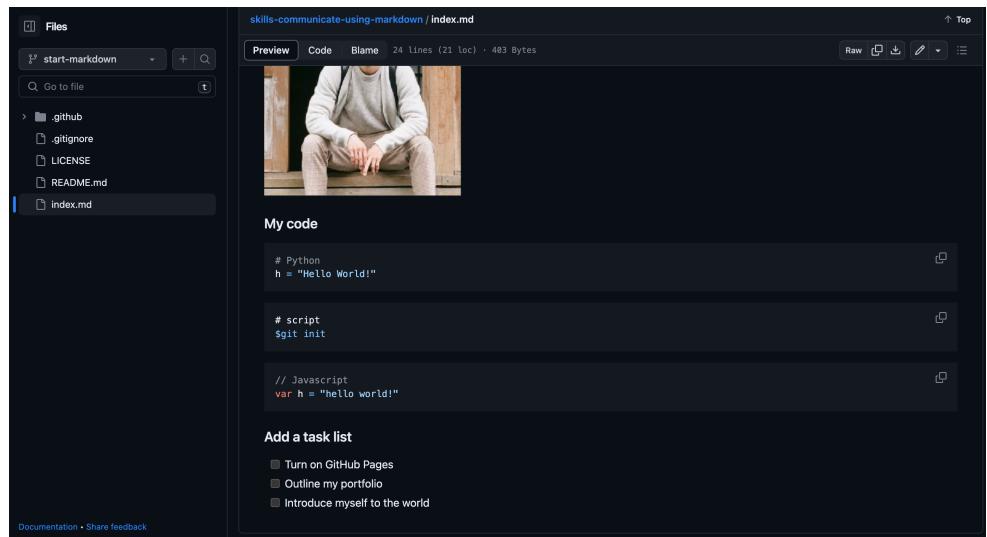
ii. Add an image



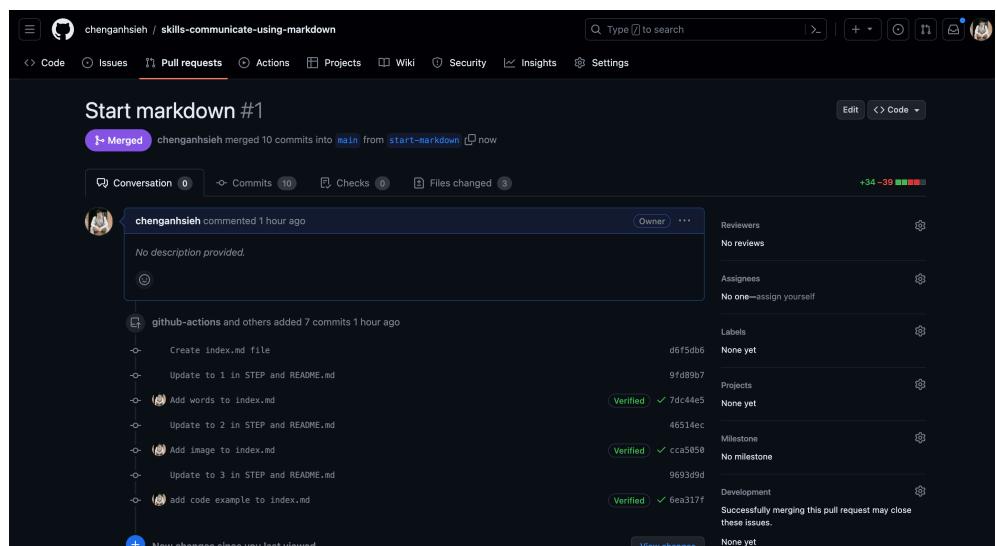
iii. Add a code example



iv. Add a task list

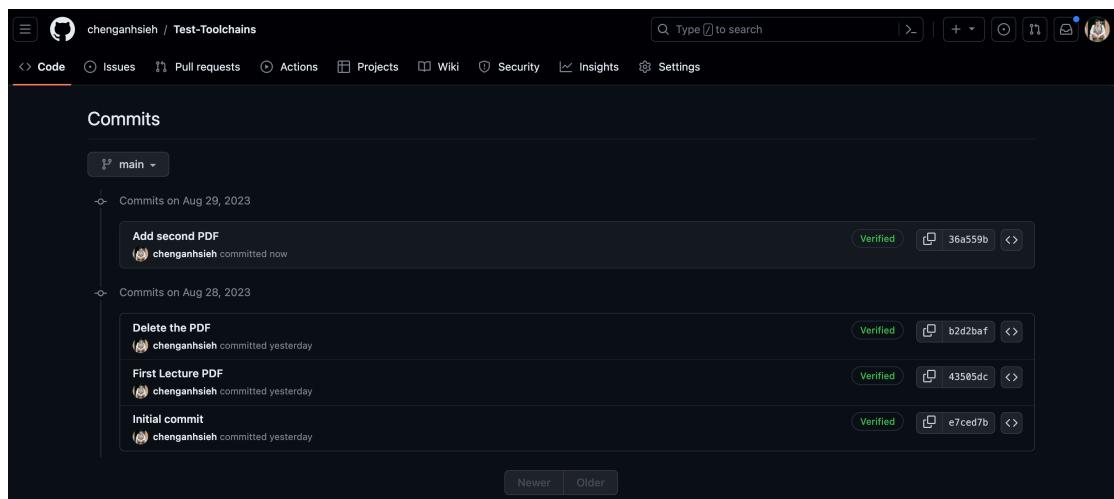


v. Merge Pull Request



3. Test-Toolchains Repository

(a) A screenshot of your GitHub repository history



(b) A screenshot of current view of your repository

The screenshot shows a GitHub repository page for 'Test-Toolchains'. The repository is public and has 4 commits. The README.md file contains the text 'Test-Toolchains' and 'HW1 - Systems Setup and GitHub Skills (Systems and Tool Chains for AI Engineers)'. The repository has 0 stars, 1 watching, and 0 forks. There are no releases published.

Code Issues Pull requests Actions Projects Wiki Security Insights Settings

Test-Toolchains Public

main 1 branch 0 tags

chenganhsieh Add second PDF 36a559b 1 minute ago 4 commits

Lecture_1_Introduction_and_Cours... Add second PDF 1 minute ago

README.md Initial commit yesterday

README.md

Test-Toolchains

HW1 - Systems Setup and GitHub Skills (Systems and Tool Chains for AI Engineers)

About

HW1 - Systems Setup and GitHub Skills (Systems and Tool Chains for AI Engineers)

Readme Activity 0 stars 1 watching 0 forks

Releases

No releases published Create a new release

Packages

(c) URL: <https://github.com/chenganhsieh/Test-Toolchains>