Python for Web Developers Learning Journal

Objective

We find that the students who do particularly well in our courses are those who practice metacognition. **Metacognition** is the art of thinking about thinking; developing a deeper understanding of your own thought processes. With the help of this Learning Journal, you'll broaden your metacognitive knowledge and skills by reflecting on what you learn in this course.

Thanks to this Learning Journal, when you finish the course you'll have a complete and detailed record of your learning journey and progress over time. We really recommend that you take the time to complete this Journal; students do better in CF courses and in the working world as a result!

Directions

First, complete the pre-work section before you start your course. Then, once you've begun learning, take time after each Exercise to return to this Journal and respond to the prompts.

There will be 3 to 5 prompts per Exercise, and we recommend spending about 10 to 15 minutes in total answering them. Don't overthink it—just write whatever comes to mind!

Also make sure that, once you've started filling this document in, you upload it as a deliverable on the platform. This is so that your mentor can also see your Journal and how you're progressing over time. Don't worry though—what you write here won't affect how you're graded for the Exercise tasks. The learning journal is mostly for you and your self-evaluation!

Pre-Work: Before You Start the Course

Reflection questions (to complete before your first mentor call)

- What experiences have you had with coding and/or programming so far? What other experiences (programming-related or not) have you had that may help you as you progress through this course?
  - At the community college I went to I took Java, C# and Web Development(HTML, CSS, JS, php) which I need more practice.

    I worked as a tax officer that helped me to be more detail oriented and a better problem solver.

    Since October-2023, I have been attending this course, learning more of JS, React, Angular, Nonerelational Database Mongo, APIs, TDD and more.
- What do you know about Python already? What do you want to know?
  - I don't have any experience with Python worth to mention.

- What challenges do you think may come up while you take this course? What will help you face them? Think of specific spaces, people, and times of day of week that might be favorable to your facing challenges and growing. Plan for how to solve challenges that arise.
  - I believe that I may encounter version compatibility issues and problems or bugs caused by wrong indentations.

Remember, you can always refer to Exercise 1.4 of the Orientation course if you're not sure whom to reach out to for help and support.

Exercise 1.1: Getting Started with Python

Learning Goals

- Summarize the uses and benefits of Python for web development

  Python is a beginner-friendly language known for its simplicity and readability, making it an excellent choice for those starting their programming journey. It's versatile in web development, data analysis,

automation, and game development. A vast community and extensive libraries provide support and resources, providing a smooth learning curve.

- Prepare your developer environment for programming with Python

Step 1: Install Python

Check whether you have Python installed on your computer. Type in your terminal;

python --version

python2 --version

python3 --version

```
alexisabner@alexiss-air ~ % python3 --version
Python 3.12.4
```

Step 2: Set up a new virtual environment and name it “cf-python-base”.

```
alexisabner@alexiss-air ~ % pip3 install virtualenvwrapper
Collecting virtualenvwrapper
  Using cached virtualenvwrapper-6.1.0-py3-none-any.whl.metadata (5.1 kB)
Collecting virtualenv (from virtualenvwrapper)
  Using cached virtualenv-20.26.3-py3-none-any.whl.metadata (4.5 kB)
Collecting virtualenv-clone (from virtualenvwrapper)
  Using cached virtualenv_clone-0.5.7-py3-none-any.whl.metadata (2.7 kB)
Collecting stevedore (from virtualenvwrapper)
  Using cached stevedore-5.2.0-py3-none-any.whl.metadata (2.3 kB)
Collecting pbr!=2.1.0,>=2.0.0 (from stevedore->virtualenvwrapper)
  Using cached pbr-6.0.0-py2.py3-none-any.whl.metadata (1.3 kB)
Collecting distlib<1,>=0.3.7 (from virtualenv->virtualenvwrapper)
  Using cached distlib-0.3.8-py2.py3-none-any.whl.metadata (5.1 kB)
Collecting filelock<4,>=3.12.2 (from virtualenv->virtualenvwrapper)
  Using cached filelock-3.15.4-py3-none-any.whl.metadata (2.9 kB)
Collecting platformdirs<5,>=3.9.1 (from virtualenv->virtualenvwrapper)
  Using cached platformdirs-4.2.2-py3-none-any.whl.metadata (11 kB)
Using cached virtualenvwrapper-6.1.0-py3-none-any.whl (22 kB)
Using cached stevedore-5.2.0-py3-none-any.whl (49 kB)
Using cached virtualenv-20.26.3-py3-none-any.whl (5.7 MB)
Using cached virtualenv_clone-0.5.7-py3-none-any.whl (6.6 kB)
Using cached distlib-0.3.8-py2.py3-none-any.whl (468 kB)
Using cached filelock-3.15.4-py3-none-any.whl (16 kB)
Using cached pbr-6.0.0-py2.py3-none-any.whl (107 kB)
Using cached platformdirs-4.2.2-py3-none-any.whl (18 kB)
Installing collected packages: distlib, virtualenv-clone, platformdirs, pbr, filelock, virtualen
v, stevedore, virtualenvwrapper
Successfully installed distlib-0.3.8 filelock-3.15.4 pbr-6.0.0 platformdirs-4.2.2 stevedore-5.2.
0 virtualenv-20.26.3 virtualenv-clone-0.5.7 virtualenvwrapper-6.1.0
```

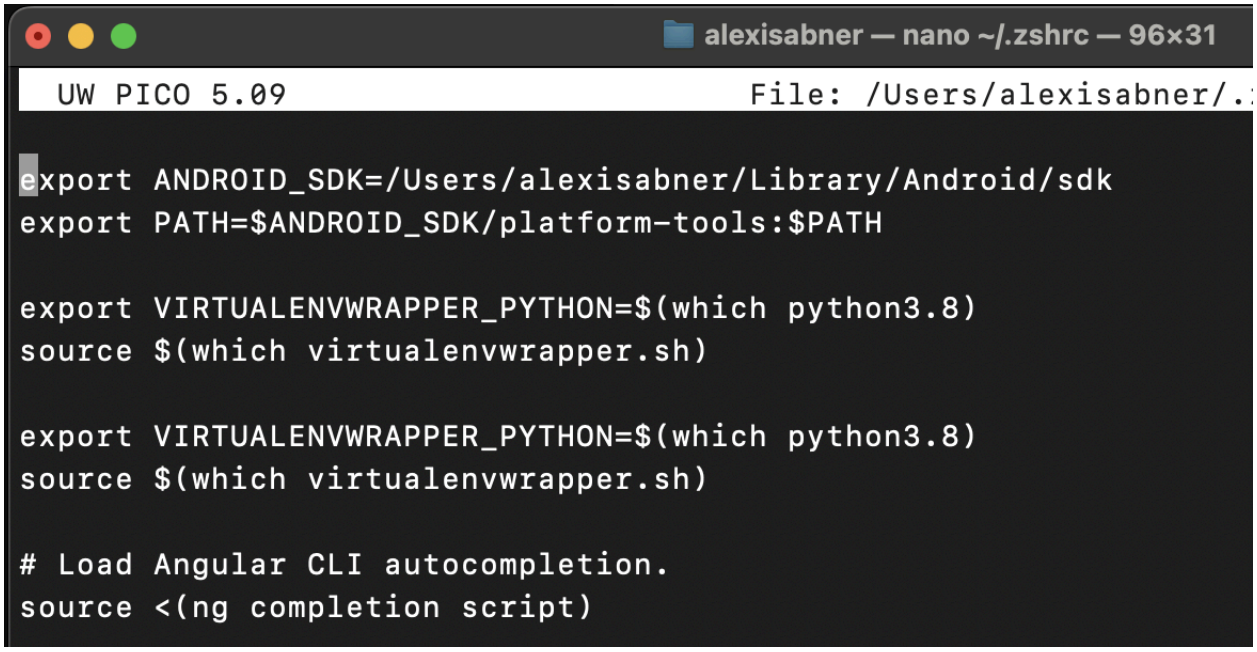
Creating backup;

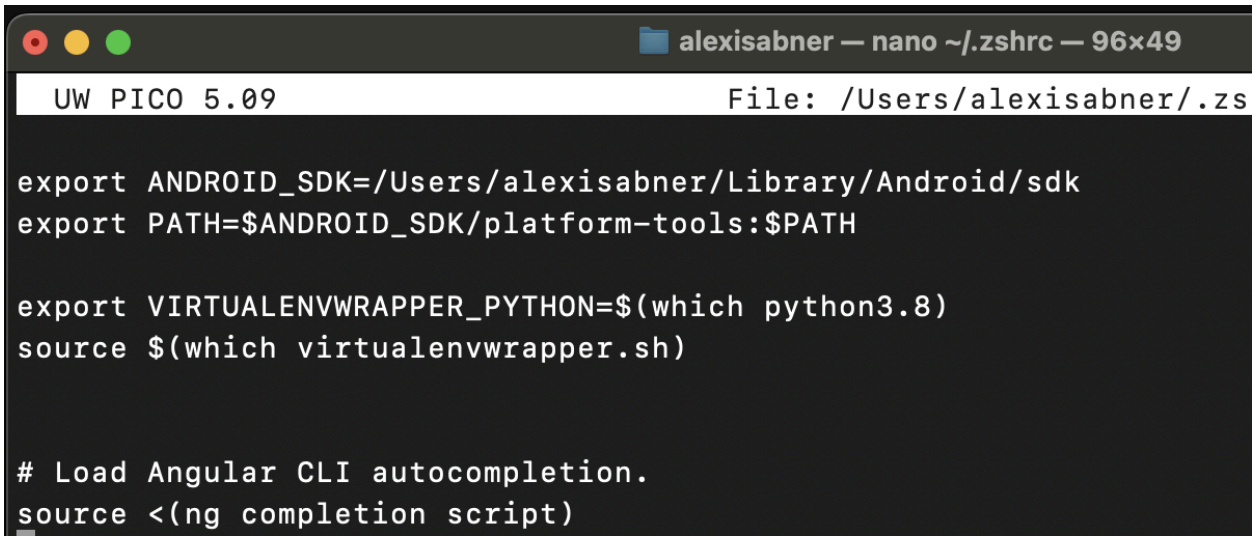
```
alexisabner@alexiss-air ~ % sudo cp ~/.zshrc ~/.zshrc-backup
Password:
alexisabner@alexiss-air ~ % ls -la ~/.zshrc-backup
-rw-r--r--@ 1 root  staff  264 Jul 30 20:15 /Users/alexisabner/.zshrc-backup
```

Verifying the location of the “virtualenvwrapper.sh” file:

```
alexisabner@alexiss-air ~ % which virtualenvwrapper.sh
/opt/homebrew/bin/virtualenvwrapper.sh
```

Modify the shell startup file



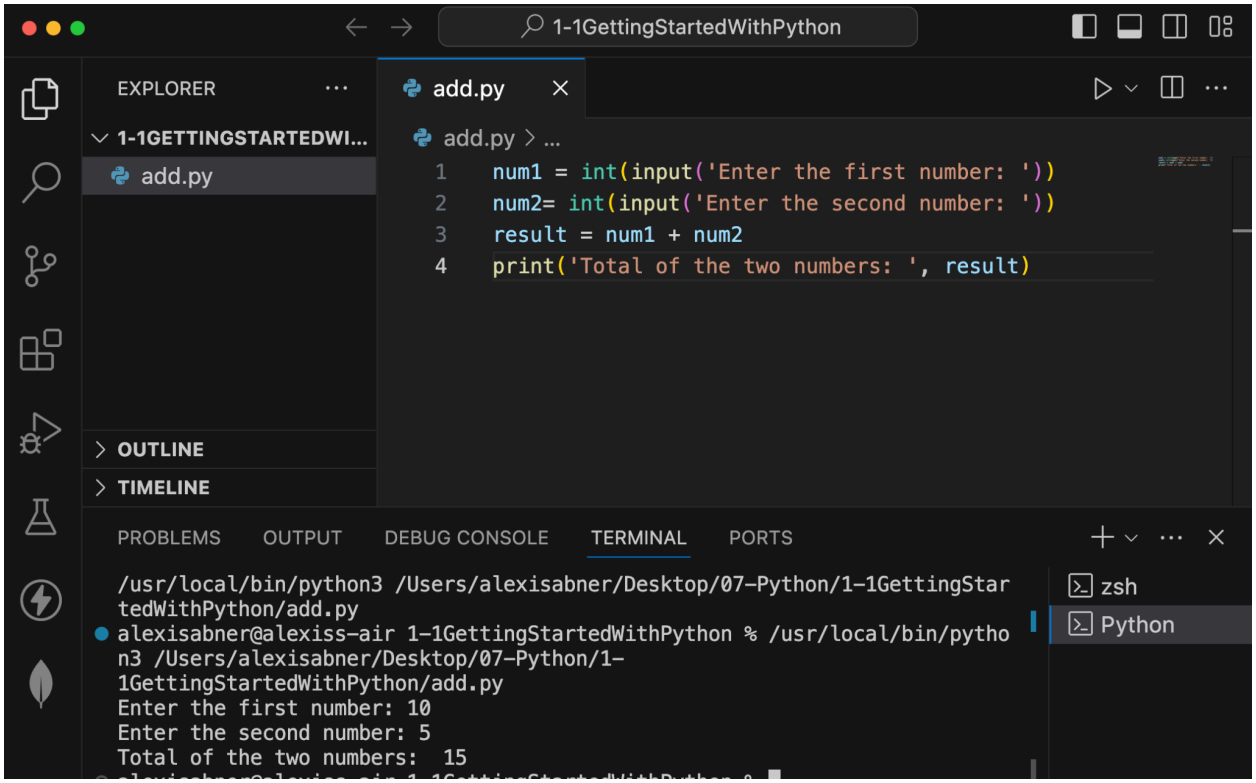


Creating a new Virtual Environment

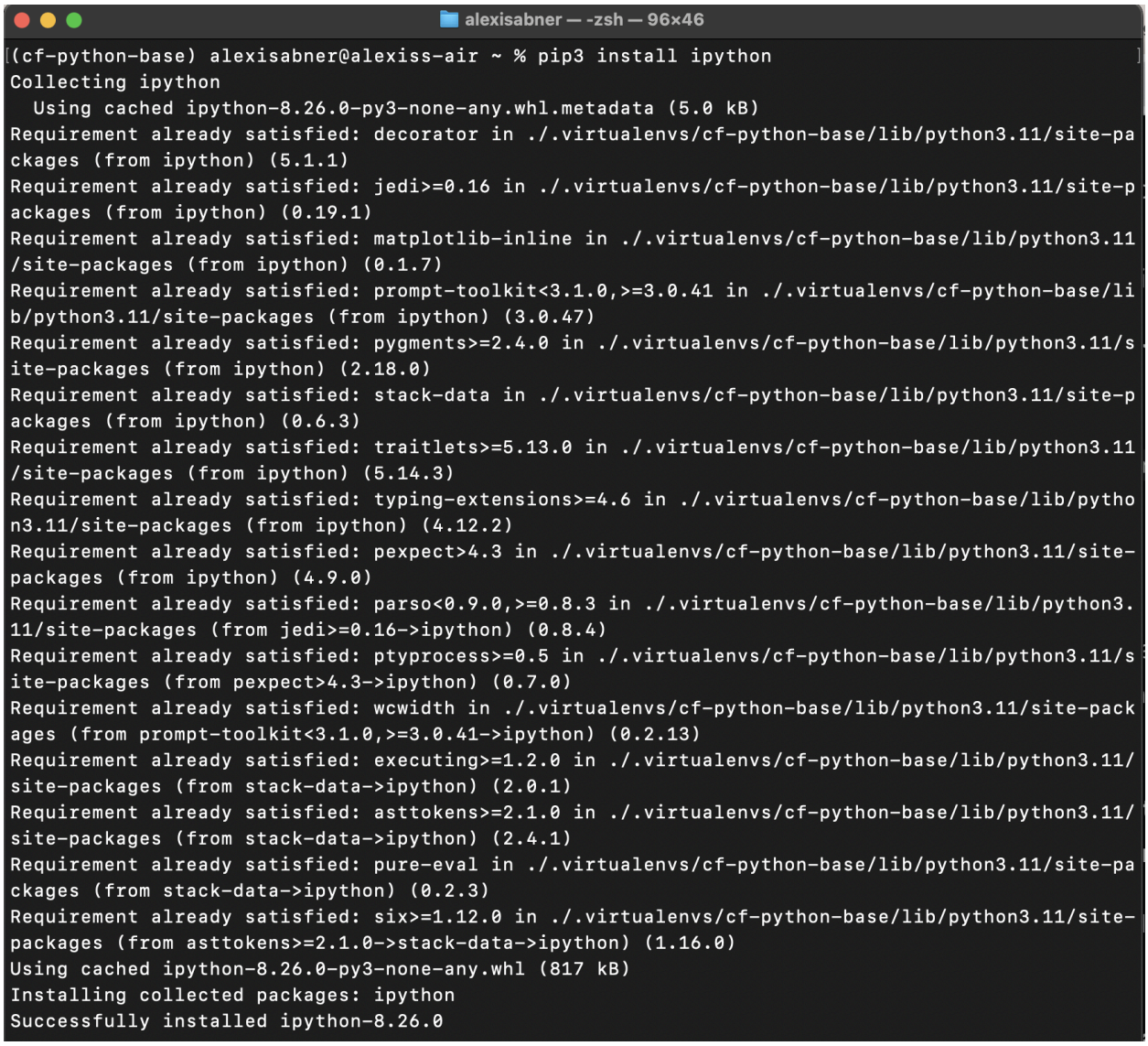
```
alexisabner@alexiss-air ~ % mkvirtualenv cf-python-base
created virtual environment CPython3.11.3.final.0-64 in 215ms
  creator CPython3Posix(dest=/Users/alexisabner/.virtualenvs/cf-python-base, clear=False, no_vcs
_ignore=False, global=False)
  seeder FromAppData(download=False, pip=bundle, setuptools=bundle, wheel=bundle, via=copy, app_
data_dir=/Users/alexisabner/Library/Application Support/virtualenv)
    added seed packages: pip==24.1.2, setuptools==70.2.0, wheel==0.43.0
  activators BashActivator,CShellActivator,FishActivator,NushellActivator,PowerShellActivator,Py
thonActivator
virtualenvwrapper.user_scripts creating /Users/alexisabner/.virtualenvs/cf-python-base/bin/prede
activate
virtualenvwrapper.user_scripts creating /Users/alexisabner/.virtualenvs/cf-python-base/bin/postd
eactivate
virtualenvwrapper.user_scripts creating /Users/alexisabner/.virtualenvs/cf-python-base/bin/preac
tivate
virtualenvwrapper.user_scripts creating /Users/alexisabner/.virtualenvs/cf-python-base/bin/posta
ctivate
virtualenvwrapper.user_scripts creating /Users/alexisabner/.virtualenvs/cf-python-base/bin/get_e
nv_details
(cf-python-base) alexisabner@alexiss-air ~ %
```

3. Install VSCode

VSCode has been installed at the beginning of this course.

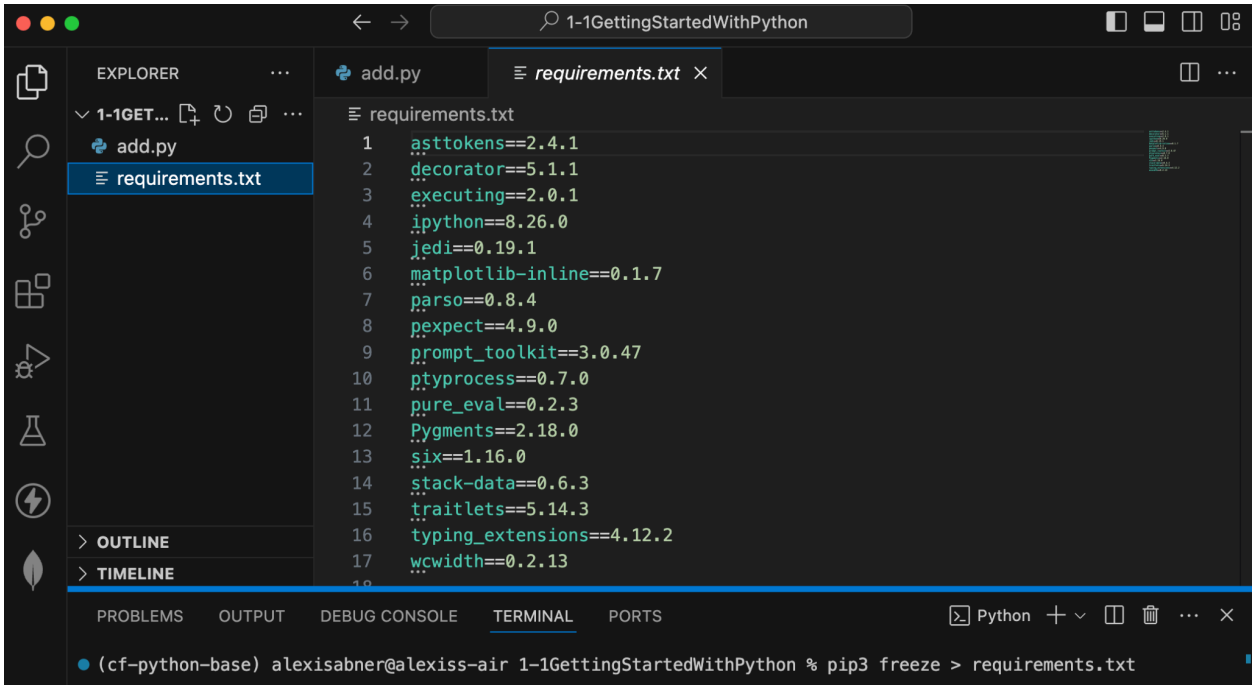


Setting up an IPython shell in the virtual environment “cf-python-base”.

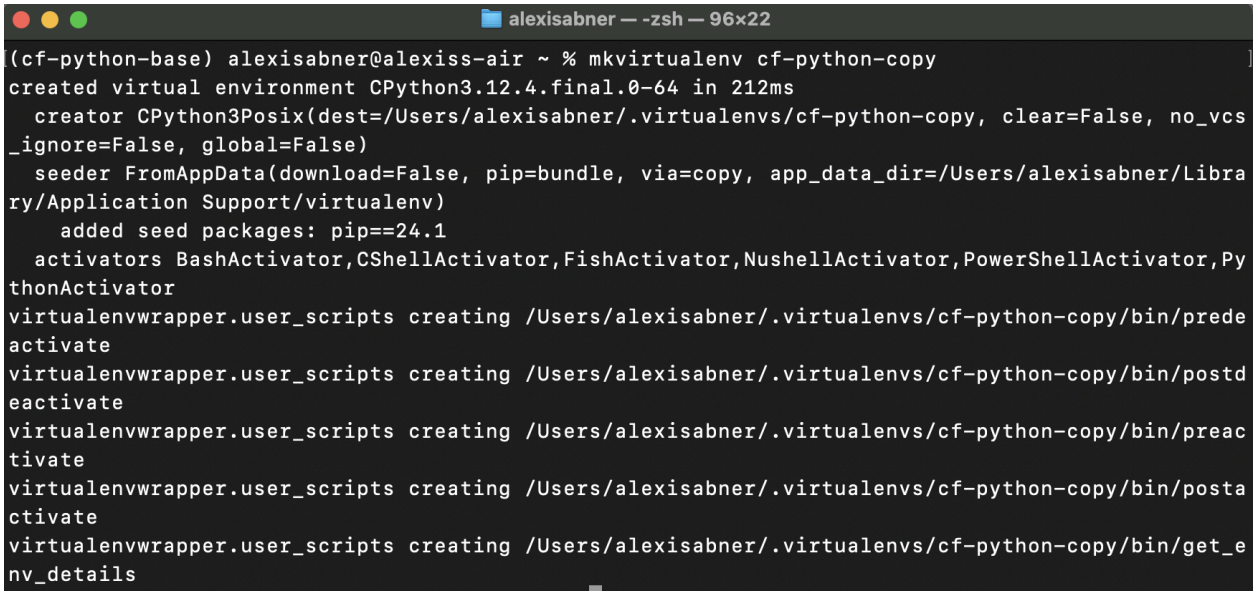


Requirements File

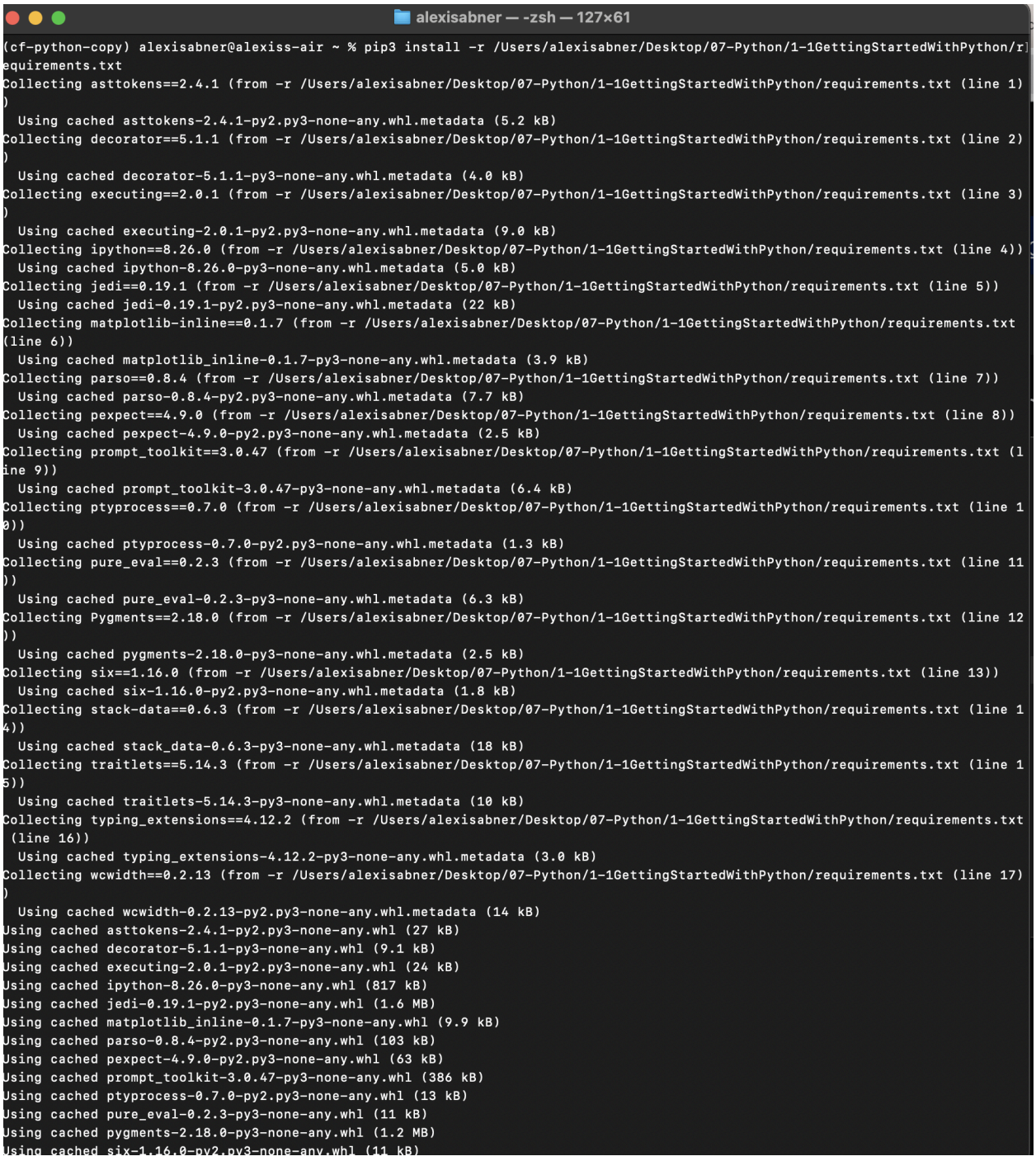
```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

(cf-python-base) alexisabner@alexiss-air 1-1GettingStartedWithPython % pip3 freeze
asttokens==2.4.1
decorator==5.1.1
executing==2.0.1
ipython==8.26.0
jedi==0.19.1
matplotlib-inline==0.1.7
parso==0.8.4
pexpect==4.9.0
prompt_toolkit==3.0.47
ptyprocess==0.7.0
pure_eval==0.2.3
Pygments==2.18.0
six==1.16.0
stack-data==0.6.3
traitlets==5.14.3
typing_extensions==4.12.2
wcwidth==0.2.13
```



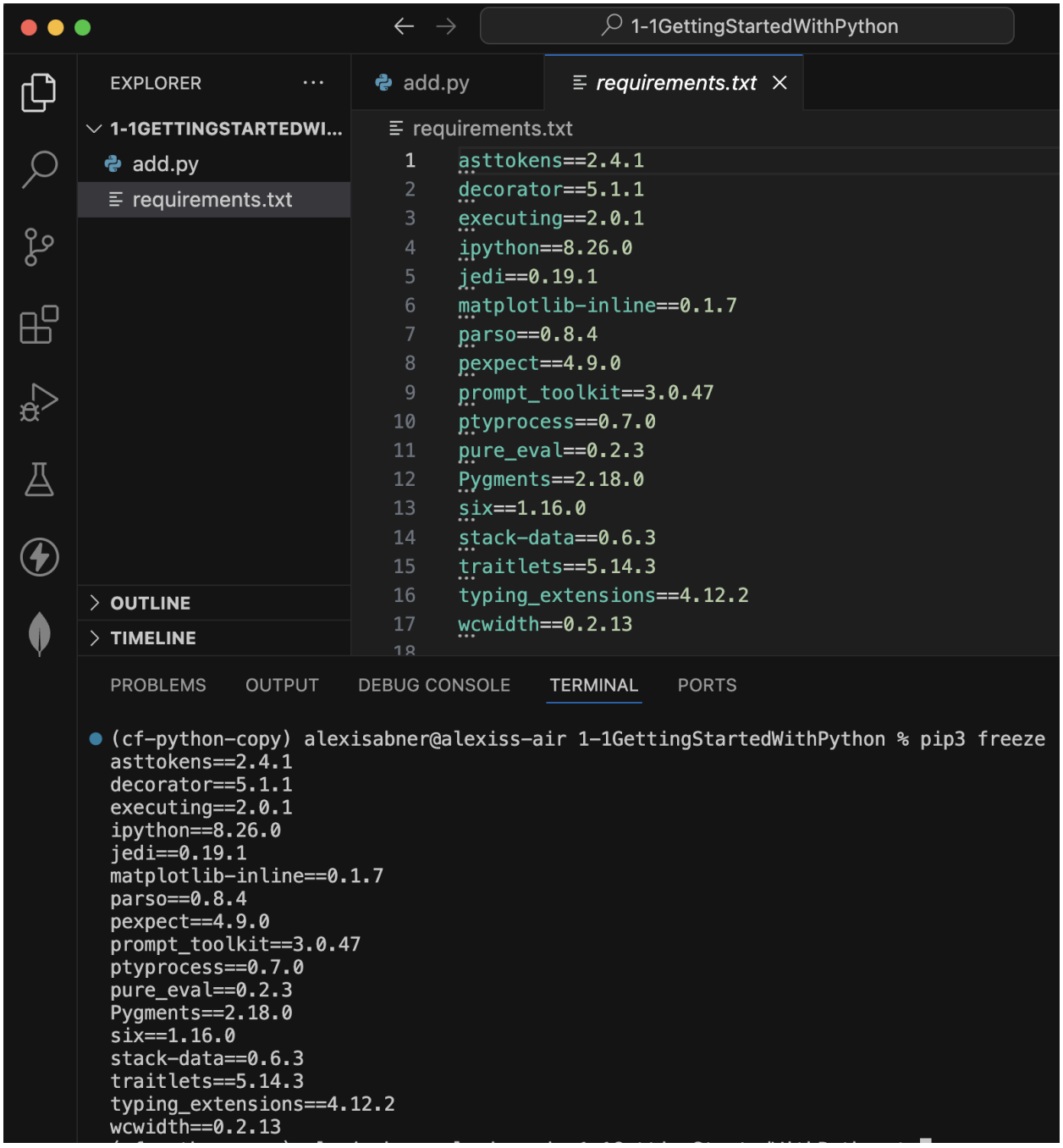
Creating a new virtual environment named "cf-python-copy"



Installing the packages from cf-python-base requirements.txt



```
(cf-python-copy) alexisabner@alexiss-air ~ % pip list
Package            Version
------------------ -------
asttokens          2.4.1
decorator          5.1.1
executing          2.0.1
ipython            8.26.0
jedi               0.19.1
matplotlib-inline 0.1.7
parso              0.8.4
pexpect            4.9.0
pip                24.1
prompt_toolkit     3.0.47
ptyprocess         0.7.0
pure_eval          0.2.3
Pygments           2.18.0
six                1.16.0
stack-data         0.6.3
traitlets          5.14.3
typing_extensions 4.12.2
wcwidth            0.2.13
(cf-python-copy) alexisabner@alexiss-air ~ %
```



Reflection Questions

- In your own words, what is the difference between frontend and backend web development? If you were hired to work on backend programming for a web application, what kinds of operations would you be working on?

- Frontend is the UI part of an application. It is where the user interacts with the app.

  Backend is where users retrieving, processing data, performing calculations, managing their accounts.

  If I were hired as a backend developer, I would be creating APIs, testing them.

• Imagine you're working as a full-stack developer in the near future. Your team is asking for your advice on whether to use JavaScript or Python for a project, and you think Python would be the better choice. How would you explain the similarities and differences between the two languages to your team? Drawing from what you learned in this Exercise, what reasons would you give to convince your team that Python is the better option?
(Hint: refer to the Exercise section "The Benefits of Developing with Python")

- Learning curve of Python is not so challenging.
- It uses indentation and clear syntax, similar to JavaScript, helps in writing clean and error-resistant code.
- Dynamic typing allows the developers to change types without errors.
- It has a very strong supporting community

• Now that you've had an introduction to Python, write down 3 goals you have for yourself and your learning during this Achievement. You can reflect on the following questions if it helps you. What do you want to learn about Python? What do you want to get out of this Achievement? Where or what do you see yourself working on after you complete this Achievement?

- I want to learn the basics of Python syntax and structure,
- I want to build a solid foundation in finding solutions,
- I want to create and complete the project successfully..