For MacOS:

1. Navigate to https://www.python.org/downloads/release/python-3128/
2. Install v3.12.8 using the "macOS 64-bit universal2 installer"
3. Note, this is NOT the latest release

For Windows:

1. Go to the Microsoft Store and search Python or, alternatively, navigate to https://www.python.org/downloads/release/python-3128/
2. Install v3.12 on the Microsoft store or v3.12.8 using the "Windows installer (64-bit)" at the link in step 1 for Windows
3. Note, this is NOT the latest release

For both MacOS and Windows:

4. In terminal on MacOS or PowerShell on Windows, run the following code:
    a. python -m venv my_env
        i. If there is more than one version of Python available on your machine, v3.18 can be specified using "python3.18 -m venv my_env"
    b. my_env\Scripts\activate
        i. May need to run terminal/PowerShell as administrator and execute the code "Set-ExecutionPolicy RemoteSigned". Can always reset policy back using "Set-ExecutionPolicy Restricted".
    c. pip install torch
    d. pip install torchvision
    e. pip install pandas
    f. pip install jupyter
    g. pip install .....
    h. ipython kernel install --user --name=my_env
        i. Can uninstall with "jupyter kernelspec uninstall unwanted-kernel"
    i. deactivate

The typical process for using Jupyter Notebooks to write and execute Python code is the following:

1. To create a Jupyter Notebook, navigate to the directory containing my_env and run the following code in terminal/PowerShell
    a. my_env\Scripts\activate
    b. jupyter notebook
2. Go to File > New and select "Notebook"
3. Using the "Select Kernel" drop-down menu, select the kernel "my_env"
4. Write, execute, and save Python code
5. When done, make sure all work is saved and select File > Shut Down
6. Run the following code in terminal/PowerShell
    a. deactivate

Exercises:

1. Follow the steps above to open a Jupyter Notebook and take a screenshot of the output of the code below:

```
import torch
import torchvision
x = torch.rand(5, 3)
print(x)
```

2. Follow the steps above to open a Jupyter Notebook and take a screenshot of the output of the code below:

```
import torch
torch.cuda.is_available()
```

3. What is the main difference between supervised and unsupervised learning? Is the ResNet model in Chapter 2 an example of supervised or unsupervised learning? Why?

4. Briefly describe the fields of machine learning and deep learning, as well as the main difference(s) between both fields.

5. What type of data transformation is performed by a hidden layer in a neural network using RELU activation (f(x)=max(0,x))? What type of data transformation is performed by a hidden layer in a neural network using linear activation (f(x)=x)?