9.1.3

Import Dependencies

As soon as you finish downloading the SQLite database and checking that your tools are ready to go, your phone buzzes—it's a text from W. Avy! It reads:

"Aloha! Thinking about the surf shop—excited to see what you come up with. Also, thinking longer term, if the shop on Oahu does well, we could expand to other islands."

You fire back a quick response: "Yes! I'll keep the code documented so we won't have to duplicate efforts in the future."

Turning back to your computer, you're ready to take the next step: import the dependencies. You make a mental note to comment out your code.

Now that we have the data downloaded and our tools set up, we can import all the dependencies we'll need. Some will be new, others you might have used before. You will be writing your code in the provided Jupyter notebook file, `climate_analysis.ipynb`. Go ahead and open this Jupyter notebook using your command line.

REWIND

Dependencies are previously written snippets of code that we can then use in our code. Dependencies save us tons of time because we don't have to write every line of code ourselves. Instead, we just import the dependency.

Dependencies can be provided by companies or other programmers or analysts, or they can be from code you wrote previously.

Matplotlib Dependencies

The first dependency we will need to import is Matplotlib, as we'll need to graph the results of our analysis to show investors.

Matplotlib's dependency contains code that allows you to plot data. There are many different kinds of plots you can create; for this project, we'll use the "fivethirtyeight" style. This style essentially tries to replicate the style of the graphs from FiveThirtyEight.com. (There are other style types too—if a different style catches your eye, feel free to use it!)

NOTE

For more information about fivethirtyeight style, see this FiveThirtyEight style sheet (https://matplotlib.org/stable/gallery/style_sheets/fivethirtyeight.html) .

Start by running the following code. This will import style from Matplotlib.

```
from matplotlib import style
```

Next, we'll add the specific style we want, fivethirtyeight. Add this line to your code:

```
style.use('fivethirtyeight')
```

Now we need to add the pyplot module, a dependency that provides us with a MATLAB-like plotting framework. Go ahead and add this to your code.

```
import matplotlib.pyplot as plt
```

Next, we'll add NumPy and Pandas as dependencies.

NumPy and Pandas Dependencies

We will need to use a few standard dependencies for our code. Go ahead and import NumPy and Pandas dependencies with the following code:

```
import numpy as np
import pandas as pd
```

Next, we'll import datetime.

Datetime Dependencies

We'll use datetime in this module because we'll need to calculate some data points that have to do with dates. To import datetime, run the following code:

```
import datetime as dt
```

Good work! Finally, we'll import a few dependencies from SQLAlchemy.

Import SQLAlchemy Dependencies

We know we want to query a SQLite database, and SQLAlchemy is the best tool to do that. So we'll need to import dependencies from SQLAlchemy.

We can start by adding the SQLAlchemy dependency, but then we will also add the dependencies for `automap`, `session`, `create_engine`, and `func`. These dependencies will help us set up a simple database that we'll use later on.

Add the following to your code:

```
import sqlalchemy
from sqlalchemy.ext.automap import automap_base
from sqlalchemy.orm import session
from sqlalchemy import create_engine, func
```

Great work on getting your dependencies imported into your code! Give yourself a pat on the back: You have just saved yourself a ton of time by importing dependencies instead of coding everything by hand. You are that much closer to days in the waves!

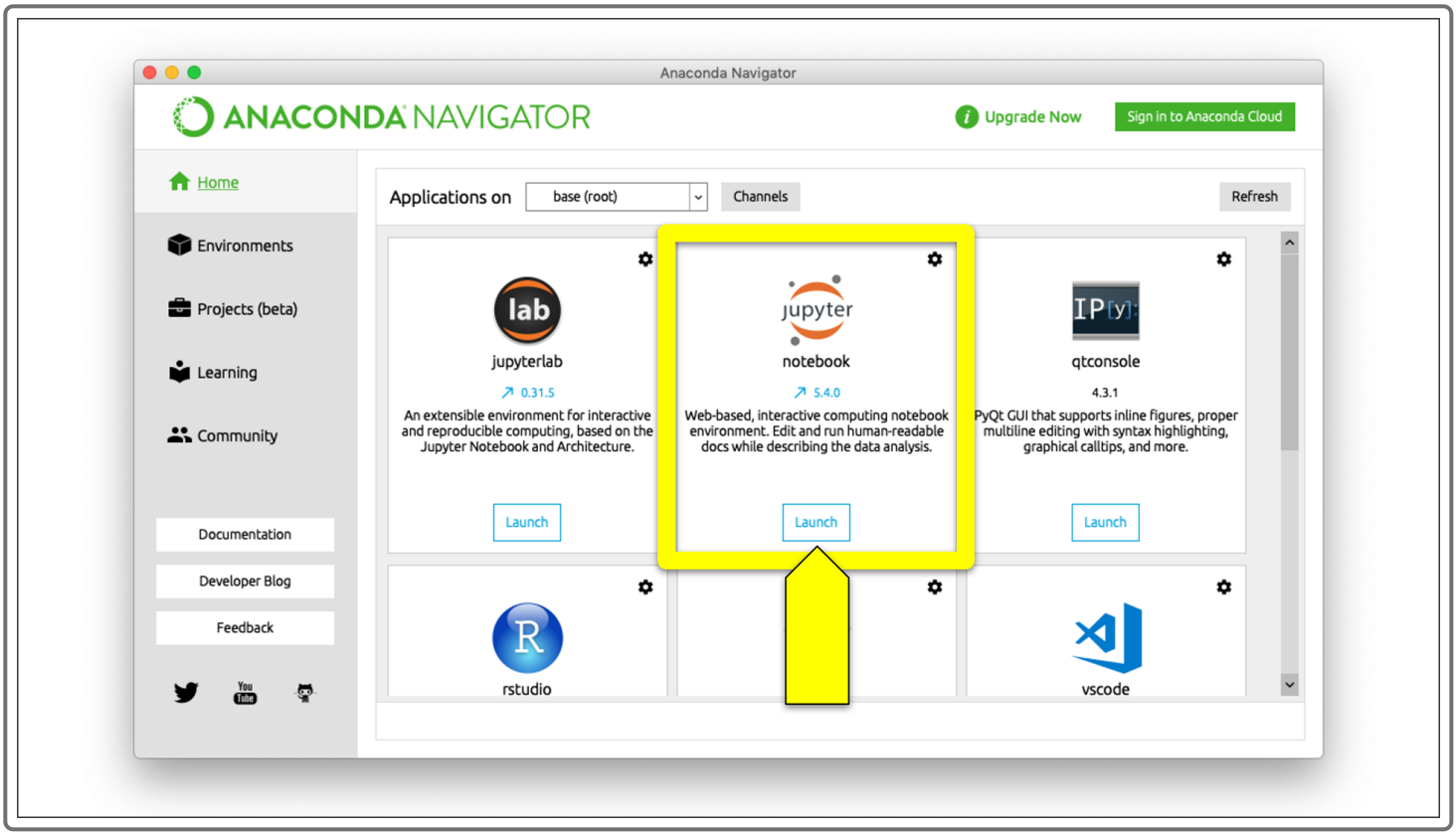
Now let's open the Jupyter notebook file so that we can begin exploring SQLite and SQLAlchemy.

Open Starter Jupyter Notebook

Previously, we've opened Jupyter notebook files via the command line. In this module, we'll use a different method: Anaconda Navigator. There is no right or wrong way to open the file; this is just another option at your disposal.

The Jupyter Notebook file, `climate_analysis.ipynb`, is already downloaded in the surfs_up folder. Navigate to this folder.

Next, open the Anaconda Navigator application, which you should find in the Applications folder. Once you've opened Anaconda-Navigator, find the Jupyter Notebook application icon and click it. This icon should be the top center item, as shown below:



When you click the Anaconda Navigator icon, a new command line window will open, followed by a webpage showing the files on your computer. Navigate through this file structure to find the surfs_up folder where you saved your `climate_analysis.ipynb` file. Click the Jupyter Notebook file to open it.

Nice work! Now we're ready to explore SQLite.