Joel Belton Follow

Aug 31, 2022 · 5 min read · · Listen

7 Python Modules You Need to Learn Before Your Next Tech Interview

From Web Development to Data Science Libraries to help you succeed

One of the most common interview questions in any software engineering job, is being asked to explain Python modules. The ability to identify and describe key modules demonstrates knowledge of the language but also an understanding of what tools are best for the job.

This article will discuss the essential Python Modules you need to know.

These have been broken down into three major categories to make things a little easier.

Photo by Clément Hélardot on Unsplash

Web

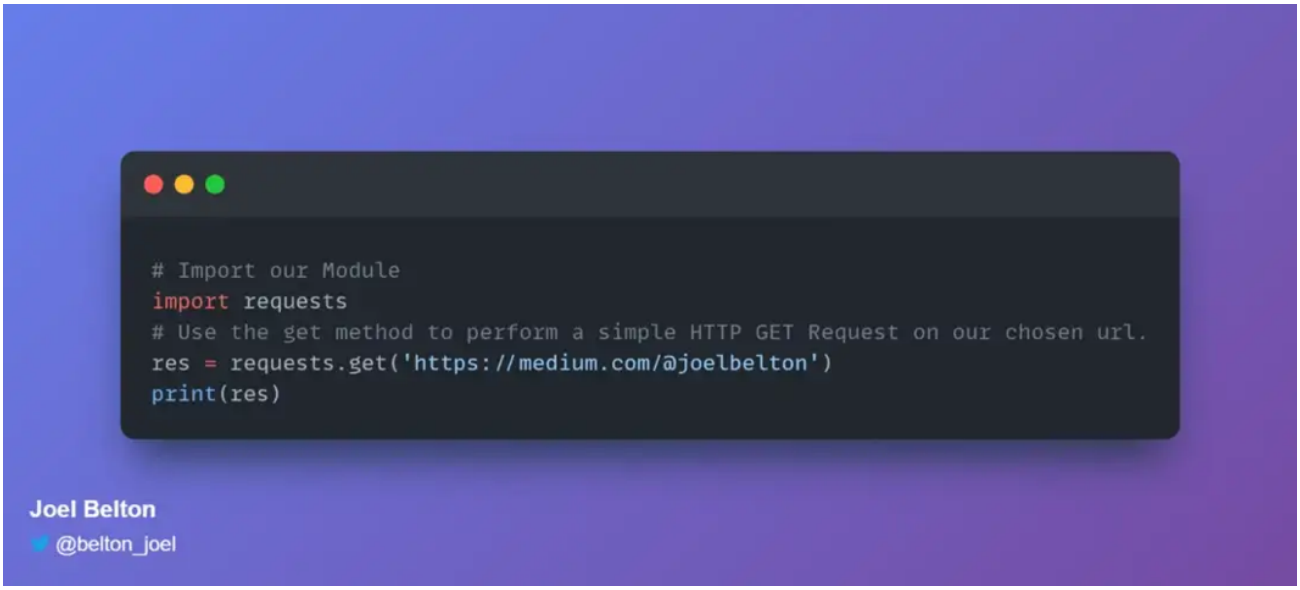
A significant advantage of Python in web development is its vast collection of libraries, along with better readability and easy integration with other languages. Python also provides portability, GUI support and many more features that make it a perfect language for web developers.

> *Even leading IT Tech giant Google heavily relies on Python, one of the three primary languages used by the search engine.*

. . .

Requests

Requests Module can be used to send HTTP Requests with ease, allowing developers to get up and running quickly with all things web. Because of this, it's become the most downloaded Python package receiving 8 million downloads just this week.



Simple Request GET method

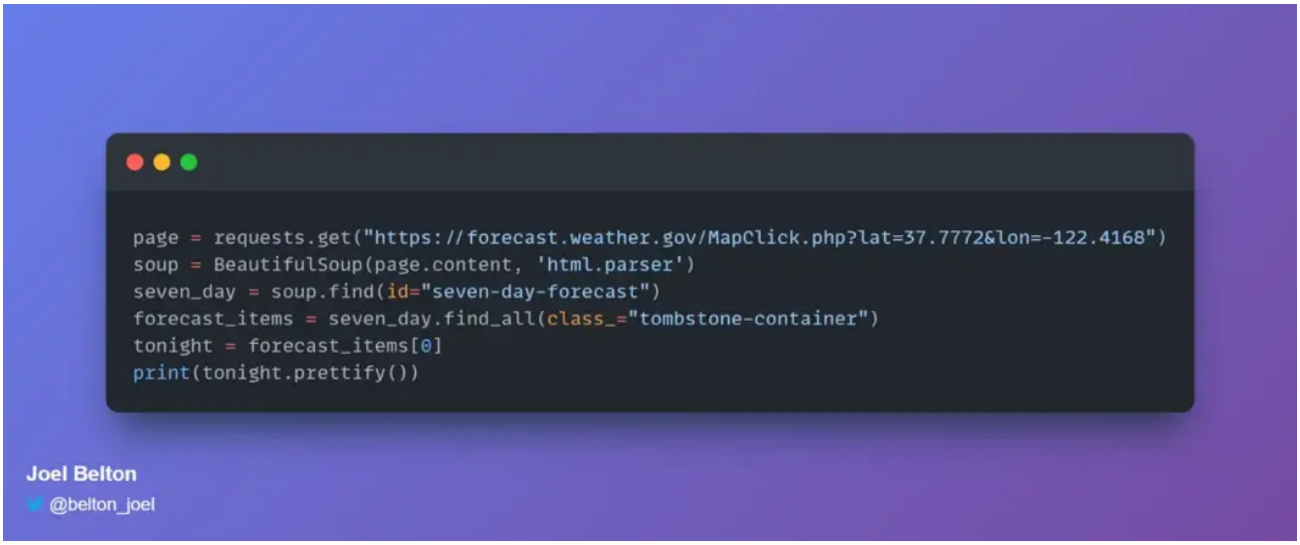
We can use this module to create any HTTP requests we desire with authentication, cookies, history and timeouts. Everything you could expect to do with a HTTP call can be done quickly and easily with Requests.

. . .

Beautiful Soup

Beautiful Soup is a fantastic module for scraping the web; it can be a tremendous ally when trying to grab HTML data from the internet. Its purpose is to parse structured data and allows you to interact with HTML as you may using your browser developer tools.

The module contains a few intuitive functions for you to explore HTML code and grab information by ID, class names and other identifiers. We can extract text/attributes and even pass functions to our results.



Example provided by https://www.dataquest.io/

. . .

Django

Django is a little different from our previous two entries in this list in that it is a complete web framework. It's the most popular Python framework on the web and one of the most widely used across all languages. Used by companies such as Instagram & Spotify.

Django is a heavy-weight framework that comes with an extensive toolset and complex concepts that will allow you to maximise your site. It can be tough to learn at first, but it is extremely powerful when used effectively.

. . .

Flask

Flask, similarly to Django, is a web framework and could be described as its baby brother. Flask is much more lightweight, which makes it much easier to set up and get started, but doesn't come with all of the bells and whistles that a Django site might.

. . .

GUI

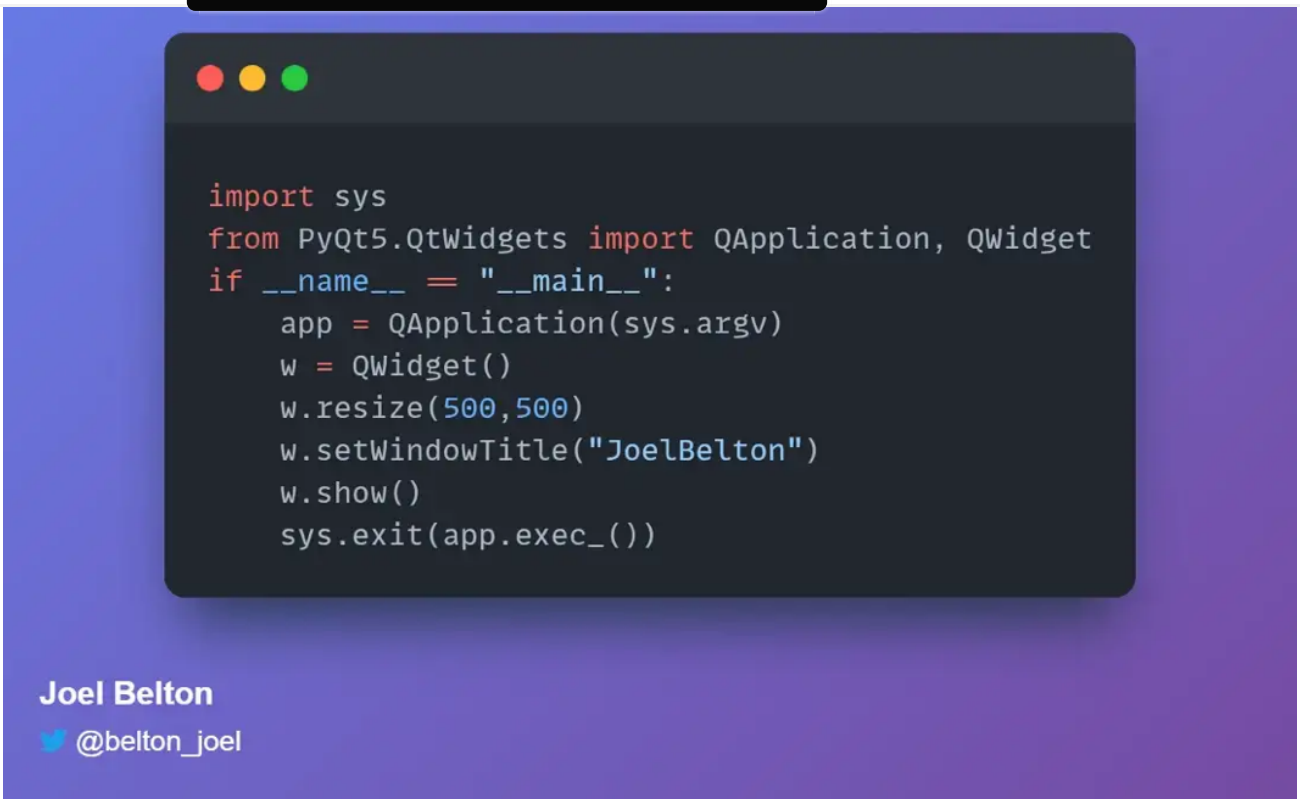
PyQt5

PyQT5 is a python implementation of the open source tool QT, which functions as a cross-platform application development framework. QT is a popular choice for writing GUI applications for any major platform.

PyQT5 goes beyond just GUI but also includes features such as:

- SQL Databases
- Web Toolkits
- XML processing
- Networking

In my opinion, it's the best GUI Option for Python due to its extensive feature set and allows for styling via CSS.



Example Simple empty window creation in PyQT5

> *Although PyQT5 is my personal favourite and recommendation, other GUI libraries are available such as: Tkinter, Kivy and PySide*

Data Science

Python is considered the most popular programming language for data scientists, with a market share of 65.6% as of 2018 (as per KDnuggets Software Poll 2018). It's easy to see why; it's an easy-to-use language which doesn't require a considerable background in coding and has an extensive library of tools and an active community. Here are two of my personal favourite libraries.

Pandas

Padas is unrivalled when working with data. It provides efficient and expressive data structures, which makes working with relational data easy

and intuitive. Pandas is used for real-world data analysis in Python and is well suited for many different types of data:

- Tabular via SQL or Excel Spreadsheets
- Ordered and Unordered lists / time-series data
- Matrix data
- Statistical and observation data sets.

Numpy

Numpy helps tremendously with mathematical operations in Python and allows you to work with multi-dimensional arrays very effectively.

> *NumPy n-dimensional arrays makes it extremely easy to perform mathematical operations on it*

Numpys huge advantage is speed and efficiency. It takes significantly less memory to store data in comparison to a Python List alternative and has the ability to create n-dimensional arrays. We can utilise Numpy to perform mathematical operations on these arrays, for example:

Performing Simple Mathematical Operation on NP Array.

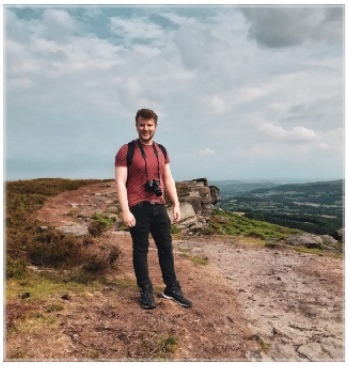
> *Other Top Data Science Libraries include Tensorflow, SciPy, Matplotlib, Keras, Pytorch and the previously mentioned Beautiful Soup for web scraping.*

. . .

Thanks for reading all, hope you've enjoyed. Check out my other articles below:

- Advanced Python — What are Metaclasses?

- 8 Advanced Git commands University won't teach you.
- 7 Advanced VIM Tips
- Modern Debugging — Tools and Tips you need to stay ahead
- 5 Most Effective Techniques for Container Security



Python | Software Development | Technology | Development | Dev Ops

---