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One of Python's greatest assets is its extensive set of libraries. Libraries are sets of routines and functions that are written in a given language. A robust set of libraries can make it easier for developers to perform complex tasks without rewriting many lines of code.



To start from scratch, you can look into this course on A Complete Tutorial to Learn Data Science with Python from Scratch on Analytics Vidya

The programmer should know about the following important libraries.

BASIC LIBRARIES FOR PYTHON

These are the basic libraries that transform Python from a general-purpose programming language into a powerful and robust tool for data analysis and visualization.

- 1. **NumPy** is the foundational library for scientific computing in Python, and many of the libraries on this list use NumPy arrays as their basic inputs and outputs. In short, NumPy introduces objects for multidimensional arrays and matrices, as well as routines that allow developers to perform advanced mathematical and statistical functions on those arrays with as little code as possible.
- 2. **Pandas** adds data structures and tools that are designed for practical data analysis in finance, statistics, social sciences, and engineering. Pandas works well with incomplete, messy, and unlabeled data (i.e., the kind of data you're likely to encounter in the real world), and provides tools for shaping, merging, reshaping, and slicing datasets.
- 3. **matplotlib** is the standard Python library for creating 2D plots and graphs. It's pretty low-level, meaning it requires more commands to generate nice-looking graphs and figures than with some more advanced libraries. However, the flip side of that is flexibility. With enough commands, you can make just about any kind of graph you want with matplotlib.
- 4. SciPy builds on NumPy by adding a collection of algorithms and high-level commands for manipulating and visualizing data. This package includes functions for computing integrals numerically, solving differential equations, optimization, and more.

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Libraries for Machine Learning

Machine learning sits at the intersection of Artificial Intelligence and statistical analysis. By training computers with sets of real-world data, we're able to create algorithms that make more accurate and sophisticated predictions, whether we're talking about getting better driving directions or building computers that can identify landmarks just from looking at pictures. The following libraries give Python the ability to tackle a number of machine learning tasks, from performing basic regressions to training complex neural networks.

Related Ouestions

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and classification. As a library, scikit-learn has a lot going for it. Its tools are welldocumented and its contributors include many machine learning experts. What's more, it's a very curated library, meaning developers won't have to choose between different versions of the same algorithm. Its power and ease of use make it popular with a lot of data-heavy startups, including Evernote, OKCupid, Spotify, and Birchbox.

2. TensorFlow - is another high-profile entrant into machine learning, developed by Google as an open-source successor to DistBelief, their previous framework for training neural networks. TensorFlow uses a system of multi-layered nodes that allow you to quickly set up, train, and deploy artificial neural networks with large datasets. It's what allows Google to identify objects in photos or understand spoken words in its voice-recognition app.

LIBRARIES FOR PLOTTING AND VISUALIZATIONS

The best and most sophisticated analysis is meaningless if you can't communicate it to other people. These libraries build on matplotlib to enable you to easily create more visually compelling and sophisticated graphs, charts, and maps , no matter what kind of analysis you're trying to do.

- 1. Seaborn -is a popular visualization library that builds on matplotlib's foundation. The first thing you'll notice about Seaborn is that its default styles are much more sophisticated than matplotlib's. Beyond that, Seaborn is a higher-level library, meaning it's easier to generate certain kinds of plots, including heat maps, time series, and violin plots.
- 2. Bokeh makes interactive, zoomable plots in modern web browsers using JavaScript widgets. Another nice feature of Bokeh is that it comes with three levels of interface, from high-level abstractions that allow you to quickly generate complex plots, to a low-level view that offers maximum flexibility to app developers.

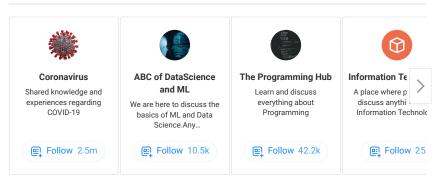
Do you have any questions?

Hope this helps you to know why python is a first choice for data science. If you still want guidance you can message me. I will help you with your doubts.

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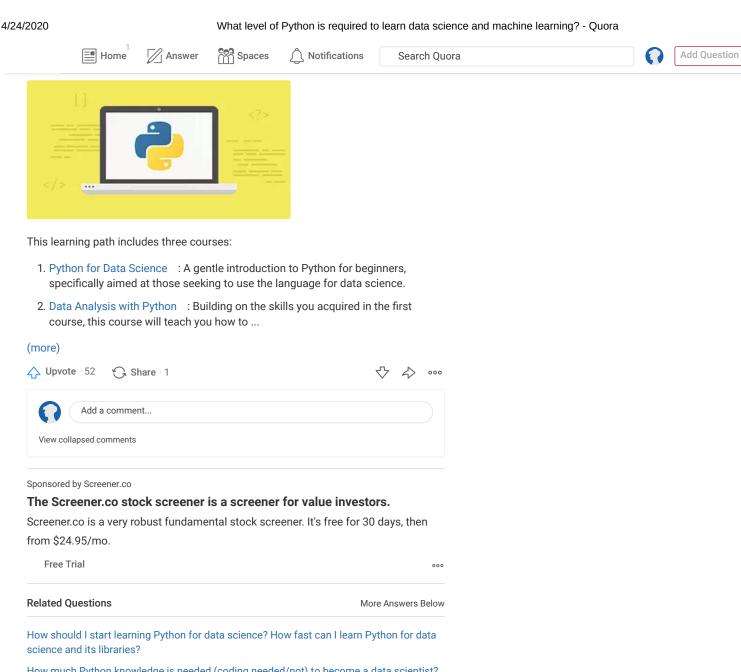


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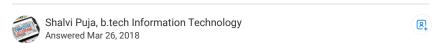
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How much Python knowledge is needed (coding needed/not) to become a data scientist?

How much time do I need to learn Python data science?



Programming is an essential skill to become a data scientist but one need not be a hard-core programmer to learn data science. Having familiarity with basic concepts of object oriented programming like C, C++ or Java will ease the process of learning data science programming tools like Python and R. These basic concepts of programming should help a candidate get a long way on the journey to pursue a career in data science as data science is all about writing efficient code to analyse big data and not being a master of programming





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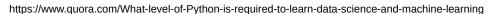




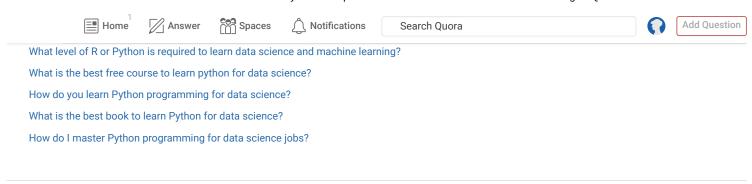








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