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The Competition

Let's take a deeper dive into some of the features in Python's competitors:

R

R is the frontrunner for "official language of data science." R is a free, open-source language that is extremely popular, and there's a large community of developers building software around it. R was also developed specifically for complex statistical analysis, and it has a great community.

Python, by contrast, was not built for data science specifically — it is a programming language. Many of the libraries we use to conduct data science work in Python use features that were borrowed or ported over from R.

So wait, why aren't we learning R instead? A few reasons. R is adept at working with complex data sets and statistical analyses, but its syntax can be a bit clunky and hard to work with. While it does have some cool visualization capabilities in libraries like R Shiny, it is not commonly used all the way through development to create a final data science product. Python, on the other hand, can be used from start to finish, which is one of the reasons it has become so popular.

SQL

SQL stands for "structured query language." It's not actually a programming language at all; however, we're including it here because it is an essential tool for any capable data scientist. SQL is most commonly used in database creation, administration, and data mining. As a data practitioner, you'll likely use SQL in conjunction with tools like Python in your daily work.

Java

Java is a language that often takes over for R when building a system or large framework. It's extremely powerful and used in a variety of applications. Java also makes up the foundations of big data programs like Hadoop and Hive, which are used to help efficiently process large data sets.

Why learn Python instead of Java? Python has a much simpler learning curve. Java code is written in a machine-operable manner, meaning that you must spend time defining every item used. Python streamlines this process and lets you change your variables as you go. While Java

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