

BRIEF

Working title: What is Python used For?

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Brief:

We would like an article outlining some of the common uses of Python (a list of 5-10) and why someone should learn it. Please cover:

- What is Python?
- Why is Python so popular?
- Why learn it/how long it takes
- Python uses
 - ◆ AI/ML
 - ◆ Data analysis
 - ◆ Visualization
 - ◆ Web development
 - ◆ Automation/scripting
 - ◆ Software testing
 - ◆ Any others you think are relevant
- What jobs need Python? (a brief list)

Feel free to organize the blog in the way you feel would be most helpful for the reader. Include the points you deem necessary to provide the reader with a good foundational understanding of the topic. The blog should be accessible for aspiring data scientists.

Please incorporate internal and external links, relevant DataCamp tutorials, blog, courses, or career tracks in your article wherever relevant, including:

- [Python Course, Online Crash Course in Python Fundamentals | DataCamp](#)
- <https://www.datacamp.com/courses/introduction-to-data-science-in-python>
- <https://www.datacamp.com/courses/introduction-to-statistics-in-python>
- <https://www.datacamp.com/courses/writing-efficient-python-code>
- <https://www.datacamp.com/blog/all-about-python-the-most-versatile-programming-language>
- <https://www.datacamp.com/blog/how-to-learn-python>

Guidelines to follow for your article:

- This blog should be of 1500–2000 words to make sure the topic is covered from all angles. This doesn't mean that every paragraph should be incredibly long. A few sentences are enough to ensure readability
- Visual aids, infographics are encouraged for optimal user engagement.
- Provide an outline for approval (or at least a more detailed plan of action) and only then proceed to writing the article.
- On the topic of readability, make sure the content is broken down into clear headings and that bulleted/numbered lists are used wherever possible, especially when answering a question.

Only 1 H1 per document for the title. Major sections should be labeled with H2, subsections with H3 and so forth.

- Be sure all images include an alt text. This can be done in google docs by right clicking on the image and selecting "alt text"
- Please create and share your completed draft in Google Docs.
- **Please create an FAQ section at the end**

Other things to keep in mind:

- Check out the specifics and recommend the specific courses where relevant.
- Do include Images, Infographics and visualizations where appropriate.
- On keyword usage - no need for over repetitions, but make sure you're using the terms in H1 and some H2s/H3s

Reference articles:

These articles currently rank at the top of search and we want to create content that's better than these:

- <https://www.coursera.org/articles/what-is-python-used-for-a-beginners-guide-to-using-python>
- <https://www.futurelearn.com/info/blog/what-is-python-used-for>

Due date: July 4, 2022

SEO keywords:

Please make sure to use these throughout your content, as well as in relevant H1s/H2s/FAQs etc.

Keyword	Global Monthly Search Volume	Keyword difficulty

DRAFT

What is Python Used For? A Guide for Beginners



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- [Is Python worth learning in 2022?](#)
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Python is currently (as of June 2022) [the most popular programming language in the world](#), and its user base is constantly growing. But what is Python used for? Many industries and companies use Python for a wide range of tasks, such as analyzing data, building machine learning models, creating websites, or programming software.

In this article, we're going to explore the main Python uses, the reasons why Python is so popular, why you should learn it, and how long it would take. We also explore what jobs usually need Python programming skills.

What is Python?

Technically speaking, Python is an open-source, object-oriented, high-level, general-purpose programming language. Since this definition may look overwhelming, let's take a look at each characteristic separately to understand what each of them means:

- *Open-source*: it's free and available for further improvements, like adding helpful features or fixing bugs
- *Object-oriented*: based not on functions but objects with defined attributes and methods
- *High-level*: human-friendly rather than computer-friendly
- *General-purpose*: can be used to create any kind of programs

Python is extensively applied in data science, data analysis, machine learning, data engineering, web development, software development, and other fields.

To learn more about [what Python is](#), you can find our blog article on the fundamentals of this popular language.

Why is Python So Popular?

Let's now discuss the major advantages that make Python such a powerful and widely-used programming language:

- It has an intuitive syntax that resembles a natural English language and hence is **easy to learn**, especially for people who are just entering the world of programming
- Because of its human-friendly syntax, it's **easy to write, read, and debug**

- It provides an **extensive standard library** and a wide choice of well-documented and comprehensive **additional libraries and modules**
- It's **free** both for individuals and businesses
- Thanks to its **huge supporting community**, Python is constantly developed, improved, and expanded
- It can be integrated into any project and used for **solving advanced problems**
- Being a general-purpose language, it has various **applications in many spheres**

Why Learn Python?

The benefits of knowing and using Python clearly show why it's a great choice for learning, especially as your first programming language. However, why would you personally decide to learn it? Here are some reasons that can convince you more:

- It can open you numerous opportunities to start a new career in many fields, and we'll soon take a granular look at which ones exactly.
- It can become a handy supplementary tool for your current job. For example, using Python you can automate many monotonous tasks like renaming many files at once, converting files to another format, or creating and updating work reports.
- It can make you stand out from the crowd even when applying for job positions that don't require knowing Python directly, (e.g., you can check [here](#) an example of a business analyst job description template).
- Python-related professions are currently very well-paid and highly in-demand, and this trend is only going to grow in the future. If you need proof, just take any of the jobs mentioned in the [What Jobs Need Python?](#) chapter of this article and check the respective average salary on [Indeed](#) and job openings on [LinkedIn](#).
- Finally, being able to use Python you can do a lot of helpful or funny things for yourself, like scraping websites or creating bots. We'll discuss some other ideas further in this article.

How Long It Takes to Learn Python

How long would it take you to learn Python? Well, here, everything depends on your previous coding experience (or its absence, it's perfectly ok!), your goals, your motivation, and how much time you're ready to dedicate to your studies.

The good news is that even if you're a total beginner, you can [learn the fundamentals of Python](#) for any purpose in as few as 15 hours.

If you want to [learn the basics of Python for data science](#), or to [learn how to use it in statistics](#), or you already know Python but would like to [master writing the code efficiently](#), it will take you only about 4 hours.

If instead, you need a more structured and multi-faceted approach to your studies to [become a data analyst in Python](#), it can take you up to 32 hours. So it's up to you to choose what you will do with this language and [start learning](#).

What is Python Used For? 7 Python Uses

We already mentioned more than once in this article that Python has a lot of applications. So, let's see where exactly we can use Python in the real world.

1. Python for Data Analysis

Data has become a truly precious asset in any modern industry, and all the companies are interested in gathering, manipulating, and analyzing relevant data to extract meaningful business insights from it. And this is where Python goes beyond any competition.

This language is particularly valuable because, apart from its comprehensive standard library, it provides an impressive collection of additional modules designed specifically for analytical purposes.

The most famous Python libraries for conducting data analysis are [pandas](#) and [NumPy](#). These tools allow you to do almost everything with your data, such as cleaning and wrangling it, exploring statistics, or visualizing hidden trends in your data.

Apart from these two libraries, you can use plenty of others for various data-related tasks, such as data visualization, web scraping, or hypothesis testing.

2. Python for Data Visualization

They say that a picture is worth a thousand words, and this is what data visualization is used for. Data visualization is a stand-alone part of data analysis that helps us represent the information, whether raw or cleaned and transformed, in a more compelling and insightful form.

Here Python comes again into play, offering a wide spectrum of tools for visualizing the data. The most popular of them are [matplotlib](#) and, based on it, [seaborn](#). Using them, we can create literally all kinds of visualizations from simple ones (line plots, bar charts, histograms) to more advanced ones (animated plots, streamlines, cluster maps, joy plots, etc.). If you want to learn more on how to use these two libraries, you can follow these courses of DataCamp: [Introduction to Data Visualization with Matplotlib](#) and [Introduction to Data Visualization with Seaborn](#).

There are also a plethora of other graphical libraries in Python: both multipurpose (such as [Plotly](#), [Bokeh](#), or [Altair](#)) and more focused ones ([missingno](#) for visualizing missing values, [Toyplot](#) for creating interactive plots for electronic publishing, [GeoPandas](#) for building maps, etc.).

3. Python for Machine Learning

Machine learning (ML) is at the core of the majority of data science tasks. It represents a field of artificial intelligence (AI) concerned with using algorithms to enable machines to learn patterns and trends from historical data to make predictions on unknown data.

Using ML techniques, we can create models that can accurately [predict the customer churn rate](#) of the company, [estimate the risk of a person having a certain disease](#), [identify the optimal positioning of taxi vehicles](#), etc.

With Python, we can build an ML model using as few as three lines of code (see [an example of such a model for predicting fraudulent bank transactions](#)). Even though behind those few lines of code there are complex processes and calculations, Python ML libraries do the most of the work under the hood, which significantly facilitates the user's task. The most common libraries are [scikit-learn](#), [Keras](#), [TensorFlow](#), and [PyTorch](#).

4. Python for Software Development

Apart from its many-sided application in data science areas, Python is used at each stage of software development, including build control, automated continuous compilation, prototyping, bug tracking, testing, and software maintenance.

The flexibility and at the same time power of this programming language allows using it for creating both relatively simple and highly-advanced multi-protocol applications, or those that involve complex numeric computations.

With Python, we can build audio or video programs based on AI or ML techniques, APIs (application programming interfaces), GUIs (graphical user interfaces), or any other type of software.

5. Python for Web Development

While for building the front end of a website (the part of a website accessible to its users) we would mostly use the languages such as HTML, CSS, and JavaScript, for its back end (the invisible part of a website), we would often opt for Python.

For these purposes, Python is used for some common frameworks (like Django or Flask) with specialized built-in modules that enable sharing data with servers, processing information, accessing databases, URL routing, content management, and maintaining website security.

Among the giant websites and applications created using Python, it's worth mentioning Google, Facebook, Instagram, YouTube, Dropbox, and Reddit.

6. Python for Task Automation/Scripting

Python is a great tool for writing programs to automate different repetitive tasks. This process is also called scripting.

In particular, you can do scripting to work with files and folders. For example, you can create, rename, convert, split, merge, or delete files, check them for errors, duplicates, or a certain text patterns, or update the file content.

You can also use Python automation to search and download information from the internet, complete and submit online forms, and send regular notifications or emails.

Doing all these things manually, apart from being extremely boring, would be very time-consuming and error-prone. Using Python scripts to perform such actions in just minutes would significantly increase your efficiency and save you precious time and effort for more creative tasks.

7. Useful or Funny Python Uses

Besides all those "serious" implementations considered above, what else is Python used for? Below are some fresh ideas:

- Monitoring the stock market
- Web scraping
- Keeping updated a to-do list
- Creating bots
- [Generating lists of random names, colors, phone numbers, currencies, etc.](#)

Finally, you can enjoy Python for pure fun:

- [Converting text to ASCII art](#), like this: `☿ •`x•`?`
- [Randomly pairing Secret Santa gifters and recipients](#)
- [Generating ASCII art pictures of a selected animal with a message](#)
- [Playing chess](#)
- [Reading your horoscope](#)

and even

- [Using Tinder](#)

What Jobs Need Python?

Many professions need Python directly for their everyday work. Below, we've outlined what you can do with Python in a professional capacity:

- Data scientist
- Data analyst
- Data engineer
- Machine learning engineer
- Data journalist
- Data architect
- Full-stack web developer

- Back-end web developer
- Devops engineer
- Software engineer

In addition, some other jobs may require Python skills for conducting certain tasks, like analyzing data, automating repetitive tasks, or monitoring market behavior: business analysts, bankers, and scientists are just a few examples.

Choosing Python

To sum up, we discussed many things regarding the implementations of Python for solving different tasks. We learned what Python is and what the main pros of Python are that make it the most widely-used programming language in the world.

We explored the benefits of choosing Python and why to learn it, as well as how much time it can take. Finally, we found that Python can be used in many spheres for many applications, and that many specialists use it in their everyday work.

If you're interested in continuing the exciting journey of learning Python to broaden your career horizons, explore the exhaustive beginner-friendly online programs of the following skill and career tracks of DataCamp:

- [Python Fundamentals](#)
- [Python Programmer](#)
- [Data Analyst with Python](#)
- [Data Scientist with Python](#)

Frequently Asked Questions

- Why is Python so popular?

There are a few reasons, including:

- It's easy to learn, write, debug, and read due to its intuitive syntax
- It's free for everyone
- It provides an extensive standard library and many additional modules
- It's constantly developed, improved, and expanded
- It can be used for solving advanced problems in various fields.

- What are the main spheres of Python application?

Data science, data analysis, data visualization, machine learning, artificial intelligence, data engineering, web development, software development, and task automation.

- Is Python worth learning in 2022?

Definitely yes! The knowledge of Python can help you start a new well-paid and highly in-demand profession in many spheres, or it can become an additional tool for your current job or personal tasks. Python can also make you stand out from the crowd even when applying for jobs that don't require such skills directly.

- How long does it take to learn Python?

Approximately 4 to 100 hours, depending on your previous coding experience (or its absence), your goals, your motivation, how much time you're ready to dedicate to your studies, and what exactly you're going to do with this programming language.

- Is Python a good choice to learn for a beginner in coding?

Absolutely! Python has a beginner-friendly, intuitive syntax that resembles a natural language, and it also offers well-described and comprehensive libraries, so this language is really easy to learn and use. If you're a total beginner, you can find helpful [this skill track](#) on Python fundamentals.

- Is Python more preferred than R for solving data science tasks?

Yes, and it's recently becoming more popular because of its low entry barrier, simple syntax, vast supporting community, and the wide choice of multipurpose or narrowly specialized well-documented data science libraries that can be used for solving any complex task.

- What jobs need Python?

Data scientists, data analysts, data engineers, machine learning engineers, data journalists, data architects, full-stack web developers, back-end web developers, software engineers, DevOps engineers, business analysts, bankers, and scientists in different fields.

- How can I use Python for my personal needs?

For monitoring the stock market, automating reports, scraping websites, completing and sending online forms, updating a to-do list, creating bots, and generating random data of a certain category. You can also use Python for various funny tasks, like generating ASCII art text and pictures, playing chess, pairing Secret Santa gifts and recipients, reading your horoscope, or using Tinder.