Diploma in Python Programming

Why Python?

Summary Notes

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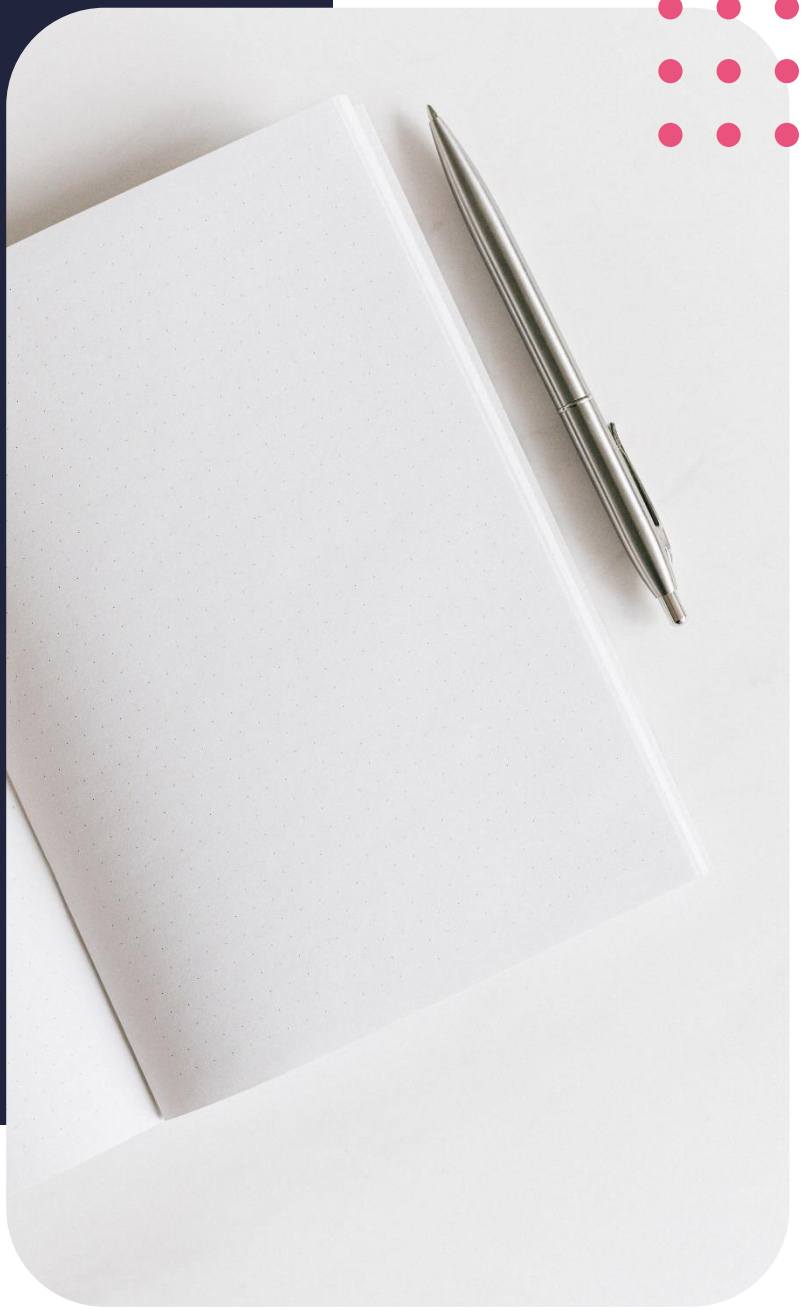


Why Python?

Python is a general-purpose interpreted, interactive, object-oriented, and high-level programming language. No need to panic, all these terms will be clearly explained as you make your way through the course. Python is free and open-source. The source code is also available under the GNU General Public License (GPL). The design philosophy of Python emphasises code readability, and its syntax is easy to read and allows programmers to express their concepts in fewer lines of codes compared to the C language.

Why learn Python?

Python is designed to be highly readable. It uses English keywords frequently whereas other languages use punctuation and has fewer syntactical constructs than other languages. Python is a must if you have an interest in becoming a data scientists or software engineer, specially when you are looking to work in Web development or Scientific Domains. Below is a list of some key advantages of programming in Python:

Python is interpreted: Which means it is processed at runtime by the interpreter.

Python is interactive: You can use a Python prompt to interact with the interpreter directly to write your program.

Python is Object-Oriented: With Object-Oriented Programming (OOP), complex problems can be divided into smaller sets by creating objects within a code.

Python is a beginner-friendly Language: It is more forgiving on errors, which makes it easier to debug the code.

Characteristics of Python

Python is a flexible and simple coding programming language, which can support different styles of programming including structural and object-oriented programming.

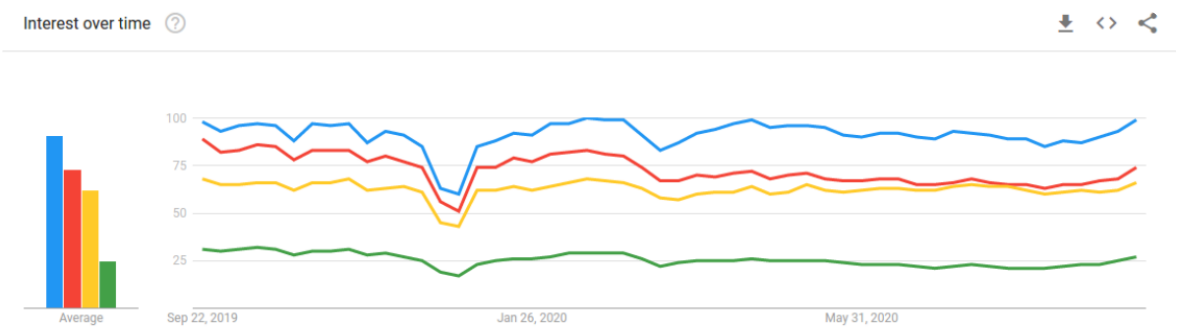
Here's a few important characteristics of Python Programming:

- It supports functional and structural programming methods as well as Object Oriented Programming.
- It can be used as a scripting language or it can be compiled to byte-code for building large applications.
- It supports automatic garbage collection. You do not have to worry about the daunting tasks such as memory management and garbage collection.
- It is extensible and embeddable. It can easily be integrated with C, C++, COM, Active X, COBRA, and Java programming languages to speed-up performance.
- Python has a few keywords, simple structure, and a clearly defined syntax. This makes it easy to learn.
- Python code is more clearly defined and brief on syntax which makes it easy to read.
- Python's source code is fairly easy-to-maintain.

Applications of Python

Python dominates a wide range of programming application areas. Below is a list of general application and use cases for Python:

- Python contains a broad standard library
- Interactive Mode
- Portable
- Python can be Extendable
- Databases
- Graphical User Interfaces (GUI) Programming
- Scalable



Platforms that use Python

There are a few well known scientific and business communities that use Python language for different functions. Here's a list of those communities.

- Google
- Bit Torrent
- Intel
- Cisco
- Seagate
- IBM
- NASA
- iRobot, and there are many more.
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Why is Python a good language?

The widely used criteria to evaluate this question is provided in section 3 and 4 of this lesson and they considered the following criteria points to evaluate the language:

- Stability
- Writability
- Reliability
- Appropriate Data structures
- Availability and cost
- Demand
- Community Support
- Operating Systems
- Extensions and Libraries available

Looking at the criteria points above; the points shows that Python language fits the bill to be the language that should be first taught above all other programming languages. Hence that is why Python is now becoming the most widely used language.

Python Growing Popularity and Communities

This section is about reviewing Python growing communities and popularities.

Stack Overflow Community

Stack Overflow is a programming Question and Answer (Q and A) platform for any programming language. If you are a beginner programmer, Stack Overflow site will become your most useful resource to learn not just Python language, but any programming language.

Meetup Community

Python has the 3rd largest Meetup community. Meetups are a good place to network and learn from experienced and fellow developers.

GitHub Community

GitHub is a platform that connects a huge community of programmers/developers from all corners of 5 the world, the platform is opensource and allows developers/programmers to share codes for free.

Python trend over the years

Analysis of users' activity time-series show an upward trend of Python users in 2014.

Reasons for Python Growing

Python syntax is easy to learn and many scientific and academic communities prefer using the language. Also, Python has a powerful Machine learning and Data-science libraries, which are Tensorflow and Scikit-learn.' activity time-series show an upward trend of Python users in 2014.

Future for Python

With an increasing interest and 7 focus in Machine learning and Big-Data around the world, there is also going to be an increase in people learning and adopting Python as their preferred language in these fields (Big-Data and Machine learning).

Career Opportunities in Python

Since the language is growing in its popularity, there is also an increase in jobs for Python Programmers. Here is a table below from an American international job's platform, which listed the often most sought-after programming language jobs for programmers.

Language	Jobs as of January 2019	Jobs as of September 2019
Java	65,986	70,880
Python	61,818	70,242
JavaScript	38,018	40,986
C++	36,798	39,217

Python Installation and simple script

Please refer to the lesson recording, available in your Shaw Academy profile on the "My Courses" section, to view the demos from this lesson.

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