Learn Python through the Master Guide – Python Notes for Beginner to Advanced Learners

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The best way to learn Python is to have an idea of what are the major sections to cover with possible background information. The same thing will happen when you learn Python programming language with DataFlair.

While you move from one Python topic to another, do take time to make notes and jot down information that you will require for the long-term. This has proven beneficial for users who are aiming to become a full-time developer.

This habit of making Python notes can help you plan your code before you move to the computer when you go for any small/big projects.

With these strategies, you are ready to learn Python. I’m providing the [***complete series of Python***](https://data-flair.training/blogs/python-tutorials-home/) and its resources so that you can have exposure to topics not listed here.

Learn Python Programming from Scratch

Python notes for beginners

* Introduction
* Syntax
* Statement, Indentation, and Comments
* Variables and Datatypes
* Operators
* Numbers
* Strings
* Data structure
* List
* Tuples

Python notes for intermediates

* Module
* Classes
* Methods
* Iterators
* Decorators
* Generators

Python notes for advanced learners

* Web framework
* Machine Learning
* Deep learning
* Artificial Intelligence
* Relational Database

These blogs are not supposed to be accessed and learned at once.

As suggested above, one can plan out the whole process to learn Python and then navigate through them according to their grasping capabilities and practice.

[](https://data-flair.training/blogs/wp-content/uploads/sites/2/2019/09/Learn-Python-with-notes.jpg)

Python Notes

Now, in these python notes, the first part is learning Python beginner-level topics

Learn Python Beginner Level Topics

Below is the list of Python topics for beginners that will help you to learn Python from scratch

1. Python basic tutorial

It covers a [***general introduction of the Python language***](https://data-flair.training/blogs/python-tutorial/)with its key features, architecture, and applications.

It will provide you with answers to questions like- why choose python and what its future holds.

***For further reference***  
[***-Features***](https://data-flair.training/blogs/features-python/)  
[***-Applications***](https://data-flair.training/blogs/python-applications/)  
[***-Future opportunities***](https://data-flair.training/blogs/python-career-opportunities/)

**WAIT! Is your Python setup ready to practice the concepts simultaneously? Still not????**

**Check out DataFlair’s 5Mins**[**Python Environment Setup Guide**](https://data-flair.training/blogs/install-python-windows/)**to start with**

2. Python syntax

Door to learn any language, not only technical but any language in general, one has to have strong command on its grammar.

Grammar in a technical scenario means syntax. It will demonstrate to you how [***Python’s syntax***](https://data-flair.training/blogs/python-syntax-semantics/)is different than Java and C++.

You will unfold the use of different identifiers and variables and also how they are different from each other.

3. Python statements, indentation and comments

As you are getting used to Python and its syntax, you can move forward with the next level of understanding, i.e. statements and indentation.

[Python](https://docs.python.org/3/tutorial/index.html) overall is not considered a strict language to follow, the only thing that is needed to be taken care of is the indentation. It increases its reliability and effectiveness.

Throughout the journey of learning Python, conditional statements like ‘if’, ‘for’, ‘while’ etc will be observed constructing the logical code for the given problem.

Whereas “Python comments” will be used for understanding the code written by the coder and make changes accordingly.

Hence good hold of “comments” might not help you in coding but will improve your presentation skills of the code when you present it in front of its target audience.

4. Python variable and datatypes

To give a general idea, we don’t specify the type of a variable when declaring one also there are some set of rules of naming a variable.

Although we don’t declare the type of data, a value certainly has a type that is previously known to the [***interpreter***](https://data-flair.training/blogs/python-interpreter/). It includes- integer, float, long, complex, etc.

5. Python Operators

It is responsible for performing various mathematical and logical operations in the code. The operand is a value on which the operation is performed.

7 main categories are present in which operands are divided for proper programming from- Arithmetic, Relational, Assignment, Logical, Bitwise, Comparison, Membership, Identity, etc.

So, in the journey of learning Python, [**Python Operators**](https://data-flair.training/blogs/python-operator/) play a major role.

6. Python Numbers

An entity that lets you measure something is termed as numbers.

It will allow you to dig a little deeper into the [***number types of Python***](https://data-flair.training/blogs/python-number-types-conversion/), i.e. int, float, complex numbers and so on.

Programmers often deal with numbers in binary, octal and hexadecimal, and their interconversion.

7. Python Strings

It will cover the [***general introduction of a string***](https://data-flair.training/blogs/python-string/) ( a sequence of characters ) and its examples. Also, look at Python string functions and their operations and how to access them.

8. Python Data Structures

[***Different data structures of python***](https://data-flair.training/blogs/python-data-structures-tutorial/) will be covered that includes list, tuple, set and dictionaries.

It is nothing but a way of organizing, storing, and accessing data.

According to their advantages and disadvantages, one can decide which data structure will be suitable.

9. Python List

How to create, access, slice and re-assign [***list in Python***](https://data-flair.training/blogs/python-lists-examples/) will be discussed. Also, how to apply functions to them by covering various operations and concatenation.

A general idea of the list will be provided in the Data structures, here you will come across a detailed study.

Learn how to delete or reassign elements or list and some built-in functions and methods.

10. Python Tuples

A deeper look than that of Data Structure material and insights of how to create, access, slice, delete [***tuples***](https://data-flair.training/blogs/python-tuples-syntax-examples/). Also, look into inbuilt functions, methods, and operations that can be called on a tuple.

Before moving forward to the next level of learn Python mission, do take a while to understand the building blocks of Python language.

You do not need to learn “all” the Python syntax before you start to do something interesting with it but you ***should have a good hold on the basics mentioned above***.

But don’t spend months on it, with practice and good revision plan one can easily grasp the concepts.

Learn Python Intermediate Level Topics

The next level in learn Python mission is the intermediate level. So, let’s start exploring Python notes –

1. Python Module

Learn about modules – how to create them, import modules in python, how can we execute module as a script, standard python modules, python dir functions and lot more!

Have a glance at packages vs modules section to get an idea of Packages too and their advantages and disadvantages over each other!

***No idea about Packages? Work it out here! –***[***Python Packages Guide***](https://data-flair.training/blogs/python-packages/)

2. Python Classes

It is nothing but a blueprint for objects. Explore more about how they work and access. Different attributes belonging to a [***python class***](https://data-flair.training/blogs/python-class/) with its objects is discussed.

As python is an object-oriented language, it focuses on objects more than procedures.

Though it is too much to take in, still have good hands-on these concepts as their understanding will help a lot later.

3. Python Methods

Much like functions, they are labels that you can call on an object; a piece of code to execute on that object.

At the end of it, you will know how to define and make use of \_init\_ method, and also a self parameter.

***Can’t differentiate between Functions & Methods? Refer here! –***[***Python Methods vs Functions***](https://data-flair.training/blogs/python-method-vs-function/)

4. Python Iterators

Create your own methods with [***Python Iterators***](https://data-flair.training/blogs/python-iterator/). Also, create ‘for loop’ in iterators, infinite python iterators, and benefits of iterators with examples.

After their complete understanding, they become handy and very interesting to use.

5. Python Decorators

What are they and why we use them, all here! Also, along with this, cover decorators with Parameters and Pie syntax.

Decorators, nothing but help add extra functionality to a function without modifying it.

6. Python Generators

[***Generators***](https://data-flair.training/blogs/python-generator/) are kind of iterators that generate for us a sequence of values that we can iterate on.

**Example:** Use it to iterate on a for-loop in python, but you can’t index it.

Before you start diving into the supreme and advance level of learn python mission, it’s good that you ask yourself ‘why you want to learn it?’

This is because Python has a ‘sea’ of applications and each one of them is in the growing stage.

Figuring out what actually you want to pursue will really help to find the end goal and set paths towards it.

Learn Python Advanced Level Topics

Ready to explore Python notes for advanced level topics? Let’s start with Python and web framework –

1. Python & Web-Framework

If web-development is the goal then python will provide help with a range of frameworks.

It includes a full-stack framework and a non-full stack framework.

It allows developers to write web applications and services without worrying about protocols or thread management.

**Example**: [Django](https://data-flair.training/blogs/python-django-tutorial/), [Flask](https://data-flair.training/blogs/python-flask-tutorial/), etc.

2. Python and Machine Learning

It aims to grant machines the ability to learn by using various techniques.

Data is used to learn from and make further predictions in various applications.

Python has a number of characteristics that make it the language to be chosen for Machine learning and its uses in the industry.

[***Python has a major contribution in Machine learning application***](https://data-flair.training/blogs/python-machine-learning-tutorial/)***. Know how!***

3. Python & Deep Learning

Discuss what exactly is [***deep learning***](https://data-flair.training/blogs/deep-learning-with-python-tutorial/) and why Python adds glory to it?

Also, see its uses in artificial neural networks and deep neural networks. Look into some deep learning applications and their analysis to the reason why Python?

4. Python and Artificial Intelligence

Starting with a general introduction then AI programming that will include problems, tools and approaches.

With the journey of AI, Natural language processing will be introduced with its components, libraries and its benefits.

We will also come across speech recognition and the NLTK toolkit with their components.

***Don’t forget to check the best tutorial on***[***Natural Language Processing***](https://data-flair.training/blogs/nlp-tutorial-natural-language-processing/)

5. Python and Relational Database

Learn to read CSV files, insert data into them, and delete data from them using simple query language-SQL.

Come across some important prerequisites of the Relational Database.

Pandas is one of the main Python libraries for data manipulation and analysis.

***For reference –***[***Python Pandas Library***](https://data-flair.training/blogs/pandas-tutorial/)

These resources are presented in a way that assists your journey of mastering Python.

There may be other possible ways too but this one was found to be very effective and promising as it serves well for mostly all kinds of users.

Summary

So, here completes our learn Python mission.

A constant need for learning is a requirement to master it to a larger extent. Working on the things that interest you will take you one notch higher than before.

Python is a very rewarding language and with its help, anyone can do wonders!

All you need to do is keep a constant check on what you already know and what new you need to add on to your skillset.