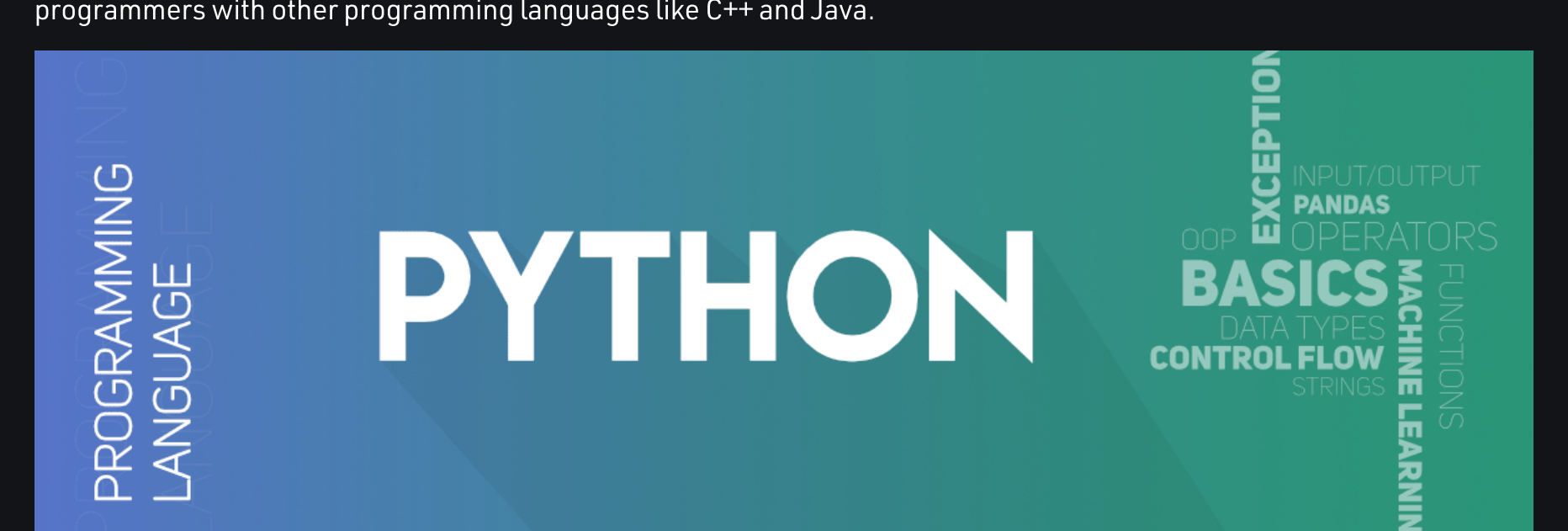
Introduction
- Python Programming Language
- Introduction To PYTHON
- Python Language advantages and applications
- Download and Install Python 3 Latest Version
- Python 3 basics
- Python Keywords
- Namespaces and Scope in Python
- Statement, Indentation and Comment in Python
- How to assign values to variables in Python and other languages

Input/Output
Operators
Types
Control Flow

Python Programming Language

Last Updated : 16 Jun, 2022

Python is a high-level, general-purpose and a very popular programming language. Python programming language (latest Python 3) is being used in web development, Machine Learning applications, along with all cutting edge technology in Software Industry. Python Programming Language is very well suited for Beginners, also for experienced programmers with other programming languages like C++ and Java.



This specially designed Python tutorial will help you learn Python Programming Language in most efficient way, with the topics from basics to advanced (like Web-scraping, Django, Deep-Learning, etc.) with examples.

Below are some facts about Python Programming Language:

1. Python is currently the most widely used multi-purpose, high-level programming language.
2. Python allows programming in Object-Oriented and Procedural paradigms.
3. Python programs generally are smaller than other programming languages like Java. Programmers have to type

Dropbox, Uber… etc.

5. The biggest strength of Python is huge collection of standard library which can be used for the following:
   - Machine Learning
   - GUI Applications (like Kivy, Tkinter, PyQt etc.)
   - Web frameworks like Django (used by YouTube, Instagram, Dropbox)
   - Image processing (like OpenCV, Pillow)
   - Web scraping (like Scrapy, BeautifulSoup, Selenium)
   - Test frameworks
   - Multimedia
   - Scientific computing
   - Text processing and many more..

Recent Articles on Python !
Python Programming Examples
Python Output & Multiple Choice Questions

Basics, Input/Output, Data Types, Variables, Operators, Control Flow, Functions, Object Oriented Concepts, Exception Handling, Python Collections, Django Framework, Data Analysis, Numpy, Pandas, Machine Learning with Python, Python GUI, Modules in Python, Working with Database, Misc, Applications and Projects, Multiple Choice Questions

Python Tutorial –

Python Basics

- Python language introduction
- Python 3 basics
- Python The new generation language
- Important difference between python 2.x and python 3.x with example
- Keywords in Python | Set 1, Set 2
- Namespaces and Scope in Python
- Statement, Indentation and Comment in Python
- Structuring Python Programs
- How to check if a string is a valid keyword in Python?
- How to assign values to variables in Python and other languages
- How to print without newline in Python?
- Decision making
- Basic calculator program using Python
- Python Language advantages and applications

Input/Output

- Taking input in Python
- Taking input from console in Python
- Taking multiple inputs from user in Python
- Python Input Methods for Competitive Programming
- Vulnerability in input() function – Python 2.x
- Python | Output using print() function
- How to print without newline in Python?
- Python | end parameter in print()
- Python | sep parameter in print()
- Python | Output Formatting

Data Types

- Introduction to DataTypes
- **Strings**
- **List**
- **Tuples**
- **Sets**
- **Dictionary**
- **Arrays**

Variables

- Variables, expression, condition and function
- Maximum possible value of an integer in python?
- Global and local variables in python
- Packing and unpacking arguments in python
- Type conversion in python
- Byte objects vs string in python
- Print single and multiple variable
- Swap variable
- Private variables
- __name__ (A Special variable) in Python

Operators

- Basic operator in python
- Logical and bitwise not operator on boolean
- Ternary operator
- Division operator in python
- Operator Overloading in Python
- Any & all in python
- Inplace and standard operators in python
- Operator function in python | Set – 1
- Inplace operator | Set -1
- Logic Gates in Python
- Python | a += b is not always a = a + b
- Difference between == and is operator in Python
- Python Membership and Identity Operators | in, not in, is, is not

Control Flow

- Loops
- Loops and Control Statements (continue, break and pass) in Python
- Looping technique in python
- range vs xrange on python
- Programs for printing pyramid technique in python
- Chaining comparison in python
- else with for
- switch function
- Using iteration in python effectively
- Python Itertools
- Python __iter__() and __next__() | Converting an object into an iterator
- Python | Difference between iterable and iterator
- Generators in python
- Generators expression in python

Functions

- Functions in Python
- class method vs static method in Python
- Write an empty function in Python – pass statement
- Yield instead of Return
- Return Multiple Values
- Partial Functions in Python
- First Class functions in Python
- Precision Handling
- *args and **kwargs
- Python closures
- Function Decorators
- Decorators in Python
- Decorators with parameters in Python
- Memoization using decorators in Python
- Help function in Python
- Python | __import__() function
- Python | range() does not return an iterator
- Coroutine in Python
- Python bit functions on int (bit_length, to_bytes and from_bytes)

Object Oriented Concepts

- Python3 Intermediate Level Topics
- Class, Object and Members
- Data Hiding and Object Printing
- Inheritance, examples of object, issubclass and super
- Polymorphism in Python
- Class and static variable in python
- Class method and static method in python
- Changing class members
- Constructors in Python
- Destructors in Python
- First class function
- Metaprogramming with metaclasses
- Class and instance attribute
- Reflection
- Garbage collection

Exception Handling

- Exception handling
- User defined Exception
- Built-in Exception
- clean up action
- Nzec error
- try and except in Python

Python Collections

- Counters
- OrderedDict
- Defaultdict
- ChainMap
- NamedTuple
- DeQue
- Heap
- Collections.UserDict
- Collections.UserList
- Collections.UserString

Django Framework

- **Django Tutorial**
- Django Basics
- Django Introduction and Installation
- Django Forms
- Views In Django
- Django Models
- Django Templates
- ToDo webapp using Django
- Django News App
- Weather app using Django

Data Analysis

- Data visualization using Bokeh
- Exploratory Data Analysis in Python
- Data visualization with different Charts in Python
- Data analysis and Visualization with Python
- Data Analysis & Visualization with Python | Set 2
- Math operations for Data analysis
- Getting started with Jupyter Notebook | Python

Numpy

- **Python Numpy**
- Numpy | ndarray
- Numpy | Array Creation
- Numpy | Data Type Objects
- Data type Object (dtype) in NumPy
- Numpy | Indexing
- Numpy | Basic Slicing and Advanced Indexing
- Numpy | Iterating Over Array
- Numpy | Binary Operations
- Numpy | Linear Algebra
- Numpy | Sorting, Searching and Counting

Pandas

- Pandas Tutorial
- Python | Pandas DataFrame
- Creating a Pandas DataFrame
- Dealing with Rows and Columns in Pandas DataFrame
- Indexing and Selecting Data with Pandas
- Boolean Indexing in Pandas
- Conversion Functions in Pandas DataFrame
- Iterating over rows and columns in Pandas DataFrame
- Working with Missing Data in Pandas
- Python | Pandas Series
- Data analysis using Pandas
- Read csv using pandas.read_csv()

Machine Learning with Python

- **Machine Learning Tutorial**
- Linear Regression
- Understanding Logistic Regression
- K means Clustering
- Python | Image Classification using keras
- creating a simple machine learning model
- Python | Implementation of Movie Recommender System
- ML | Boston Housing Kaggle Challenge with Linear Regression
- Cancer cell classification using Scikit-learn
- Saving a machine learning Model
- Applying Convolutional Neural Network on mnist dataset
- Python | NLP analysis of Restaurant reviews
- Learning Model Building in Scikit-learn
- Implementing Artificial Neural Network training process
- A single neuron neural network in Python
- Python | How and where to apply Feature Scaling?
- Identifying handwritten digits using Logistic Regression in PyTorch

Python GUI

- Tkinter Tutorial
- Kivy Tutorial
- Python GUI – tkinter
- Simple GUI calculator using Tkinter
- Simple registration form using Tkinter
- Create a stopwatch using python
- Designing GUI applications Using PyQt
- Color game using Tkinter in Python
- Make Notepad using Tkinter
- Message Encode-Decode using Tkinter
- Real time currency convertor using Tkinter

Modules in Python

- Introduction of Modules
- OS module
- Calendar Module
- Python Urllib Module
- pprint
- Timit function
- Import module

Working With Database

- MongoDB and Python
- SQL using Python | Set 1
- SQL using Python and SQLite | Set 2
- SQL using Python | Set 3 (Handling large data)
- Inserting variables to database table using Python
- MYSQLdb Connection in Python
- Database management in PostgreSQL
- Oracle Database Connection in Python

Misc

- 10 Essential Python Tips And Tricks For Programmers
- Amazing hacks of Python
- Input method for comptetive programming
- Optimization Tips for Python Code
- Why import star in Python is a bad idea
- Why is python best suited for Competitive Coding?
- Python trics for Competitive Coding

Applications and Projects

- Python | Program to crawl a web page and get most frequent words
- Facebook login using python
- FB Chatting through python
- C/C++ code formating tool
- Find Live running status and PNR of any train using Railway API
- Fetching top news using News API
- Fetching text from Wikipedia's Infobox in Python
- Get emotions of images using Microsoft emotion API in Python
- Website blocker
- Send SMS updates to mobile phone using python
- Python Desktop News Notifier in 20 lines
- Morse Code Translator In Python
- Performing Google Search using Python code
- Reading and generating qr code
- Birthday reminder application in python
- Program to display Astrological sign or Zodiac sign for given date of birth
- Track bird migration
- News notifier
- whatsapp using python
- Python | Automating Happy Birthday post on Facebook using Selenium
- Design a Keylogger in Python
- Python | Implementation of Movie Recommender System

Recommended Python Tutorials

- Python Tutorial
- Machine Learning Tutorial
- Django Tutorial
- Pandas Tutorial
- OpenCV Python Tutorial
- Selenium Python Tutorial
- Python Tkinter Tutorial

GeeksforGeeks Courses

Python Programming Foundation – Self Paced Course

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