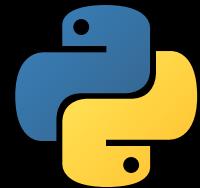# DPCA

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PYTHON

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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

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- 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

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- 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

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THANKS!

Do you have any questions?

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