



Python Development and DataScience (5 Days)

Prerequisite:

This course is for the intermediate to Advance level participants. The participants should know basic Python programming language. Prior familiarity with some other programming language (such as Java or C++) would be useful, but it is not mandatory for audience.

The course coverage and pace would vary slightly, depending on the composition of the batch. If the training is for participants who are already familiar with some other object-oriented programming language, such as C++ or Java, the initial parts covering the basic language constructs as well as introduction to the OO concepts could be completed faster, and more time could be spent on some of the advanced aspects of the course.

If the training is for a batch of participants who are new to any programming language, then even the basic language constructs would require more detailed explanation and practice work, and coverage of some of the later, advanced topics would be curtailed.

Lab Setup:-

Computer with the following software

Operating System: Red Hat Linux / Ubuntu/CentOS/ Windows (Latest Version preferable)

Anaconda python 3.7 (Latest Version preferable)

<https://www.anaconda.com/download>

Python 3.7 version *

Set Up Python Path Environment on OS (During Installation). [Shortest Path]

Internet Access will be needed to install python third party library

Hardware :

RAM: Minimum 4GB / 8GB (Recommended).

Internet Connectivity. (Needed to Install Packages and Run Anaconda Server).

80 GB HDD.

Who can learn Python?

In short anyone.

Automation Engineers

Data analysts and scientist

Quality Analysts

System Administrator

Web Developers, Networking Professionals

Softwares Developers

Hadoop programmers, Desktop Applications



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Robotics Engineers, Hardware level developers
And Many Many More ...

Day	Module	Session	Topics
Day 1	Module 1	Morning	Introduction to Python Why Python? Where? Anaconda Installation and Configuration
	Module 2	Morning	Mutable and Immutable Objects
	Module 3	Morning	Basic Language Construct Object Type/ Memory Management
	Module 4	Afternoon	Control Structure Indentation If elif Construct for, while loop with examples
Day 2	Module 5	Morning	Functions with *arg and **kwarg lambda, filter, map, reduce, set, enumerate, sorted, reversed, range, xrange, zip, sum, max, min Assignment and Group Activities
	Module 6	Morning	Data Structures List Comprehension & Dictionary Comprehension
	Module 7	Afternoon	Modules Importing Types, Creation and Accessing os, sys, system, random, glob etc.



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Day 3	Module 8	Afternoon	Object Oriented Programming self, Class Variable and Object Variables Use of super keyword Overriding, private data, Inheritance etc Application Development using Object Oriented Programming
	Module 9	Afternoon	Files, using with, readlines and writelines Assignment
	Module 10	Afternoon	Exception Handling User Defined Exception using raise
Day4	Module 11	Morning	Data Science Introduction
	Module 12	Morning	Data Scientist, Application of Data Science
	Module 13	Morning	Numpy Array Creation using List, Arange, ones, Zeros etc. Array Manipulation Array Data Types and Dimension Reshape Array Array Slicing
	Module 14	Afternoon	Numpy Matrix Manipulation
	Module 15	Morning	Pandas Series Dataframe
Day5	Module 16	Morning	Pandas Case Study using datasets
	Module 17	Morning	Reading CSV and Excel File using Pandas



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	Module 18	Afternoon	Data Frame Manipulation Matplotlib
	Module 19	Afternoon	Real Time Case Study using numpy, pandas, matplotlib <ul style="list-style-type: none">• Descriptive Statistics• Informative Statistics• Data Cleaning• Mean Value• Standard deviation• Correlation• Outlier
	Module 20	Afternoon	Group Summary