

Title: Adv. Python, WebScraping, DataScience_Testing_SVN Duration: 10 days

Program objectives

Some of the key skills you will gain upon completion of this program include:

- Basic Language Syntax
- Object Oriented Features in Python
- Exception Handling
- Regular Expression
- Working with inbuilt database support (SQLite)
- Itertools and Collections framework
- Threading
- Python Decorators
- Socket Programming
- Web Crawling
- Introduction to Crawling
- Lxml and Beautiful soup
- Firebug and Usage of developer tools under chrome and firefox
- Extracted data into Mongo DB and pymongo Integration
- Writing data into JSON file
- Usage of Scrapy Middlewares
- Introduction to Selenium Web framework
- Introduction to SVN

Prerequisite

This course is for Intermediate to Expert Level Developers. The participants should have prior exposure to Basic Python programming language.

Audience

For whom Python is?

IT folks who want to excel or change their profile in a most demanding language which is in demand by almost all clients in all domains because of below mentioned reasons-

Who use Python?

- Google makes extensive use of Python in its web search system, and employs

Python's creator Guido van Rossum.

- The YouTube video sharing service is largely written in Python.
- Disney uses Python in many of their creative processes.
- Mozilla uses Python to explore their extensive code base and releases tons of open source packages built in python.
- Dropbox file hosting service is implemented using Python, Guido van Rossum now working here.
- The popular Bit Torrent peer-to-peer file sharing system is a Python program.
- Intel, Cisco, Hewlett-Packard, Seagate, Qualcomm, and IBM use Python for hardware testing.
- JPMorgan Chase, UBS, Getco, and Citadel apply Python for financial market forecasting.
- NASA, Los Alamos, JPL, use Python for scientific programming tasks.
- iRobot uses Python to develop commercial robotic vacuum cleaners.
- The NSA uses Python for cryptography and intelligence analysis.
- And Many More.

Can I learn Python if I'm not from programming background?

Yes

Anyone can learn Python, whether they are from Networking, Administration, manual testing or may be from IT support. It is a big myth that if guys don't know C or C++ then he can't learn Python.

Few of them are specified at: <https://www.python.org/about/success/>

Who can learn Python?

In short anyone.

Automation Engineers

Data analysts and scientist

Quality Analysts

System Administrator

Web Developers, Networking Professionals

Software Developers
Hadoop programmers, Desktop Applications
Robotics Engineers, Hardware level developers
And Many Many More ...











Set up Requirements




















Computer with the following software
Operating System: Unix OS Ubuntu 16.04 / CentOS 7.0/ Window XP/Vista/7/8/10
python 2.7.13 on Anaconda Notebook Tools
Sublime3 Text Editor
Eclipse with pydev plugins (Recommended for Project Work)

Note: Training Session include 90 % Hands on Session and 10% Interactive Discussion

Day Wise Break Up

Day	Modules	Topics
Day 1	Module 1	Quick Overview to Python [Rapid Questions Round / Interactive Session] Dynamic Typing, Object Types Complex Object Type Operators Unbounded Integers Useful functions type() id() dir() help() chr() unichr()
	Module 2	Simple Program Using Basic Python Anaconda Installation Sublime Text Editor Python Project using Eclipse

	Module 3	<p>Basic Language Construct</p> <ul style="list-style-type: none"> ▪ Data types and Variables ▪ String type ▪ Format method ▪ Operators and Expressions ▪ Indentation
	Module 4	<p>Data Structures Mutable and Immutable Data Structures</p> <ul style="list-style-type: none">  ① List, Subscripting, Nested List  ① Tuple, Use cases  ① String Manipulation  ① Dictionary with Case Study  ① Use Cases and Assignment
	Module 5	<p>Control Structure</p> <ul style="list-style-type: none">  ① Indentation  ① if elif else  ① while  ① for (nested)  ① Use Cases and Assignments <p>Assignments Rapid Questions Round / Quiz Conclusion and Summary</p>

Day 2	Module 6	<p>Functions</p> <p>User Define Functions</p> <ul style="list-style-type: none">  ① global variable  ① default arguments  ① variable arguments *arg  ① Multiple Variable Default Argument  ① **kwarg  ① Use Case Design Multiplier <p>Sequence Operation using</p> <ul style="list-style-type: none">  ① lambda  ① filter  ① map  ① reduce  ① sum/max/min  ① set  ① enumerate  ① sorted  ① reversed  ① range/ xrange <p>Operation Using</p> <ul style="list-style-type: none">  ① List /Tuple Comprehension  ① Dictionary Comprehension  ① Dictionary Use Case
	Module 7	<p>Modules</p> <p>User Define Modules</p> <p>Import Categories</p> <ol style="list-style-type: none"> 1) using import 2) using from <p>Built In Modules</p> <ol style="list-style-type: none"> 1) math 2) os 3) sys 4) random 5) pickle / Unpickle (Object Serialization) 6) json etc

	Module 8	Object Oriented Programming <ul style="list-style-type: none"> ▪ Classes and Objects ▪ The “self” keyword ▪ Methods and Attributes ▪ Constructor and Destructor ▪ Instance and static member ▪ Class Inheritance ▪ Built In Attributes ▪ __private ▪ public ▪ _protected ▪ Multiple Inheritance ▪ Locking Attributes ▪ Super keyword Assignments Rapid Questions Round / Quiz Conclusion and Summary
Day 3	Module 9	Files Objects and Methods open() read(), readlines() write(), writelines() tell() using with statements Use Case using File Handling
	Module 10	Exception Handling Built in Exceptions exceptions module User Define Exceptions

	Module 11	Regular expressions Pattern Writing Compiling Match/Search Group/Groups findall re.sub re.split Use Case using Regular Expression and Pattern Assignments Rapid Questions Round / Quiz Conclusion and Summary
Day 4	Module 12	File and Directory handling Fileinput glob Regular Expression Case Study for Extraction of Data from Multiple Files and Generating Reports
	Module 13	Itertools and Collections framework imap/ ifilter /izip Iterator file iteration using map Overriding iterator functions Generator yield Use Case of yield
	Module 14	Testing Testing Fundamental Types of Testing Unittest Framework Run Test Write Unittest.TestCase for Python Code

	Module 15	Python Debugging and Testing Use of pdb Calling pytest through python py.test py.test --pdb Assignments Rapid Questions Round / Quiz Conclusion and Summary
Day 5	Module 16	Threading Processes & Threads Threading Life Cycle Logging Demon Thread Thread Synchronization Real Time Case Study using Multithreading
	Module 17	Python Decorators Introduction Types of Decorators User Define Decorators <ol style="list-style-type: none"> 1) Write a Trace Decorators using Python and trace any functions or Class methods 2) Built in Decorators 3) @classmethod 4) @staticmethod 5) @property
	Module 18	Sockets Programming TCP/IP Sockets UDP Sockets Server and Client Program XML processing Assignments Rapid Questions Round / Quiz Five Days Conclusion and Summary

Day 6	Module 19	Web Crawling Introduction to Crawling Do's and Don'ts Approach Robots.txt and other legal compliances about Crawling Polite Crawling Lxml and BeautifulSoup with Requests module" urllib" urllib2
--------------	------------------	--

	Module 20	<p>Web Crawling</p> <p>Firebug and usage of developer tools under chrome and firefox</p> <p>Postman optional Xpath</p> <p>DataBase Mysql DB or MongoDB</p> <p>PyMongo Integration</p> <p>Assignments/ Practice for Participants</p> <p>Practice 1</p> <p>Native way of crawling and write the extracted data into file Youtube. Simple youtube channel page where to extract Image Title and any information that is available without navigation to next page theHindu</p> <p>Get the latest news heading and links No drill down crawling</p> <p>Practice 2 Write the extracted data from Practice 1 into database created locally Scrapy</p> <p>Practice 3 Youtube Extract the data using Scrapy framework Dump the extracted data into Mysql DB</p> <p>Practice 4 Extract data navigating to 2 levels</p>
--	------------------	---

Day 7	Module 21	JSON and Introduction to Selenium Writing data into JSON file Advanced concepts Introduce to Selenium
	Module 22	Selenium Frameworks Selenium installation on Python Introduction of any IDE for easy programming (like, Eclipse) Python Unit Test & Sample Python Selenium Frameworks Running Test cases & suites and obtaining results Selenium Webdriver API introduction
	Module 23	Webdriver Python Basic Programming with different Browsers Running Test cases & suites and obtaining results Case Study using Selenium Framework Conclusion and Summary

Day 8	Module 24	Introduction to DataScience for Web Scrapping Anaconda Qtconsole / Notebook / Spyder Numpy Hands On Session Pandas Hands On Session Matplotlib Hands on Session
	Module 25	Case Study / Mini Project IMDB Data Scrapping using following modules BeautifulSoup urllib2 numpy matplotlib matplotlib.pyplot pylab pandas
Day 9	Module 26	Scrapy Project Creating a new Scrapy project Writing a spider to crawl a site and extract data Exporting the scraped data using the command line Changing spider to recursively follow links

		Using spider arguments
	Module 27	Web Scraping With Scrapy and MongoDB Scrapy Project PyMongo Specify Data Create the Spider XPath Selectors Extract the Data Store the Data in MongoDB Pipeline Management Conclusion and Summary

Day 10	Module 28	<p><u>SVN Lifecycle</u></p> <p>Lifecycle of SVN</p> <p>Create Repository</p> <p>Checkout</p> <p>Update</p> <p>Perform Changes</p> <p>Review Changes</p> <p>Fix Mistakes</p> <p>Resolve Conflicts</p> <p>Commit Changes</p> <p>Tags and Branching</p> <p>Creating Tags</p> <p>Creating Branches</p> <p>Merging Branches</p> <p>Exercises</p> <p>Automate SVN Tasks using Python Scripting</p> <p>Assignments</p> <p>Rapid Questions Round / Quiz</p> <p>Ten Days Conclusion and Summary</p>
---------------	------------------	--