



Python Essentials and an Introduction to Data Science (Academic Edition)

Overview:

Python programming language helps one work quickly and integrate systems more effectively. You can learn to use Python and see almost immediate gains in productivity and lower maintenance costs. Python runs on Windows, Linux/Unix, Mac OS X amongst others, and has been ported to the Java and .NET virtual machines too. It is an amazing language – easy to learn, yet very powerful!

Python is free to use, even for commercial products, because of its OSI-approved open source license. This 2.5-day program is designed to introduce the audience to Python and covers much of the essentials with enough guidance for one to get started on their own on Python projects. We'll be using Python 2.x/3.x for this program.

We'll also be solving some interesting data science / machine learning related problems using Python !

Target Audience:

- Students with a basic understanding of programming and who is keen to learn Python

Pre-requisite

- Familiarly with programming

Takeaways:

- Good understanding of the Python language essentials and introductory data science

Delivery Method:

Instructor lead and hands on. The program has an emphasis on hands-on coding for almost every topic.

Program Contents:

Introduction to Python

1. Getting Started
 - a. Overview and understanding - Why are we here? Why Python!
 - b. Python Interpreter and Python Scripts
 - c. Basic Data types : Numbers, Strings, Booleans
 - d. Functions
 - e. Conditional Expressions
 - f. Modules and packages, using third party packages
 - g. Creating your own module/package
 - h. Scope
- More data types and Working with Data
 - a. Lists



- b. Tuples
- c. Sets
- d. Dictionaries
- Working With Files
 - Understanding character encoding, reading/writing text files
 - Binary files
 - Stream IO
- Regular Expressions – a quick glance
- Objects and Classes
 - a. State
 - b. Classes and Objects
 - c. Inheritance
 - d. Errors and Exceptions
- Other concepts/libraries to be covered on a need basis
- Data Science and Analytics : Understanding the theory
 - a. Machine learning
 - b. Natural Language Processing
 - c. Sentiment Analysis

We will solve a few Data Science problems to understand the applications

Duration: 3 days