

# Course contents for Python programming

## Course Objectives

- To understand why Python is a useful scripting language for developers.
- To learn how to design and program Python applications.
- Appreciate the value of experimentation
- Master the fundamentals to write structured code
- Explore Python's object oriented features

## Duration

The total duration for this course with the contents listed below is 5 days with 8 hours per day. However, the contents could be customized either by adding additional topics and/or removing few, the duration will change accordingly.

## Pre-Requisites

Knowledge of any programming language or scripting is a plus.

## Basics

1. Introduction to Python
2. Setup Environment
3. Syntax and creating scripts
4. Variables, Functions, Objects, Loops and Data types
5. File input/output
6. Introduction to Object Oriented Python
7. Classes, Instances, Attributes and Methods
8. Inheritance and Polymorphism
9. Exceptions
10. Object Serialization
11. Sample Project

## Advanced

1. Getting started with Spark and Python
2. Working with files, joins
3. Broadcast and accumulator variables

4. Spark UI
5. Manipulating data
6. Pyspark packages – SQL, streaming
7. Introduction to PyCharm and Installation
8. Pycharm settings and preferences
9. Create New project
10. Adding Packages
11. Navigation
12. Working with GitHub
13. Code quality, refactoring, debugging
14. Using test runner
15. Working with Databases
16. Creating web projects