

Python

Level 1 (Fundamentals)

1- An Introduction to Python

- A Brief History of Python
- Python Versions
- Installing Python
- Environment Variables
- Executing Python from the Command Line
- IDLE
- Editing Python Files
- Python Documentation
- Getting Help
- Dynamic Types
- Python Reserved Words
- Naming Conventions

2- Basic Python Syntax

- Basic Syntax
- Comments
- String Values
- String Methods
- The format Method
- String Operators
- Numeric Data Types
- Conversion Functions
- Simple Input and Output
- The % Method
- The print Function

3- Language Components

- Indenting Requirements
- The if Statement
- Relational Operators

- Logical Operators
 - Bit Wise Operators
 - The while Loop
 - break and continue
 - The for Loop
- 4- Collections
- Lists
 - Tuples
 - Sets
 - Dictionaries
 - Sorting Dictionaries
 - Copying Collections

Level 2 (Advanced)

- 5- Functions
- Defining Your Own Functions
 - Parameters
 - Function Documentation
 - Keyword and Optional Parameters
 - Passing Collections to a Function
 - Variable Number of Arguments
 - Scope
 - Functions - "First Class Citizens"
 - Passing Functions to a Function
 - Mapping Functions in a Dictionary
 - Lambda
 - Inner Functions
 - Closures
- 6- Modules
- Modules
 - Standard Modules – sys
 - Standard Modules – math
 - Standard Modules – time
 - The dir Function
- 7- Exceptions
- Errors
 - Run Time Errors
 - The Exception Model

- Exception Hierarchy
- Handling Multiple Exceptions
- Raise
- assert

8- . Input and Output

- Data Streams
- Creating Your Own Data Streams
- Access Modes
- Writing Data to a File
- Reading Data From a File
- Additional File Methods
- Using Pipes as Data Streams
- Handling IO Exceptions
- Working with Directories
- Metadata
- The pickle Module

9- Classes in Python

- Classes in Python
- Principles of Object Orientation
- Creating Classes
- Instance Methods
- File Organization
- Special Methods
- Class Variables
- Inheritance
- Polymorphism
- Type Identification
- Custom Exception Classe

10- Regular Expressions

- Simple Character Matches
- Special Characters
- Character Classes
- Quantifiers
- The Dot Character
- Greedy Matches
- Grouping
- Matching at Beginning or End
- Match Objects

- **Substituting**
- **Splitting a String**
- **Compiling Regular Expressions**
- **Flags**
- **View outline in Word**

