

About Python

Why we need to choose python?

- Python is an object oriented programming Language and server-side scripting language for Websites and Mobile apps, Data Science and Machine Learning.
- The main reason to prefer python is open source, simple easy, portable, extensible and build in libraries (Collections) and due to its genuineness and compressed syntax developers can express a concept comparing with other programming languages like Java, C#, etc.,

What we do using python?

- Python is a high level programming language so that human and machine can easily understand the coding in easy way.
- Python is used for developing desktop GUI applications, websites and web applications. It allows you to focus on core functionality of the application by taking care of any programmatic tasks and functions.

Applications of Python

- Web and Internet Development.
- Desktop GUI Applications.
- Science and Numeric Applications
- Software Development.
- Education.
- Database Access.
- Network Programming.
- Games and 3D Graphics.
- Ecommerce

Course Content

CHAPTER 1: INTRODUCTION

- What's python?
- Why do people use python?
- History
- What's python good and bad for?
- The compulsory features list
- Python portability
- Summary: why python?

CHAPTER 2: USING THE INTERPRETER

- How to Run the Python Script
- Configuration Details
- Using different IDE
- The Idle Interface
- Other Python Ideas
- Time To Start Coding
- Exercise and Lab Session 1

CHAPTER 3: TYPES AND OPERATORS

- A First Pass
- Numbers
- Dynamic Typing Interlude
- Sets
- Strings
- Lists
- Dictionaries
- Tuples
- General Object Properties
- Exercise and Lab Session 2

CHAPTER 4: BASIC STATEMENTS

- General Syntax Concepts
- Expressions
- Print
- If Selections
- Python Syntax Rules

- Documentation Sources Interlude
- Truth Tests
- While Loops
- Break, Continue, Pass, And The Loop Else
- For Loops
- Comprehensions And Iterations
- Loop Coding Techniques
- Comprehensive Loop Examples
- Basic Coding Gotchas
- Preview: Program Unit Statements
- Exercise and Lab Session 3

CHAPTER 5: FUNCTIONS

- Function Basics
- Scope Rules In Functions
- More On Global(And “Nonlocal”), Return and Argument Passing
- Special Argument Matching Modes
- Odds And Ends
- Generator Expressions And Functions
- Function Design Concepts
- Functions Are Objects: Indirect Calls
- Function Gotchas
- Optional Case Study: Set Functions
- Exercise and Lab Session 4

CHAPTER 6: MODULES

- Module Basics
- Module Files Are A Namespace
- Name Qualification
- Import Variants
- Reloading Modules
- Package Imports
- Odds And Ends
- Module Design Concepts
- Exercise and Lab Session 5

CHAPTER 7: CLASSES

- Oop: The Big Picture
- Class Basics
- A More Realistic Example
- Using The Class Statement
- Using Class Methods
- Customization Via Inheritance
- Specializing Inherited Methods
- Operator Overloading In Classes
- Namespace Rules: The Whole Story
- Oop Examples: Inheritance And Composition
- Classes And Methods Are Objects
- Odds And Ends
- New Style Classes
- Class Gotchas
- Optional Case Study: A Set Class
- Summary: Oop In Python
- Exercise and Lab Session 6

CHAPTER 8: EXCEPTIONS

- Exception Basics
- First Examples
- Exception Idioms
- Exception Catching Modes
- Class Exceptions
- Exception Gotchas
- Exercise and Lab Session 7

CHAPTER 9: BUILT-IN TOOLS OVERVIEW

- The Secret Handshake
- Debugging Options
- Inspecting Name-Spaces
- Dynamic Coding Tools
- Timing And Profiling Python Programs
- File Types And Packaging Options
- Development Tools For Larger Projects
- Summary: Python Tool-Set Layers
- Exercise and Lab Session 8

CHAPTER 10: SYSTEM INTERFACES

- System Modules Overview
- Running Shell Commands
- Arguments, Streams, Shell Variables
- File Tools
- Directory Tools
- Forking Processes
- Thread Modules And Queues
- The Subprocess And Multiprocessing Modules
- Ipc Tools: Pipes, Sockets, Signals
- Fork Versis Spawnv
- Larger Examples
- Exercise and Lab Session 9

CHAPTER 11: DATABASES AND PERSISTENCE

- Databases and Persistence
- Create, Read, Update and Delete in Python Script
- CSV to Database
- Database to CSV
- Exercise and Lab Session 10

CHAPTER 12: TEXT PROCESSING

- Regular Expressions
- Search and match Functions
- Exercise and Lab Session 11

CHAPTER 13: INTERNET SCRIPTING

- Using Sockets In Python
- The Ftp Module
- Email Processing
- Other Client-Side Tools
- Building Web Sites With Python
- Writing Server-Side Cgi Scripts
- Lab Session 11