

1. OVERVIEW

- **History of Python**
- **Python Features**

2. ENVIRONMENT

- **Local Environment Setup**
- **Getting Python**
- **Installing Python**
- **Setting up PATH**
- **Setting path at Unix/Linux**
- **Setting path at Windows**
- **Python Environment Variables**
- **Running Python**

3. BASIC SYNTAX

- **First Python Program**
- **Python Identifiers**
- **Python Keywords**
- **Lines and Indentation**
- **Multi-Line Statements**
- **Quotation in Python**
- **Comments in Python**
- **Using Blank Lines**
- **Waiting for the User**
- **Multiple Statements on a Single Line**
- **Multiple Statement Groups as Suites**
- **Command Line Arguments**
- **Accessing Command-Line Arguments**
- **Parsing Command-Line Arguments**
- **getopt.getopt method**

4. VARIABLE TYPES

- **Assigning Values to Variables**
- **Multiple Assignment**
- **Standard Data Types**
- **Python Numbers**
- **Python Strings**
- **Python Lists**
- **Python Tuples**
- **Python Dictionary**
- **Data Type Conversion**

5. BASIC OPERATORS

- **Types of Operators**
- **Python Arithmetic Operators**
- **Python Comparison Operators**
- **Python Assignment Operators**
- **Python Bitwise Operators**
- **Python Logical Operators**
- **Python Membership Operators**
- **Python Identity Operators**
- **Python Operators Precedence**

6. DECISION MAKING

- **If Statement**
- **If...else Statement**
- **The *elif* Statement**
- **Single Statement Suites**

7. LOOPS

- **While Loop**
- **For Loop**
- **Loop Control Statements**
- **Break Statement**
- **Continue Statement**
- **Pass Statement**

8. NUMBERS

- **Number Type Conversion**
- **Random Number Functions**
- **Trigonometric Functions**
- **Mathematical Constants**

9. STRINGS

- **Accessing Values in Strings**
- **Updating Strings**
- **Escape Characters**
- **String Special Operators**
- **String Formatting Operator**
- **Triple Quotes**
- **Unicode String**
- **Built-in String Methods**

10. LISTS

- **Python Lists**
- **Accessing Values in Lists**
- **Updating Lists**
- **Deleting List Elements**
- **Basic List Operations**
- **Indexing, Slicing, and Matrixes**
- **Built-in List Functions and Methods**

11. TUPLES

- **Accessing Values in Tuples**
- **Updating Tuples**
- **Deleting Tuple Elements**
- **Basic Tuples Operations**
- **Indexing, Slicing, and Matrixes**
- **No Enclosing Delimiters:**
- **Built-in Tuple Functions**

12. DICTIONARY

- Accessing Values in Dictionary
- Updating Dictionary
- Delete Dictionary Elements
- Properties of Dictionary Keys
- Built-in Dictionary Functions and Methods

13. DATE AND TIME

- What is Tick?
- What is TimeTuple?
- Getting Current Time
- Getting Formatted Time
- Getting Calendar for a Month
- The *time* Module
- The *calendar* Module
- Other Modules and Functions

14. FUNCTIONS

- Defining a Function
- Calling a Function
- Passing by Reference Versus Passing by Value
- Function Arguments
- Required Arguments
- Keyword Arguments
- Default Arguments
- Variable Length Arguments
- The Anonymous Functions
- The return Statement
- Scope of Variables
- Global vs. Local variables:

15. MODULES

- The *import* Statement
- The *from*----- *import* Statement
- The *from*-----*import* * Statement:
- Locating Modules:
- The PYTHONPATH Variable
- Namespaces and Scoping
- The *dir()* Function
- The *globals()* and *locals()* Functions
- The *reload()* Function
- Packages in Python

16. FILES I/O

- Printing to the Screen
- Reading Keyboard Input
- The *raw_input* Function
- The *input* Function
- Opening and Closing Files
- The *open* Function
- The file Object Attributes
- The *close()* Method
- Reading and Writing Files
- The *write()* Method
- The *read()* Method
- File Positions
- Renaming and Deleting Files
- The *rename()* Method
- The *remove()* Method
- Directories in Python
- The *mkdir()* Method
- The *chdir()* Method
- The *getcwd()* Method
- The *rmdir()* Method
- File and Directory Related Methods

17. EXCEPTIONS

- What is Exception?
- Handling an Exception
- The *except* Clause with No Exceptions
- The *except* Clause with Multiple Exceptions
- The *try-finally* Clause
- Argument of an Exception
- Raising an Exception
- User-Defined Exceptions

COURSE OUTLINE-VI

-PYTHON

18. CLASSES AND OBJECTS

- Overview of OOP Terminology
- Creating Classes
- Creating Instance Objects
- Accessing Attributes
- Built-In Class Attributes
- Destroying Objects (Garbage Collection)
- Class Inheritance
- Overriding Methods
- Base Overloading Methods
- Overloading Operators
- Data Hiding

COURSE OUTLINE-VII

-PYTHON

19. REGULAR EXPRESSIONS

- The match Function
- The search Function
- Matching Versus Searching
- Search and Replace
- Regular-Expression Modifiers: Option Flags
- Regular-Expression Patterns
- Regular-Expression Examples
- Grouping with Parentheses

COURSE OUTLINE-VIII

-PYTHON

20. CGI PROGRAMMING

- What is CGI?
- CGI Architecture
- Web Server Support and Configuration
- First CGI Program
- HTTP Header
- CGI Environment Variables
- GET and POST Methods
- Passing Information using GET method:
- Simple URL Example : Get Method
- Simple FORM Example: GET Method
- Passing Information Using POST Method
- Passing Checkbox Data to CGI Program
- Passing Radio Button Data to CGI Program
- Passing Text Area Data to CGI Program
- Passing Drop Down Box Data to CGI Program
- Using Cookies in CGI
- Setting up Cookies and Retrieving Cookies
- File Upload Example

COURSE OUTLINE-IX

-PYTHON

21. DATABASE ACCESS

- What is MySQLdb?
- How do I Install MySQLdb?
- Database Connection
- Creating Database Table
- INSERT Operation
- READ Operation
- Update Operation
- DELETE Operation
- Performing Transactions
- COMMIT Operation
- ROLLBACK Operation
- Disconnecting Database
- Handling Errors

22. SENDING EMAIL

COURSE OUTLINE-X

-PYTHON

23. MULTITHREADING

24. XML PROCESSING

COURSE OUTLINE-XI

-PYTHON

25. TEXT MINING

COURSE OUTLINE-XII

-PYTHON

26. GUI PROGRAMMING

- -Tkinter Programming
- Tkinter Widgets

