

## PYTHON

### CORE PYTHON

- What is Python ?
- Uses of Python
- Features of Python

### PYTHON ENVIRONMENT

- Installation of Python
- Path Settings of Python
- Python Shell, Editors , IDLE's
- Basic Syntax
- Running Python Scripting
- Getting Started
- Language fundamentals
- Keywords
- Data types
- Static Data types Vs Dynamic Data types
- Collection Types
- Mutable Objects vs Immutable Objects
- Naming Conventions
- Print( ) , type( ) , id( ) functions
- Input( ) and Raw\_input( )
- Type conversion Function
- Del keyword

### STRING HANDLING

- What is String ?
- String-quoted String literals
- Triple-quoted String Literals
- String Indexing
- String Slicing
- Working with String Functions
- Working With String methods
- String multiplication

### OPERATORS

- Arithmetic Operators
- Relation Operations
- Logical Operations



### Our Courses

Java Full Stack, Dotnet Full Stack, Python Full Stack, Data Science (AI & ML), Front End – Angular, Front End – React, Testing, Tools – QA, Digital Marketing, Tally, MS Office, C & DS, Java, Advanced Java, Azure Devops, UI Technologies

- Assignment Operators
- Short hand Assignment Operators
- Membership Operators
- Bitwise Operators
- Identity Operators
- Evaluating expressions

## FLOW CONTROLS

- Conditional Statements
- Simple if
- If..else
- If..elif
- Looping Statements
- While Loop
- While..else
- For loop
- Using Range( ) in for loop
- Nested Loops
- Break Statement
- Continue Statement
- Pass Statement

## COLLECTIONS

- Introduction Of Collections
- List
- Tuple
- Set
- Dict
- Collection indexing and slicing
- Functions for all Collections
- Working with methods of Collections
- Nested Collections
- Implementation of SET operations
- Getting dictionary values
- Reading file data into a dictionary
- Counting with dictionary
- Difference between list , set and dictionary
- Sorting Collections

## FUNCTIONS

- Defining a function
- Calling function
- Types of arguments



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- Default arguments
- Non default arguments
- Keyword arguments
- Non keyword arguments
- Arbitrary arguments
- Return statement in function
- Handling returning values
- Global vs local variables
- Scope of global variables and local variables
- Call by values
- Call by reference
- Passing function to functions
- Lambda functions / anonymous Functions

## MODULES

- What is modules ?
- Types of Modules
- The import Statement
- Module Aliases / renaming a module
- From .. Input
- Reloading a module
- Dir( ) function
- Creating user defined module
- Command line arguments
- Working with pre defined standard modules( Math, Random,Datetime,Os,Sys,String....)

## PACKAGES

- Introduction of packages
- `__init__.py` file
- Defining packages
- Importing from packages
- Importing from sub packages

## EXCEPTION HANDLING

- Syntax Errors
- Runtime Errors
- What is an Exception ?
- Need of Exception Handling
- Predefined Exceptions
- Try, expect, and finally block
- Handling Multiple Exceptions
- Nested try, expect and finally blocks
- Named Exceptions

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- User defined Exceptions
- Raise Statements

## FILE HANDLING

- What is a file ?
- Opening a file
- Reading data from a file
- Writing Data into a file
- Closing a file
- Working with File Methods
- Working with directories

## ADVANCED PYTHON

- OOPS Concepts
- Why oops ?
- What is Difference Between POP and OOPS
- Encapsulations
- Defining Classes
- Creating an Objects
- Class variables and instance variables
- Constructors
- Defining methods
- Deference between function and methods
- Destructors
- Object reference count
- Object Garbage Collections



## INHERITANCE

- Types of inheritances
- Polymorphism (Overloading and Overriding)
- Super( ) statement
- Data hiding
- Built in properties of Class
- Inner Classes

## REGULAR EXPRESSIONS

- What is Regular Expressions
- Simple character matches
- Special character matches
- Quantifiers
- Grouping and Match Objects
- Match( ), search( ) and sub( )

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- Splitting a String
- Replacing Text

## DATABASE ACCESS

- What is Database
- Difference Between Files and Databases
- Difference Between DBMS and RDBMS
- Creating users and Granting Privileges
- SQL Commands
- Working with Stored Procedures
- Transaction Management

## MULTI THREADING

- Intro
- About multi Tasking
- Difference between Thread based multi tasking and Process Based Multi Tasking
- Defining Thread
- Starting Thread
- Thread safety using synchronization
- Joining of Threads
- Python iterators
- Python Generators
- PIP
- GUI Programming
- Data Analytics
- Pandas
- Numpy
- Matplotlib .....



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