PYTHON

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| TECHVISION  IT TRAINING AND PLACEMENT SERVICES |

(CORE- Programing Fundamentals)

**Course Duration:** 20+ hours (2-3 weeks regular, and 4-5 weeks weekend)

**Sessions:** Weekdays**;** Weekends

**Course Outline: Python Core Training**

**Module 1 - Why Python? & Installation of Python**

* Introduction of Python Programing
* Job Trends
* Areas where Python is used
* Companies using Python and Examples
* Compiled and Interpreted Languages
* Versions (2.7+ vs 3.0+)
* Available IDEs, Comparison
* Installation of Python, VSCode, Anaconda, and pyCharm
* IDLE and the interactive shell
* Running the script file (.py file)
* Reading Keyboard Inputs
* Input & print function

**Module 2 - Python Data Types & Operators**

* Variables
* Integer
* Float
* String
* Boolean
* List
* Tuple
* Dictionary
* Set
* Arithmetic Operators
* Relational Operators
* Logical Operators
* Examples and Hands-on

**Module 3 – Conditional Statement**

* If Statement
* If else Statement
* If elf …else /ladder if else
* Nested if else
* for Statement (range function)
* while Statement
* break and continue Statement
* pass keyword
* Nested loop

**Module 4 – List Operations & Methods**

* Print patterns using loop
* Series example using loop
* List Operations and method
* List index and slicer
* Tuple Operations and method
* Dict Operations and method
* Set Operations
* Dynamic list and two dimension list
* CRUD operation with list

**Module 5 – String Handling and Functions**

* String Function
* Len
* Upper
* Lower
* Title
* Count
* Strip
* Split
* List
* Endswith
* Slicer
* String operations

**Module 6 – User Defined Functions & Modules**

* Define and call to function
* Pass by Reference vs Value
* Functions Arguments (Required, Keyword,Default, Variable Length)
* Return statement
* Scope of Variables (Global vs Local)
* Anonymous (lambda) Functions
* Maps, filter, reduce
* Dictionaries in lambda

**Module 7 - Exception Handling, and Regular Expression**

* Standard Exceptions
* Assertions
* Handling
* Try-finally, except
* Raising an Exception

**Module 8 - Regular Expressions**

* What are Regular Expressions
* Matching Characters, Searching
* Compiling Regular Expressions
* Find all
* Search
* Ignore case vs normal search
* Repetition
* Emails Example
* Group Extraction

**Module 9 – File handling: Working with text files**

Python file handling: Perform Read operation

* Python open() file method
* Python file encoding
* Read(), readline(), readlines(), tell(), seek methods
* The close() file method
* Close operation in Python
* Auto close using ‘with’

Python file handling: Perform Write operation

* The write() file method
* Example: Read/Write to a File in Python

**Module 10 – OOPS & Classes**

* Classes and objects
* Constructor - Init function
* Destructor – del function
* Class vs Instance Variables vs Static Variables
* Inheritance
* Multiple Inheritance
* Overriding
* Tkinter
* Develop standalone application with Tkinter
* Tkinter widgets (button, label, entry, checkbox, radio)
* Button and other events

**Module 11 - Database Programming**

* SQL Server overview
* DDL (Create, alter, drop, truncate) statement
* DML (Insert, delete, update) statement
* Data type
* Where clause, Operator
* Order by
* Group by, aggregate function, having clause
* Top/limit, distinct
* Union and union all
* Join
* Connecting to Database Server in Python
* Connecting to different databases like SQL
* CRUD Operations in Python
* Transactions Management