PYSTERS™

Annexure - 1 : Fundamentals of Python Scripting (FPYS-DEC18)

1.1 Course Introduction

    The fundamentals of python scripting course (FPYS-DEC18) outlines the fundamental concepts of python scripting language that are needed for any beginner to start-with for a career in python that can include web development, application development, devops, script automation, data analytics, mobile application development, scientific computation, cloud computing etc. The fundamental scripting concepts that are covered in this course are listed below (section 1.4) , keeping all the combinations of course audiences in mind, but it doesn't end there, if time permits and participant's performance-cum-curiosity over weighs, as a

complementary few topics listed under 'topics of interests' (Section 1.4.12) will be covered with prior notice without any interruptions or extra-cost along with the planned course. Please read the complete course brochure to get eagle's eye view of the entire course and its contents, in-case if you landup in any query / specific requirement please write it to us, we would love to help you in the best possible way.

Apart from that, this course is completely designed as complete hands-on practical course that encourages participants to explore and experience python scripting through try-out sessions followed with the cutting-edge reviews and code improvements through expert advise. Also to keep the class fun filled there are well designed quizzes, assignments and exams that can help you kindle your coding nerdiness and prepares you to be a good problem solver.

As a complementary, this course also introduces the participants with the basics of few commonly used developer tools that are used by corporate entities in day-to-day development practices, there by helping the participant to get more confident with a broader working perspective.

1.2 Course & Fee Details

- **Instructor : Gugan Vignesh Selvaraj** (Linked in : https://www.linkedin.com/in/gugan-vignesh-selvaraj-094776121/)
- **Level : Foundation**
- **Intended audience : Freshers & Beginners**
- **Pre-requisites** : Self-interest, impeccable effort, motivation & hunger to learn
- **Total Course Duration : 40 hours (Course + Quiz + Assignments + Exam + Try-out Sessions)** or 1 Month (4 Weeks of 2 Hours Every Working-Day) which ever is maximum
- **Course Fee : Rs. 5500 per student per course offering**
- Course Days : Monday - Friday
- Max Number of Students (per course/class) : 25 Students (Atmost)
- Includes : Class-work, assignments, quizzes, try-out sessions & exams
- Mini-Project : Extra 10 hours (Optional and Not included in the basic package) : Extra amount : Rs. 1500 (If any student out-performs and has above 95% attendance in-class, then mini-project may be offered for free of cost)
- Students must bring their own laptop with working operating system (Ubuntu or Windows) and laptop charger
- Course can also be offered in fast-track (weekends only) mode based on the interest of the participant. For more details please contact.

1.3 Course Terms & Conditions

- Student should be meeting 95% in-class attendance to avail the participation & training completion certificate.
- Student should complete all the class-work, try-out sessions, assignments, quizzes & exams to avail the course participation & training completion certificate

- Any casual or sick leave should be communicated at-earliest before the commencement of class
- No new admissions or batch switching after the commencement of the course
- Students must bring their own laptop with working operating system (Ubuntu or Windows) and laptop charger
- In-case, if any of the scheduled class is cancelled due to various reasons, it will be compensated immediately on upcoming Saturdays / Sundays

1.4 Course Contents

1.4.1 Environment Setup

- Github Setup
- Slack Setup
- Python Setup
- Pycharm Setup
- Database Setup
- Development Environement Setup

1.4.2 Basic Problem Solving

- Introduction to Scripting
- Overview of Problem Solving
- Overview of Practical Problems and Problem Solving Techniques
- Fun with Pseudo-Codes with Real-time Problems

1.4.3 Python Building Blocks

- Python Overview
- Python Practical Applications
- IPython : Code Fun with Basic Input / Output Functions
- Running First Python Script
- Syntax and Rules
- Python Objects
- Python Variables
- Python Basic Operators
- Python Special Operators
- Python Statements & Expressions
- Basic Python Objects (Numbers, Strings)
- Advanced Python Objects (Tuples, Lists, Sets, and Dictionary)
- Other Python Objects (Arrays, Datetime, Decimal and Complex Numbers)
- More Fun with IPython

1.4.4 Python Documentation

- Python comments

- Dir & Help Functions
- PyDoc Overview
- Other documentation resources (Stack-overflow, etc.,)

1.4.5 Python Control Structures

- Conditional Control Structures (if, if-else, if-elif, else)
- Looping Control Structures (for, while)
- Special Statements (break, continue, pass, else)
- Nested Control Structures
- Special Ternary Construct (if-esle)
- Basic Object Iterations and Comprehensions

1.4.6 Python File Objects

- Basic File Object
- File Object Modes
- Built-in File Handling Functions
- "With" statement overview

1.4.7 Python Functions & Modules

- Fun with Built-in Functions
- Basic Python Functions
- Scopes, Special Variables & Arguments
- Advanced Python Functions (Lamda, Polymorphic, Recursive & Decorator functions)
- Modules & Packages

1.4.8 Python Errors & Exceptions

- Errors & Exceptions
- Built-in Exceptions
- Handling Errors & Exceptions (try-except-else, try-except-final-else)
- Nested Exceptions
- User Defined Exceptions

1.4.9 Python Database

- Introduction to Database
- Basic Database Querries
- Database Conectivity using Python
- Database Queries using Python

1.4.10 Python OOPS

- Introduction to OOPS
- Classes and Objects
- Basic concepts in OOPS (Inheritance, Overriding)

1.4.11 Python Advanced Packages

- Math
- Copy
- OS, SYS
- Threading
- Serialization : Object Pickling-Unpickling, JSON & XML Parsing
- Regular Expressions

1.4.12 Topics of Interest (Complementary*)

- Basic CGI Scripting, Basic GUI Scripting, Email Notifications, Introduction to Jupyter Notebooks

1.4.13 Mini Project (10 Hours - *Optional - *Additional Fee)

- Problem Statement
- Basic Project Development, Construction & Structuring
- Mentoring Project Flows, Development and Testing