PYTHON FUNDAMENTAL MASTERCLASS

KICKSTART TO LEARNING PYTHON
AND
STEP BY STEP SYLLABUS

INTRODUCTION AND BASICS

- Introduction

- Interpreter vs. Compiler

- Understanding and Getting to Know Python

- More on Variables and Strings String Formatting

- Displaying Numbers, Variables and Strings

PROGRAM FLOW CONTROL

- Conditions with IF ELIF ELSE

- FOR Loops

- Understanding CONTINUE and BREAK

- Augmented Assignments

- WHILE Loops

- Nesting Conditions and Loops

UNDERSTANDING SEQUENCES

- Lists in Python

- Understanding Iterators

- Using Ranges

- Ordered Sets Using Tuples

UNDERSTANDING MAPPINGS

- Binary and Hex Numbers in Python

- Dictionaries and More

- Sets in Python

HANDLING FILES, INPUT AND OUTPUT

- Reading and Writing Text Files

- Appending to Files

- Writing Binary Files Manually

- Using PICKLE to Write Binary Files

- Shelves

- Manipulating Data with Shelves

- Updating With Shelves

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HANDLING FILES AND I/O – P1

- Modules and Import

- Standard Python Library

- Time and Date in Python

- Timezones and PYTZ

- Checking Path

- Functions in Python

- Scope in Functions

- Global Variables

HANDLING FILES AND I/O – P2

- Importing Techniques
- Underscores in Python
- Namespaces
- Recursion
- Nonlocal
- LEGB

EXCEPTIONS

- Reviews

- Handling Exceptions

- Raising Exceptions

- Customising Exceptions

OBJECT ORIENTED PROGRAMMING – P1

- OOP and Classes

- Instances, Constructors, Self and More

- Class Attributes

- Methods

- Non Public and Mangling

- DocString and Raw Literals

- Compile Time

- Getters and Properties
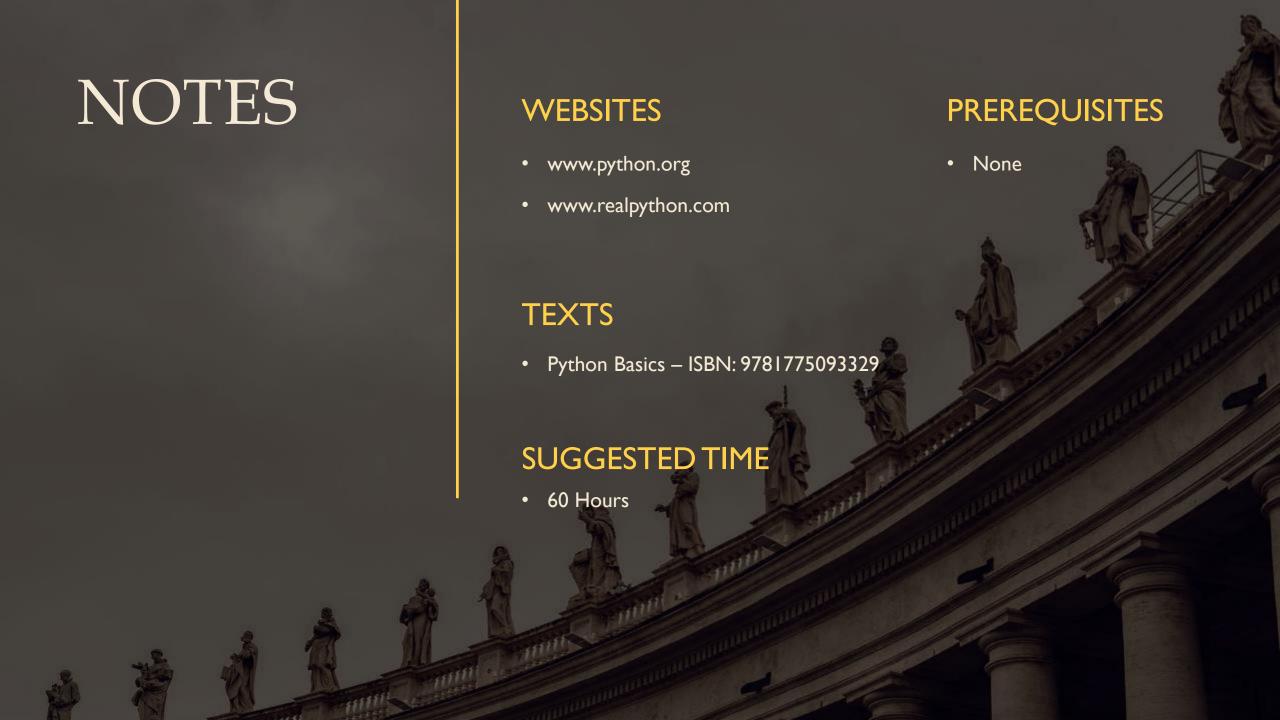
OBJECT ORIENTED PROGRAMMING – P2

- Getters and Setters

- Encapsulation

- Inheritance

- Subclasses and Overloading

- Calling Super Methods

- Overriding Methods

- Polymorphism

- Duck Test

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OBJECT ORIENTED PROGRAMMING – P3

- Composition
- Aggregation
- Delegation

NOTES

WEBSITES

- www.python.org

- www.realpython.com

TEXTS

- Python Basics – ISBN: 9781775093329

SUGGESTED TIME

- 60 Hours

PREREQUISITES

- None

DOCUMENT HISTORY

Author	Version	Revision	Date / Time	Department	Validity
Mehdi Shokri	1.0.0		11-05-2023	Development	3 Months
Mehdi Shokri		1.0.1	12-05-2023	Development	3 Months