Python Course: Skill And Certification Oriented Course

(Duration: Basics 44 hrs + Advanced as per topic)

Basic Python Module

Module 1: Introduction
1) How is Python? (History)
2) What is Python?
3) Why is Python?
4) Where is Python?
5) Python Installation.
6) Virtual Environment Setup
7) IDE: PyCharm, Eclips, Aptana Studio
8) Initiate Python best practices: coding standards

Module 2: Variables and Data Type
1) Core Object
2) Variable
3) String, Integer, Boolean Data Type
4) None Type
5) List, Tuple, Dictionary Data Type
6) Set Data Type
7) Data Structure

Module 3: Statement
1) Conditional Statement
2) Break and Continue
3) Looping Structure
4) Nested loop
5) Control looping
6) Comprehension

Module 4: : Built-in Functions and Modules
1) Built-in Functions: min, max, count, len, split, zip, types, sum, sorted
2) Built-in Modules: os, sys, re, datetime, glob, math, time

Module 5: User Defined Function
1) Types of Functions
2) Function Parameters
3) Unnamed and named Parameters
4) Creating and Calling Function
5) Anonymous Lambda Function

Module 6: Generator and Decorator
1) Iterator
2) Generator
3) Generator vs Iterator
4) Decorator

Module 7: File Handling
1) Know how – Python Absolute Path
2) File Parsing with "With"
3) File Parsing with Generator
4) File parsing with Pandas Library
5) Parse JSON file
6) Parse XML file

Module 8: OOPs with Python
1) What is OOPs
2) How OOPs is implemented in Python
3) Inheritance and Polymorphism
4) Operator and method Overloading
5) Creating Class and Object
6) Accessing Class Attribute

Module 9: Exceptional Handling
1) Basic Exception Handling
2) Standard Exceptional Hierarchy
3) Try…Except...Else…Finally clause
4) Self-Exception class

Module10: Debugging
1) Debugging Errors
2) Debugging with PyCharm
3) Assert Statement for Debug

Module 11: Database Interaction
1) Create SQLight3 database
2) Database connection
3) CRUD Operation
4) Python ORM for database operation

Module 12: Unit test case writing
1) Unittest framework
2) Goal of Unittest case writing
3) Test structure
4) Test output

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Advance Python Modules (Selective)

Module 1: Python Web Frameworks
1) Types of web-frameworks in Python
2) List of web-frameworks
3) Features of all frameworks
4) Differences
5) Django Framework

Module 2: Introduction of Django
1) History of Django
2) MVC Architecture of Django

Module 3: Download and install Django
1) Download & Install Django
2) "Hello World" Django Project
3) Components of Django

Module 4: : Project 1| Django
1) Create Polling application.
2) Topics: Django, Django Basic Models, Django Basic Template, Django URLs

Module 5: Django Project2
1) Create Informative web application for Country database.
2) Topics: Django, Django Advanced Models, Django Advanced Template, Django URLs

Module 6: Introduction of socket programming
1) What is socket programming?
2) Where to use socket programming?
3) What is synchronous and Asynchronous?
4) AsyncIO of python.

Module 7: Types of socket Programming
1) List of socket programming pattern
2) Request-Response
3) Push-Pull
4) Public-Subscribe
5) PAIR

Module 8: Project 3| Python + socket
1) Create live commandline chat application
2) Topics: Python, ZeroMQ

Module 9: Project 4| Django + web socket
1) Create live web chat application
2) Topics: Django, Tornado server, web-socket, JQuery,
    HTML5, CSS3, Bootstrap

Module10: Project 5| Twitter + NLP
1) Create application which will subscribe Twitter channel
    (using hash) and find sentimental using NLP
2) Topics: NLP lib TextBlob, Twitter API library

Module 11: Project 6| Python + AWS
1) Create a Python library to interact AWS Services
2) Topics: Python, Boto3 lib, AWS

Module 12: Deploy app with Docker
1) What is Docker? 2) How to install Docker?
3) How to create Docker container (DC)?
4) How to deploy DC on EC2 or any Linux Server

Module 13: Introduction of Machine learning
1) What is machine learning?
2) Where it is used now a day?
3) How it is useful?

Module 14: Introduction of Deep Learning
1) What is Deep learning?
2) Where it is used now a day?
3) How it is useful?
4) Difference between ML and DL?

Module 15: Machine Leaning Algorithms
1) List of Machine Learning Algorithms
2) Supervised Learning
3) Unsupervised Learning
4) Reinforcement Learning

Module 16: Project 7| Face detection
1) Create Face Detection with OpenCV lib
2) Topics: OpenCV library, Python

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