Python advance with projects

Instructors:

Sudhanshu Kumar:

Having 8+ years of experience in Big data, Data Science and Analytics with product architecture design and delivery. Worked in various product and service based Company. Having an experience of 5+ years in educating people and helping them to make a career transition.

Curriculum:

Introduction

• Programming language overview Preview

• Installation (tools: sublime, vscode, pycharm, anaconda, atom,jupyter notebook, kite) Preview

• Virtual environment

• Why python

Python Basic

• Introduction of python and comparison with other programming language

• Installation of anaconda distribution and other python ide

• Python objects, number & Booleans, strings.

• Container objects, mutability of objects

• Operators - arithmetic, bitwise, comparison and assignment operators, operator's precedence and associativity

• Conditions (if else, if-elif-else), loops (while, for)

• Break and continue statement and range function

String Objects

• Basic data structure in python

• String object basics

• String inbuilt methods

• Splitting and joining strings

• String format functions

List Object Basics

• List methods

• List as stack and queues

• List comprehensions

Tuples, Set, Dictionaries & Its Function

• Dictionary object methods

• Dictionary comprehensions

• Dictionary view objects

• Functions basics, parameter passing, iterators.

• Generator functions

• Lambda functions

• Map, reduce, filter functions.

Oops Concepts

• oops basic concepts.

• Creating classes

• Pillars of oops

• Inheritance

• Polymorphism

• Encapsulation

• Abstraction

• Decorator

• Class methods and static methods

• Special (magic/dunder) methods

• Property decorators - getters, setters, and deletes

Files

• Working with files

• Reading and writing files

• Buffered read and write

• Other file methods.

• Logging, debugger

• Modules and import statements

Exception Handling Difference Between Exceptions And Error

• Exceptions handling with try-except

• Custom exception handling

• List of general use exception

• Best practice exception handling

Pandas Basic

• Python pandas - series

• Python pandas – data frame

• Python pandas – panel

• Python pandas - basic functionality

• Reading data from different file system

Pandas Advance

• Python pandas – re indexing python

• Pandas – iteration

• Python pandas – sorting.

• Working with text data options & customization

• Indexing & selecting

• Data statistical functions

• Python pandas - window functions

• Python pandas - date functionality

• Python pandas –time delta

• Python pandas - categorical data

• Python pandas – visualization

• Python pandas - iotools

Dask

• Dask array

• Dask bag

• Dask dataframe

- Dask delayed

- Dask futures

- Dask API

- Dask scheduling

- Dask understanding performance

- Dask visualize task graphs

- Dask diagnostics (local)

- Dask diagnostics (distributed)

- Dask debugging

- Dask ordering

Python Numpy

- Numpy - ND array object.

- Numpy - Data types

- Numpy - Array attributes

- Numpy - Array creation routines

- Numpy - Array from existing

- Data array from numerical ranges.

- Numpy - Indexing & slicing.

- Numpy – Advanced indexing

- Numpy – Broadcasting

- Numpy - Iterating over array

- Numpy - Array manipulation

- Numpy - Binary operators

- Numpy - String functions

- Numpy - Mathematical functions

- Numpy - Arithmetic operations

- Numpy - Statistical functions

- Sort, search & counting functions.

- Numpy - Byte swapping

- Numpy - Copies &views;

- Numpy - Matrix library

- Numpy - Linear algebra

Visualization

- Matplotlib

- Seaborn

- Cufflinks

- Plotly

- Bokeh

Web API

- What is web API ?

- Difference between API and web API ?

- Rest and SOAP architecture

- Restful services

Flask

- Flask introduction

- Flask application

• Open link flask

• App routing flask

• Url building flask

• Http methods flask

• Templates flask

• Flask project: Food app

• Postman

Database

• SQLite

• MySQL

• MongoDB

• Cassandra

Memory Management

• Multithreading

• Multiprocessing

Python Project

• Weeding script

• Image resizing

• Jupyter notebook merging, reading etc.

• Sending emails

• Weather app

• Memes generator

- Food log app

- Web scrapping

- Web crawlers for image data sentiment analysis and product review sentiment analysis.

- Integration with web portal.

- Integration with rest api, web portal and mongodb on azure

- Deployment on web portal on azure.

- Text mining

- Social media data churn

- Mass copy, paste