“Advanced Python Programming for Machine Learning Projects”

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About the Instructor

1. Currently working for 15 IT Resources as a Consulting Software Engineer and Data Scientist

2. Teaches Computer Science and Business Statistics classes online

3. Organized the Hillsboro Python Machine Learning meetup (https://www.meetup.com/Hillsboro-Python-Machine-Learning-Meetup/)

4. Worked for Intel as Senior Software Engineer from 2015 to 2016

1. Object-Oriented and Multithreading/Asynchronous Programming

GitHub: https://github.com/ebonat/intel_session_1

Class Agenda

- Prerequisites
- Requirements
- Duration
- Cost – FREE!
- Objective – To learn Python best programing practices and become a better Python Software Engineer for Machine Learning
- Sessions

What you will DO?

- Study, read and practice every week
- Follow Python standard software development guides
- Always try to find the best possible solution of your programming tasks (careful with Google)
- Try to use the latest Python developed libraries and framework if possible (first look at Python Documentation and then Google)
- Participate in program code review with experienced Software Engineers – **very important!**
- Participate in Python meetups meeting (once a month) and conferences (watch conferences videos on YouTube)

Why Object-Oriented Programming (OOP)?

1. OOP provides a clear modular structure for programs which makes it good for defining abstract datatypes where implementation details are hidden and the unit has a clearly defined interface

2. OOP makes it easy to maintain and modify existing code as new objects can be created with small differences to existing ones

3. OOP provides a good framework for code libraries where supplied software components can be easily adapted and modified by the programmer. This is particularly useful for developing graphical user interfaces

Python Main Program Definition

```
import libraries, files, classes

def function1(parameter_1):

def function2():

def main():

  parameter_1 = “employee_name”

  variable = function1(parameter_1)


if __name__ == '__main__' :

   main()
```

Python Function Definition

```
def function_name(input_parameters):
  try:
    some code...
  except:
    error handing...
  finally:
    objects memory clean-up...
  return
```

Python Laptop Setup

1. Install Python Anaconda Distribution Package - 3.7 version (https://www.anaconda.com/download/)

2. Open command prompt and type in:

cd C:\Snaps\AppData\Local\Continuum\anaconda3\Scripts (wherever is anaconda script folder)

3. Do the following updates first:

- conda update coda
- conda update anaconda
- conda update library_name (example: conda update numpy)
- conda install library_name (for a new library)
- run version.py file and check libraries version

Look and learn for code examples

Open GitHub link, download the examples, run and learn from them!

Exercise 1

Design a function that format and return a decimal number with specific number of digits (1, 2, 3, 4 or 5)

Python Class Object Definition

```
import libraries

class ClassName(object):

  # define consts, fields and properties


  def __init__(self):

    some code...



   def function_name(self, parameters)

    some code...
```

Exercise 2

Base on the files functions.py and utility_functions.py developer the following files to get the full name of any person.

- name_superclass
- name_subclass
- name_calling