Python: 2 Days to Teach Python with Data Analytics

Course Objectives:  
1. Students need to learn basic python

2. Students need to learn basic data analytics packages / libraries

Data Science Libraries:  
1. Numpy (must cover)

2. Matplotlib (must cover)

3. Pandas (if time permits)

Day 1:

Basics of Python

* 1st 2hr of the morning to install, Jupyter Notebook for the students
* Basic Arithmetic in Python (20 mins)  
  Assignment Operations
* Data Types  
  (STR, INT, FLOAT, LIST, DICT, BOOL)  
  STR – text  
  INT – whole number  
  FLOAT – decimal number  
  LIST & DICT – a data structure to group different data together  
  BOOL – a switch, that can only have two values, true or false  
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  how to use the type() function to check the data type inside the variable  
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  Data type conversion  
  - how to convert str to int / float  
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  how to use the len() function to check the length of an array / string
* Variables  
  how to store value in variables  
  how to re-assign value in variables  
  how to concat values in two saperate variables
* Spend more time on the list and dict  
  get value from the list / dict  
  get add value into list / dict  
  remove value from list / dict  
  how to cut the list / dict into different pieces
* Control statement (IF / ELIF / ELSE)  
  show a simple example of a nested control statement
* Loops (while / for)

Day 2:

Basic Data Analytics Packages

* Morning (Numpy)  
  1. One dimensional Array  
  2. Two dimensional Array  
  3. How to access Basic numpy variables  
  4. How to use basic numpy function  
  (sum, min, max, log, exp, square, power)

5. how to morph the numpy array  
(ones, zeros, arrange, rearrange)  
6. How to slice the numpy array

* Lunch (Matplotlib)  
  Cover from slide: 91 – 132 (python Packages.ppt)

Test:

* Excel lessons, when they will take the test on the last day or on the first excel lessons
* One Test (20 Questions)  
  10 Qns should come from the basic python  
  10 Qns should come for the data analytics Test  
  (list, dict, numpy, matplotlib)

Things you have to do:

1. Prepare your presentation slides before 31st December
2. Prepare a test paper for the students