

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

how to use the type() function to check the data type inside the variable

Data type conversion
- how to convert str to int / float

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