Duration: 40 hours

Python Syllabus Overview

- INTRODUCTION TO PYTHON
  - Windows installation
  - Linux installation
  - Difference between Python/R
  - Data Structure
  - Architecture
- Functions
  - Index
  - Find
  - Lower
  - Isdigit
  - Replace
  - Strip
  - Lstrip
  - Rstrip
  - Split
  - Startswith
  - Endswith
- Formatting string
- Complex data types
  - Lists
    - Append
    - Pop()
    - extend
    - insert
    - remove
    - len
    - for loop
    - range
  - Boolean operators
  - Tuples
  - Dictionaries - mapping objects or associative arrays

- INTRODUCTION TO NUMPY AND PANDAS LIBRARY
  - convert series into a dictionary
  - convert dictionary into a series
  - passing indices from a list
  - check for null values
  - check for non-null values

- lines up by index and performs operation
- naming a series
- name the index

- Data frames
  - copying the first few lines (including header) from the table on the webpage
  - columns
  - Rank
  - Head()/tail()
- Index objects, Reindexing, Index hierarchy
- Dropping entries, Selecting entries
- Data alignment, Ranking and sorting
- Missing data
- Reading and writing text files
  - Reading csv file
  - Reading txt file
  - Options in reading the files
- Merging
  - Many-to-many merge
  - Merging with multiple keys
  - Merge on index
- Concatenate
  - Concatenate with numpy
  - Concatenate with pandas
- Combining data
- Reshaping data frames and Pivoting
- Duplicates in data frames
- Mapping
- Replacing values
- Renaming indices
- Binning
- Outliers
- GroupBy on data frames, Series and Dictionaries
- Data aggregation/ Data summarization
- Split, apply, combine
- Visualisation using matplotlib and seaborn
  - Histograms and joint plots
  - Kernel density estimation (KDE) plots
  - Combining plot styles
  - Box and violin plots
  - Heatmaps
  - Regression plots