

Python Workshop

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Why Programming and why Python ?

- Why repeat same task day by day, Why not automate.
 - Code once and run when required
- Programming isn't that hard
 - Neither requires computer science deg
 - Nor requires advance math knowledge
- Easy to get started with
 - Taught in many of EU schools
- Universal applications
 - “Whatever field you are in, you will come across Python sometime.”

What you will learn Today

- Introduction
 - Python basics to get started with problems and some programming concepts
- Problem 1
 - Working with CSV files
- Problem 2
 - Working with Excel files
- Problem 3
 - Scrape data from web

Introduction

- Install Anaconda, obtained from usb drive
 - <https://www.continuum.io/downloads>
 - Open up Spyder IDE
 - Write some basic python commands
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- Anaconda
 - It is prepackaged Python installer with all the necessary libraries required to run our tasks.
 - Spyder IDE
 - It is tool where we write and run our python programs.

Problem 1

- Open GDP ranking file
 - <http://data.worldbank.org/data-catalog/GDP-ranking-table>
- List all the rows
- List selected rows
 - List south asian countries
 - List top 10 countries
 - List bottom 10 countries
- Create new csv file using above filters
- Merge multiple csv files into one, How ?
- Learn More
 - JSON

Problem 2

- Open climate change data file
 - <http://data.worldbank.org/data-catalog/climate-change>
- What we will use
 - Openpyxl (Allows us to open manipulate and change MS Excel files, xlsx)
- If you want to learn more
 - Xlwt (creates MS Excel files, xls)
 - Xlrd (reads MS Excel files, xls)
 - Docx (reads / writes MS Word files)
 - PyPDF2 (extract text from PDF files)

Problem 3

- <http://www.nepalstock.com/>
- Install / Open Chrome
- Obtain market information
- We will be using
 - Requests (opens website and fetches page)
 - BeautifulSoup (allows us to search open page using specific terms)
- If you want to learn more
 - Scrapy (Web crawling framework in Python)
 - Selenium (Allows us open Web browser like Firefox or Chrome from Python and work with it from within our code.)

Moving on ...

Web Development

- Web Developer
- System Admin/Dev Ops
- QA/QC

- Python **
- Database/SQL skills *

- + Django / Flask / Pyramid
- + SQLAlchemy

Data Science

- Data Analyst
- Visualization (Charts/Graphs)
- Business Intelligence

- Python *
- Statistics *

- + Numpy / Pandas / Matplotlib
- + Scrapy / Bokeh / SQLAlchemy

Research

- Artificial Intelligence
- Physics
- Applied Mathematics

- Python *
- Mathematics **

- + Scipy / Scikit-learn / Jupyter
- + Sympy / Scikit-image / Astropy

Leapfrog Academy

- Python/Django Class starting this week (28 March)
 - Covers basic Programming
 - Basic - Intermediate Python
 - Basic - Intermediate Django
- I will help you learn Python
 - “It’s not what you get, it’s what you want”
- For self learners
 - <https://automatetheboringstuff.com>
 - <http://www.diveintopython3.net/>

Thank You