Python Lab

Proteomics Informatics, Spring 2014

Week 1

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Administrivia

- Last 45 mins of each class
- Ppt and code snippets will be uploaded along with course lectures
- Open cube office hours
  - discuss doubts, code, projects, whatever remotely pythonic

Goals

- Develop core (python) programming skills
- Programming best-practices along the way
- Hands-on with libraries in the Python data analytics ecosystem
  - Pandas
  - Matplotlib
  - Numpy/Scipy
  - Other libraries (as needed)
- Some “must have” tools in a programmer’s toolbox:
  - (Integrated) Development environment (Eclipse/Pydev, IPython)
  - Code debuggers
  - Package management

Structure

- Week 2 & 3: Core Python
  - Data types and structures
  - Expressions, Statements, Loops
  - Functions and modules, file handling

- Week 4 – end:
  - Code examples for computational proteomics
  - Assignments with skeletal structure

Setup

- Anaconda
  - http://docs.continuum.io/conda/index.html
  - Installs:
    - Python env (including IPython)
    - Several packages
- Eclipse (pre-requisite: **Java**)
  - http://www.eclipse.org/downloads/
- PyDev (requires Java 7)
  - Install: http://pydev.org/manual_101_install.html
  - Setup Interpreter

Checks!!

- conda/pip (update)
  - > ipython;
- > conda
- > pip -V
- Ipython

  > print “all is well”

  > import numpy, scipy, matplotlib, pandas
- Eclipse
  - Create a python project
  - Create a python file
  - print “all is well”

Resources

- http://docs.python.org/2/tutorial/
- Learning Python, 5th ed.
- Python in a Nutshell
- Python for Data Analysis
- Official Python/Library documentation
  - http://www.python.org/doc/
- Internet ☺