Assignment 4
Modules

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Week 4

Objectives:

- Import modules and packages
- Use modules and packages
- Create new modules and packages

Exercise 1

Overview the documentation of the Python package *SpacePi*, located in http://spacepy.lanl.gov/.

Exercise 2

Install NASA's JPL Horizons On-Line Ephemeris System Python API, which is available on https://github.com/mihok/horizon-jpl and run the demo available in its source code. It is better to void using pip, try instead to manually install it following the instructions placed in the previous URL.

You can find an application example on http://nasa.apphb.com/explore.

Exercise 3

Open The Python Standard Library reference manual[1], and browse the packages installed by default.

- Which package would you use to download a file with HTTP?
- Locate at least one package to develop graphical applications with Python.

[1] https://docs.python.org/3/library/index.html

Exercise 4

Python includes a command-line tool named `pip3` (just `pip` in Python 2.X) that makes installation of new packages a piece of cake. All the packages available for this tool are listed in `https://pypi.python.org/pypi?%3Aaction=browse`. Locate, and, if you have root permissions, install and validate the installation the packages to perform the following tasks:

- Plot scientifical data.
- Develop a videogame.
- Twitter data analysis.
- Predict a planet's position.

Exercise 5

If you have root permissions, install the package named `astroML`, which applies Machine Learning to Astronomy. Be careful with dependences.

1. Select, download and run any of the examples listed in `http://www.astroml.org/examples/datasets/index.html`

Exercise 6

We are going to create a new package with two modules and then use them.

1. In your working directory, create a new folder named `test`
2. Create a package initialization file `test/__init__.py` which just prints out that the packages is being initialized
3. Repeat the same with modules `test/module1` and `test/module2`, each with its own initialization script.
4. Define a simple function in `test/module1/foo.py` and `test/module2/foobar.py`
5. Import package `test` and execute the functions placed in `foo.py` and `foobar.py`