MaFiRM 2020/21

Introduction to Python

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16 hours

Course objectives

The module is an introduction to the Python programming language. At the end of this module, students should be familiar enough with Python language to read and write non-trivial Python code, as well as to exploit specific Python packages, particularly those related to scientific computing and treatment of economic datasets.

Students will be taught how to write their own code through concrete examples. Students are encouraged to actively interact in class and will be asked to work on problem sets assigned during the lessons.

Topics

The module is an introduction to the Python programming language and mainly deals with the following topics:

1. Introduction to Python language. Variables, structures, and functions. I/O of data.
2. Specific packages for analyses and plots: Numpy, SciPy, and Matplotlib.
3. Dataframes in Python: the Pandas package.
4. Data analysis in Pandas: descriptive statistics, regressions, plots, and figures from dataframes.

Software needed

Python 3.7 (or 3.8, if available) from Anaconda: https://www.anaconda.com/distribution/.

Textbook and course material

Many code examples will be presented during the course. In addition, students may refer to:

- Wes McKinney, *Python for Data Analysis*.
- Allen Downey, *Think Python. How to Think Like a Computer Scientist* (available online for free at greenteapress.com/thinkpython/thinkpython.pdf).
- Michael Dawson, *Python Programming for the Absolute Beginner*.

Exam type

Students will be evaluated (pass/fail) based on problem sets assigned during the lessons and a group projects that will be individually discussed in detail with each of them. Projects will be assigned during the course.