Python programming

ECTS : 3

Description du contenu de l'enseignement :

This is an intermediate course on Python programming. It is designed for students with some prior programming experience. During the course the students and the instructor will develop jointly a python library, covering the steps, methodologies, and standards to produce high quality open-source code. At the end of the course, the students are expected to develop an independent new feature compatible with the project.

Session 1 Introduction, Methodology, and Tools.

Session 2 PyBacktestChain: A Backtesting framework for investment strategies that uses Blockchain technology to avoid overfitting.

Session 3 Data Module: Numpy, Pandas, and Object Oriented Programming.

Session 4 Strategy Module: Portfolio Optimization with SciPy

Session 5 Simulation and Risk Management

Session 6 Blockchain Module: Foundations, create a blockchain from scratch

Session 7 Blockchain Module: Storing backtests in the blockchain.

Session 8 User Interface and final project presentation

Compétence à acquérir :

Knowledge in Python programming for career in quantitative finance

Mode de contrôle des connaissances :

Project 90% - Participation 10%

Recommended prior knowledge
Basic concepts of programming, statistics, linear algebra and convex optimization.

Bibliographie, lectures recommandées :

Mandatory literature: Mandatory installation:
Python 3.9 and other pydata libraries from Anaconda: https://www.anaconda.com/distribution/

An IDE like VSCode to run python code https://code.visualstudio.com/

Pre-requisite:
Recommended material if the student has no experience coding: 1 hour Python beginner tutorial - See the vide

- Hilpisch, Yves, Python for Finance: Analyze Big Financial Data, 2015, O'Reilly Publishing
- Lecture Notes and Github code of the class