PYTHON

Introduction

Python is a programming language, introduced in 1991. We find it everywhere, and it is actually ranked second in the list of the most used programming languages, after JavaScript. It is used nowadays in various contexts. In this course we are specially interested in Python from a data analytics perspective.

Python can be extended by more than 200,000 packages, which provide additional resources. About 2008, three packages were added to the Python portfolio: Pandas, for managing data sets, Matplotlib, for plotting, and scikit-learn, for machine learning. This trio put Python in the data analytics arena. Since then, Python's popularity has been growing steadily among data analysts and, nowadays, it is the pre-ferred language in machine learning.

In particular, Pandas is a library for data management, inspired in the R language. Due to Pandas, Python's popularity has been growing steadily among data scientists, in particular for data wrangling, which is the process of bringing together data from a variety of data sources and cleaning it for easy access and analysis.

Objectives

• To provide a quick introduction to Python.
• To show, through examples, how data can be managed in Python.
These objectives form the pillars of our course, propelling you toward a deeper understanding of organizational behavior and empowering you to excel as future leaders in the ever-evolving business landscape.

Competences

CB7. The students know how to apply the knowledge acquired and their ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their area of study.
CB8. The students can integrate knowledge and face the complexity of formulating judgments based on information that, being incomplete or limited, includes reflections on social and ethical responsibilities linked to the application of their knowledge and judgments.

CB9. Students know how to communicate their conclusions and the knowledge and ultimate reasons that support them to specialized and non-specialized audiences in a clear and unambiguous way.
CB10. Students possess the learning skills that allow them to continue studying in a way that will be largely self-directed or autonomous.
CG5. Show entrepreneurial behavior, initiating and promoting the necessary changes with energy and personal responsibility.
CG6. Prioritize objectives, schedule activities appropriately, and execute them within the scheduled time.
CG7. Identify and deal effectively with information relevant to their work.
CE05. Measure and become aware of the personal attitude towards risk and uncertainty. Learn methods to identify risk factors, evaluate them and study their impact on decisions. Perform sensitivity studies, advanced simulations, and scenario analysis.

Content

1.   Introduction to Python.
2.   Data types.
3.   Functions and control statements.
4.   Data containers.
5.   Numpy and Pandas.

Instructional Activities

AF1: Training sessions and meetings with the teacher (classes, seminars, lectures, tutorials, company visits, simulations): 15hrs
AF2: Individual student work (personal study, preparation of assignments): 9hrs
AF3: Teamwork (preparation of group assignments and execution of simulations): 4hrs
AF4: Evaluation tests: 2hrs

Evaluation

40% Class participation
60% Final report

The IESE Business School's Honor Code and Learning Partnership apply to all activities in this course. For individual assignments, unless explicitly stated, you should not interact with anyone else. For deliverables to be done in teams you should interact only with the members of your team.