Intro to Python — SMM692
Organization of the Module

Simone Santoni

Bayes Business School

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Outline

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Why Python?

- Python is a general-purpose, high-level programming language
    - Traditionally, Python was used for developing desktop and web applications
- So, why should business analytics (BA)professionals learn it?
    - Python is the center of one of the richest — if not the richest — data-science ecosystem
    - Python's popularity surge is strictly related with the emergence and development of the data science field (YR 2014 →)

Interest Over Time (Worldwide)
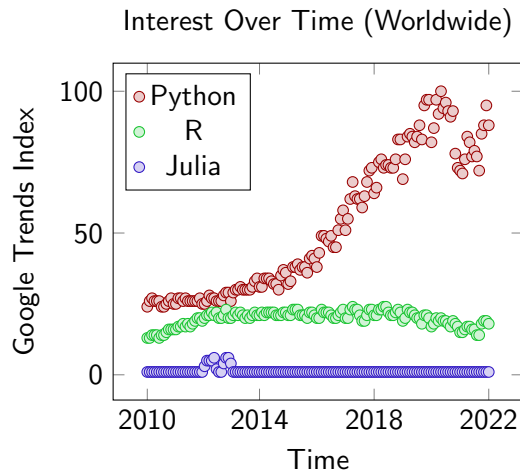
Why a Pre-Course Module on Python in a BA Post-Grad Course?

There are at least three arguments:

- Modern BA curricula increasingly depart from a spreadsheet-based approach to teaching and learning
- The Bayes BA program builds heavily on the Python programming language
  - There are *four core modules* based on Python: Data Visualization, Deep Learning, Network Analytics, Value Creation in Digital Settings
  - Plus *two elective modules*: Applied Machine Learning and Applied Natural Language Processing
- You may want to get up and running with Python in advance, that is, before the start of Term I

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Python for What?

Will SMM692 cover the entire spectrum of the Python language?

Short answer: NO

- That would take substantial time — Python has an extensive language reference!
- Some aspects of the Python language reference have limited added value for BA professionals, who are closer to Python users than developers

So, which parts of the Python language will I learn?

Short answer: the basics of the language

- Variables
- Object
- Some built-in functions, string-, list-, dictionary-, and set-methods

Python in the Business Analytics Sphere

- Learning the basics of the Python language will put you in the position to carry out technical and scentific computation tasks — namely, the essence of data science X BA

- Talking about the technical and scientific compuation: there are three foundational modules that support stastitical analysis, Viz, ML, and DL: NumPy, SciPy. These three modules are the focus of SMM692's second part

SMM692 Foci

1. Getting started with Python
2. Python language fundamentals
3. Python objects and methods
4. Technical and scientific computation with NumPy and SciPy
5. Data management with Pandas

Outline

The Two Pillars of the Module

LESS IS MORE
Focus on few core Python notions at a time and practice them

LEARN BY DOING
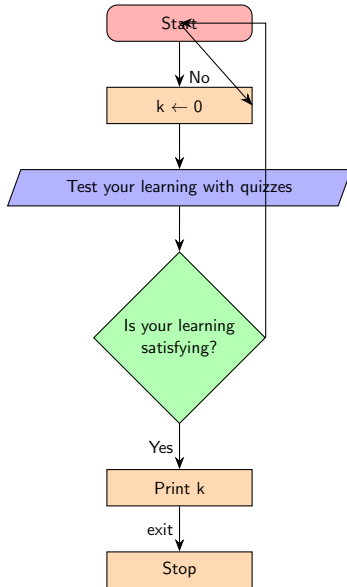The best way to learn Python is by addressing concrete problems

I'm a Programming Newbie: How Do I Learn Python?

Here is an approach the proved to be effcective according to the pedagogical literature on learnning programming languages:

- Step 1: Focus on *few core notions* at a time (e.g., 'string methods')
- Step 2: Learn the selected core notions 'pen & paper' (stay away from the computer!)
- Step 3: Open a Python session and practice the few core notions
- Step 4: Critically self-assess your learning (if your code is not working, Python will force you to understand what's wrong!)

Outline

Hello there

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