

Intro to Python — SMM692

Organization of the Module

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MSc Pre-Course Series

Outline

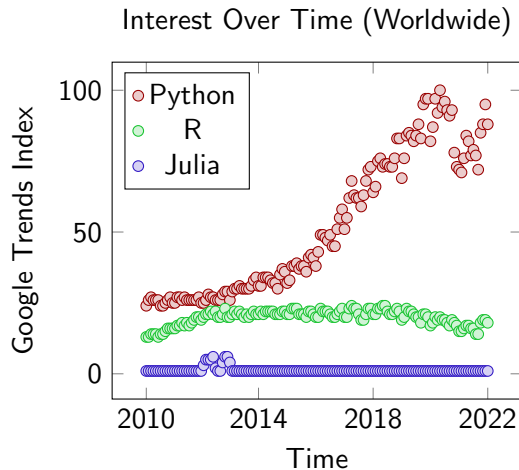
- 1 Background
 - Justification for SMM692
 - Scope of SMM692
- 2 Learning/Teaching Activities
 - Philosophy Behind SMM692
 - Assessment

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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 →)



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 scientific computation tasks — namely, the essence of data science X BA
- Talking about the technical and scientific computation: there are three foundational modules that support statistical 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

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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 effctective 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!)



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Self-Assess your Learning, Python Topic by Topic

