I am Bilingual - Python and R

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Preface

Chapter 1

Introduction to R and Python

1.1 About R and Python

1.1.1 R

R is an object oriented, open source programming **language** and **environment** for statistical computing and graphics. R is not a statistics system but an environment within which statistical techniques are implemented. Further, R gains more capabilities via packages, its fundamental shareable units that bundle together R functions, code, data, documentation, and tests etc. (R Core Team, 2020).

1.1.2 Python

Python is an object-oriented, interpreted, and interactive programming language. The motto of Python language is "Batteries included" as the functionality of the language can be performed via its comprehensive standard in built Libraries (Wikipedia contributors, 2020a).

1.2 History of R and Python

1.2.1 R

R is an implementation of the S programming language which was created by John Chambers in 1976. In 1991, an alternative implementation of the basic

S language was developed by Ross Ihaka and Robert Gentleman, University of Auckland, New Zealand. It was published in 1993 (Wikipedia contributors, 2020b).

1.2.2 Python

In 1989, Guido van Rossum at Centrum Wiskunde & Informatica (CWI) in the Netherlands started the implementation of Python as a successor to ABC programming language. Python 2.0 was released in 2000. Python 3.0, a major revision of the language that is not completely backward-compatible was released in 2008 (Wikipedia contributors, 2020a) . Today many developers create libraries strictly for the use with Python 3.

1.3 Story behind their names

1.3.1 R

R was introduced by **R**oss Ihaka and **R**obert Gentleman and it was named after the first names of the two authors. The name of the "S" language also had some influence on the selection of its name and it was selected partly as a play on the name of S (Wikipedia contributors, 2020b).

1.3.2 Python

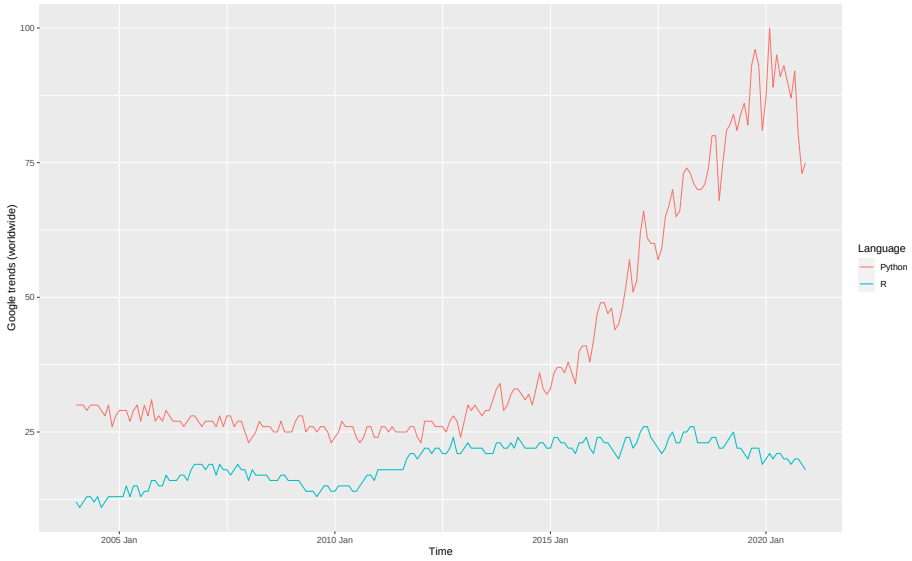
Python was named after a famous TV show 'Monty Python's Flying Circus'. Guido van Rossum, the creater of Python was a big fan of the TV show. He wanted to name his invention with a short, unique and slightly mysterious name and chose Python as a working title for his ongoing project.

1.4 Logo

Figure 1.1: Retrieved from: https://www.r-project.org/logo/

Figure 1.2: Retrieved from: https://www.python.org/community/logos/

1.5 Worldwide Google Trends



1.6 Ranked:15Python packages

for Data Science

http://blog.thedataincubator.com/wp-content/uploads/2017/04/Ranked-15-Python-Packages-for-Data-Science.pdf

Chapter 2

Variables, expressions, and statements

WIP

Chapter 3

Conditional execution

WIP

Chapter 4

Functions

WIP

Chapter 5

Iteration

Chapter 6

Import

Chapter 7

Tidy

Chapter 8

Transform

Chapter 9

Visualize

Chapter 10

Model

Chapter 11

Communicate

Chapter 12

Advanced R and Python

12.1 Time Series Forecasting

R	Python
fable-Forecasting Models for Tidy Time Series	statsmodels- Statistics based models
forecast- Forecasting Functions for Time Series and Linear Models	sktime- A unified framework for machine learning with time series GluonTS- Deep learning-based models.

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