

# Workshop Python for Economics

**Saeed Saffari**

Email: [m.saeed1024@yahoo.com](mailto:m.saeed1024@yahoo.com)

GitHub: [github.com/saeed-saffari](https://github.com/saeed-saffari)

Faculty of Economics  
Al-Zahra University



Spring 2021



# Why Programming?

- ▶ Looking for Common language between Human and Machine
- ▶ Different Works, Different Languages
- ▶ Why Python?
  - Close to Human Language
  - Easily Connect to other Languages
  - General usage
    - Wide range of fields
    - Great Communication

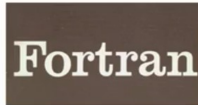


# Why Programming in Economics?

- ▶ Analysis of Economic Data
  - High volume of generated data
  - Impossibility of data management in software such as Excel
  - Read data from an online database
- ▶ Quantitative Methods
  - Influence of different mechanisms on an economic
  - The complexity of economic issues facing economists
  - Lack of analytical solutions to problems



# Programming Languages



# Comparing the way Python works with common programming languages

- ▶ C/C++ and Fortran:
  - Time-consuming coding
- ▶ MATLAB:
  - Lack of proper economic packages
  - Lack of design, efficiency compared to Python
  - Not open source
- ▶ R
  - Useful in statistics with high variety of packages
- ▶ Stata
- ▶ Julia



A horizontal timeline from 1990 to 2020. The timeline is marked with years: 1990, 1995, 2000, 2005, 2010, 2015, and 2020. Below the timeline, several colored boxes represent milestones, connected to the timeline by lines of the same color:

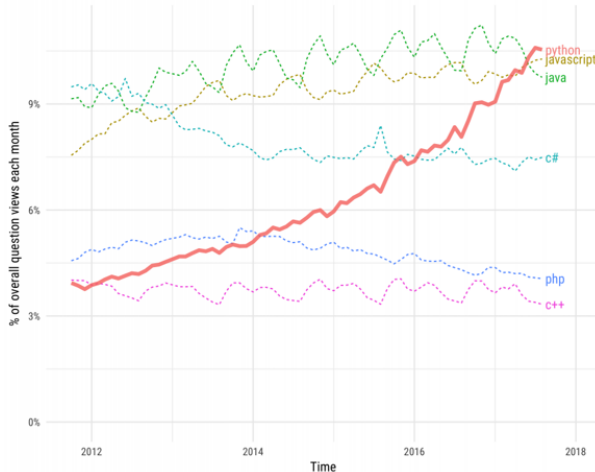
- Python's birthday** (blue box) connected to a blue dot on the timeline at 1990.
- Python 2.0** (orange box) connected to an orange dot on the timeline at 2000.
- Python 3.0** (red box) connected to a red dot on the timeline at 2010.
- Python 2.7 lives forever** (green box) connected to a green dot on the timeline at 2010.
- Python 2.7 will die** (brown box) connected to a brown dot on the timeline at 2017.
- Python 3.6** (purple box) connected to a purple dot on the timeline at 2017.



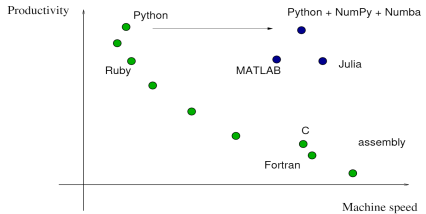
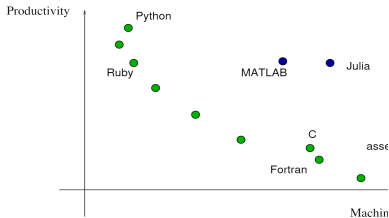
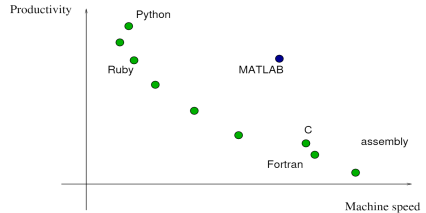
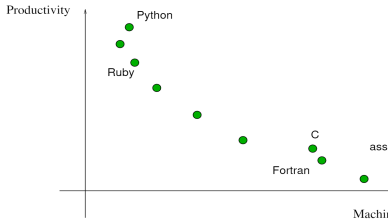
# Python has become extremely popular

## Growth of major programming languages

Based on Stack Overflow question views in World Bank high-income countries



# Trade-Offs





# Workshop Content

- ▶ Python Setup
- ▶ Object and Data Structure Basics
- ▶ Python Statements
- ▶ Methods and Functions
- ▶ Modules, Packages
- ▶ Libraries
  - NumPy
  - Matplotlib
  - Pandas
  - SymPy and SciPy
  - ...



# How to Start?

- ▶ **Read, Read, Read! Write, Write, Write!**
- ▶ [GitHub](#) and [Stack Overflow](#)
- ▶ Editors
- ▶ [Anaconda](#)
- ▶ Search Skill



# Thank you

- ANY QUESTION...?

