Introduction to Python Bootcamp

Arjun Ray — Instructor

Marissa Douglas - TA
Chris Mantell - TA

INTRODUCTION

General Info

➤ bathrooms are back past the elevators and to the left

➤ this workshop runs from 10 AM - 5 PM

➤ 30 min lunch at 12 PM ?

➤ free ☕ in the kitchen

➤ 📶 @ GA-guest – password : yellowpencil

➤ technical issues?!

Arjun Ray

PAST
ex-academic; worked on Neuroscience and Genomics

CURRENT
full stack programmer
teacher
musician

FAVORITE LANGUAGES
Python, Javascript, Ruby, R, SQL, Lisp, C

Marissa Douglas

"I just completed GA's Data Science Immersive. I came to GA after 2.5 years working in materials R&D and am now ready to take on new challenges in a new industry."

Chris Mantell

"I first became aware of machine learning, Python, and NLP while working in disease surveillance. This led me to enroll in GA. My passion for data and its endless possibilities quickly grew. Now equipped with both data science skills and my domain knowledge, I wish to help mitigate problems with those that can create change."

About You

during this workshop, **you** will learn:

➤ about how to effectively write python code and think programmatically

➤ about python variable types and methods

➤ about data structures

➤ about control flow

➤ about how to write functions

➤ additional topics (*if time permits*)
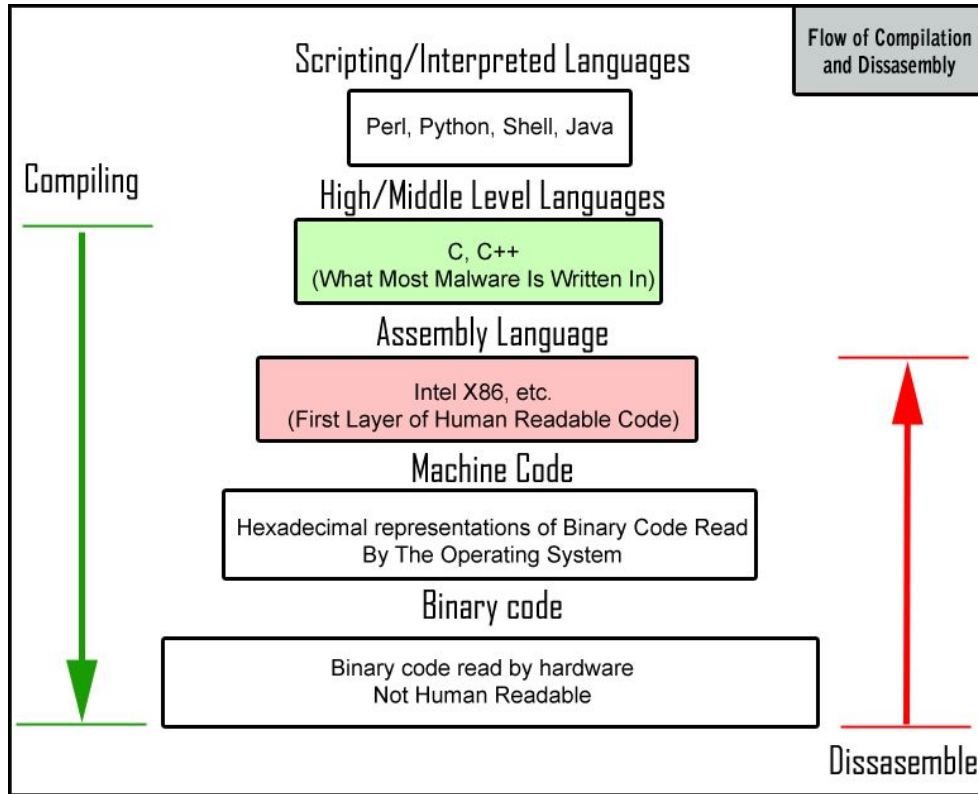
WHY PYTHON?

Python is

*"a programming language that lets you work quickly
and integrate systems more effectively"*

– python

➤ high-level programming language for general-purpose programming

➤ everyone's second favorite language

Python is

➤ **high level**

➤ general purpose

➤ dynamically typed

➤ interpreted

➤ whitespace sensitive

Flow of Compilation and Dissasembly

Scripting/Interpreted Languages

Perl, Python, Shell, Java

Compiling

High/Middle Level Languages

C, C++
(What Most Malware Is Written In)

Assembly Language

Intel X86, etc.
(First Layer of Human Readable Code)

Machine Code

Hexadecimal representations of Binary Code Read
By The Operating System

Binary code

Binary code read by hardware
Not Human Readable

Dissasemble

Python is

- ➤ high level
- ➤ general purpose
- ➤ dynamically typed
- ➤ interpreted
- ➤ whitespace sensitive

Python is

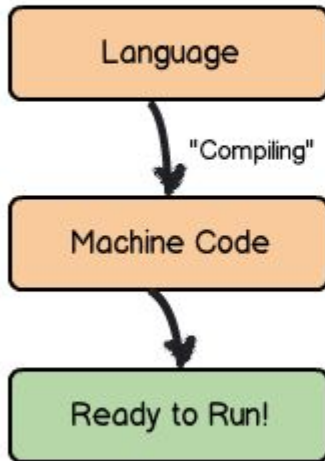➤ high level

➤ general purpose
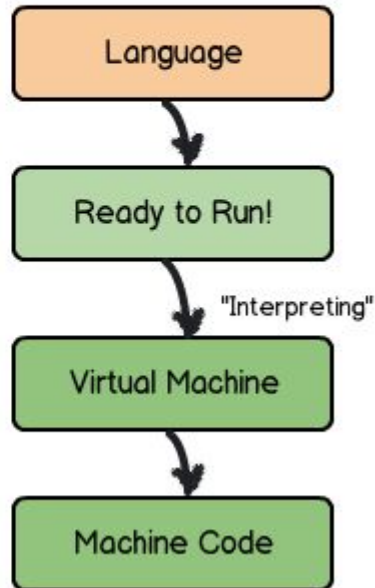
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Compiled

C, C++, Go, Fortran, Pascal
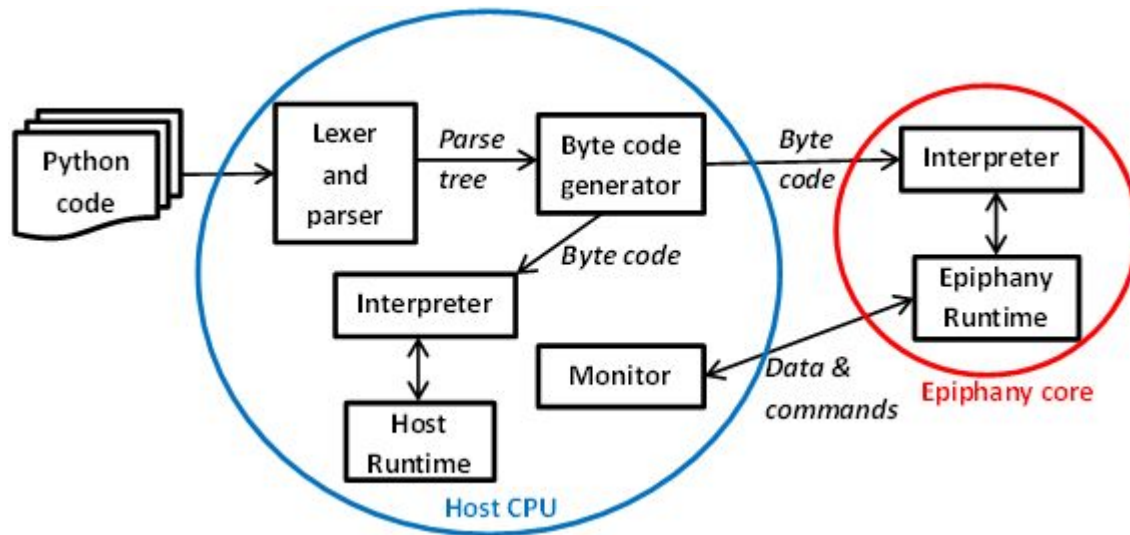
Language

"Compiling"

Machine Code

Ready to Run!

Interpreted

Python, PHP, Ruby, JavaScript

Language

Ready to Run!

"Interpreting"

Virtual Machine

Machine Code

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Who Uses Python?

➢ a large percentage of programmers

➢ companies

    ➢ Google

    ➢ Nasa

    ➢ Instagram

    ➢ Youtube

    …

What Can Python Be Used For

math/science computation

- numpy/scpy/pandas
- matplotlib/seaborn

computer vision

- opencv2

frontend/backend

- Django
- Flask
- nginx

machine learning

- sci-kit/statsmodels/NLTK...

any high level domain you can think of

How we can code in Python

➤ REPL – Read-Eval-Print Loop interpreter

➤ Spyder

➤ IPython Notebook

<u>Let's take a minute to try each of these out</u>

download this file and let's start learning python!

https://goo.gl/j9Mc7i

RECAP &
FUTURE GROWTH

Recap

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Future Growth

➤ Books
  - [Python the Hard Way](#)
  - [The PEP-8 Python style guide](#)
  - [Learning Python (O'Reilly Media)](#)
➤ there are many great resources for delving deeper:
  - DIY
  - bootcamps
    - [Data Science Immersive (General Assembly)](#)
    - [Data Science Part-Time (General Assembly)](#)
  - online resources
    - [Udemy](#), [Codeacademy](#), [Codewars](#), [Rosalind](#)

Q&A