MAKING YOUR PYTHON CODE FASTER

Women Who Code

Women Who Code (WWC) is a global non-profit dedicated to inspiring women to excel in technology careers. We work to support this generation in being and becoming leaders and role models in the tech industry.

★ We are the DC Chapter!
★ Support us! Volunteer or donate.
★ Visit our Meetup site: https://www.meetup.com/Women-Who-Code-DC/
★ Request to join our Slack chat website: http://bit.ly/wwcdcslack
★ Python Beginners: 1st Wednesday of every other month
★ Python Lab: 3rd Wednesday of the month

Hello!

I am Elvita Lobo

Women Who Code DC Python - Volunteer Lead
Women Who Code DC Slack: @ElvitaLobo
https://www.linkedin.com/in/elvitalobo/

HOUSEKEEPING

- Use Zoom chat for questions.
- To get started, save a copy of the code to your local machine:
  - Have your IDE set up so you can run Python code (PyCharm is a good one to have - https://www.jetbrains.com/pycharm/download/)
  - Get the code for the lab
    - git clone https://github.com/womenwhocodedc/python-community.git
    - cd python-community/profiling

Goals for this lab

- Learn one new profiling and/or optimizing technique
- Go back to a codebase and profile. Optimize only when needed!

A Quick Overview

Why Optimize?

- To decrease code size
- To decrease memory consumption
- To decrease CPU cycles -> FOCUS OF THIS LAB

Why Profile?

Before we start optimizing to increase speed, we first need to find out which parts of our code actually slow down the whole program. Sometimes the bottleneck of the program might not be obvious

Some Profiling Techniques

- time
  - time python3 profiling.py
- cProfile
  - python3 -m cProfile -s time profiling.py
- Decorator
  - with time.perf_counter()
  - With time.process_time()

Some Optimization Techniques

- Optimizing for speed (CPU cycles)
    - Lru_cache
    - Watch your strings!
    - Use Built-in Data Types
    - Use local variables over global variables
    - Dont access attributes

Example Time!

We will be working through the example posted in the Meetup and in chat

RECAP

In this lab we learned how to:

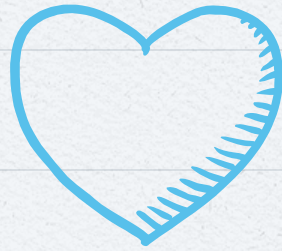- Profile python code
- Tips for optimizing it to run faster

Resources <3

★ Our WWCodeDC Python Github:

https://github.com/womenwhocodedc/python-community

★ Inspiration for this lab:

○ https://towardsdatascience.com/making-python-programs-blazingly -fast-c1cd79bd1b32

★ Slack: Sign up! womenwhocodedc.slack.com

THANKS!

Any questions?
You can find me on Women Who Code DC Slack
@ElvitaLobo

CREDITS

Special thanks to all the people who made and released these awesome resources for free:

- ✘ Presentation template by <u>SlidesCarnival</u>
- ✘ Photographs by <u>Unsplash</u>