Introduction to Programming Language

"Programming is the act of turning a 10 minute task into a 10 hour task."

-- Unknown, Common Adage

Class Sessions:

- Livestreaming: 10:00AM - 12:00PM on Monday, January 9, 2023 - Friday, January 13, 2023
- Video Release: Friday, January 20, 2023
- Zoom Office Hours: 1:00PM – 5:00PM on Monday, January 23, 2023 – Friday, January 27, 2023

Instructor:

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Course Description:

This course provides a foundational knowledge of writing effective computer programs using Python. By the end of this course, students should be able to:

- ☑️ understand and produce a Python project directory,
- ☑️ parse and write a Python script,
- ☑️ and go on to produce original Python programs while adhering to coding best practices.

Rather than attempt to reach significant technical depth, this course seeks to familiarize students with the process of learning a language's syntax, accessing a language's ecosystem, and maintaining the perspective of a "perpetual student". Students will also be exposed to the best practices of coding for the purpose of making the most of using computerized systems for their benefit.

For the sake of planting seeds for future projects, students will also be guided through special topics that touch on use-cases of course material so far. From basic networking to social media scraping to simple front-end design, this course seeks to be a pragmatic start to students looking to go from coding zero to programming hero as quickly as possible.

Methodology and Policies

This course is designed to be as asynchronous as possible. Videos will be livestreamed and posted on a video streaming website (YouTube). Once the videos go live, office hours will be held for those who need specific questions answered. Unless students explicitly ask to not be recorded, these "office hours" will be recorded and livestreamed for the benefit of other students.

Course Materials and Resources

It is recommended that students use a Unix-based operating system, like Linux or MacOS. If using Windows, it should be noted that some of the commands may be different on your machine. The instructor will do their best to address any issues as they arrive.

Students are required to install a few important pieces of software, which are linked here:

- Python 3.11: This is the language of study.
- Visual Studio Code: A popular and simple code editor.

In-class exercises, as well as take-home exercises, will be hosted in this Github repository. This will necessitate a Github account. Please have one before our first day of classes.

Schedule

- Monday, January 9th: Introduction to Programming Language

  Covering the absolute basics of why we program, this class is focused on understanding what programming languages are.

  - Repository
  - Slides

- Tuesday, January 10th: Introduction to Python

  Learning Python is often a means to an end, but learning about how to write and read code is far more important than any use-case or product.

  - Repository

- Wednesday, January 11th: Web Basics

  By discussing the basic rules of the systems that allow us to communicate so effortlessly in the 21st Century, this class focuses on how machines talk to each other.

  - Repository

- Thursday, January 12th: Scraping Basics

  In the age of information, guiding and filtering that endless stream of data is a fascinating and fruitful practice.

  - Repository

- Friday, January 13th: Data and Statistics

  Math and graph go brr.

  - Repository