

Introduction to Programming

Unit 1: Class Introduction

Let's start with introductions

- Tell us your name,
- An interest or a hobby,
- And what you're hoping to get out of this class.

What are we learning?

We're learning the basics of programming. The fundamentals.

How are we going to do that?

By learning the Python programming language.

Who is this class for?

It's for anyone that is interested in learning how to program.

Who is this class for?

- For those that want to become software engineers
- For those that want to use programming in your current field/job
- For those that are just curious

What are the requirements for taking this class?

- A computer that you can install software on
- Know how to create files and folders

Class schedule

- We meet Monday and Thursday
- Mondays we meet at the Refugee Center
- Thursdays we meet on Zoom
- Class starts at 6pm and ends at 7:30pm
- This course lasts 16 weeks
- Last day of class is March 14th

Let's talk about the tools we'll use in the class.

Zoom

Monday meetings will be held over Zoom.

Zoom

Zoom meetings will be recorded and made available in Canvas for you to watch whenever.

Zoom etiquette

When we meet using Zoom, please turn your **cameras on** and **mute yourself** after joining.

Slack

We'll use Slack to communicate.

Slack

Install the Slack app on your computer and on your phone.

Slack

Use your real name in your Slack profile so it's easy to find you.

Canvas

All of the content related to this class will be in Canvas.

Slack and Canvas

You should have received an invitation to Slack and to Canvas. Create your accounts if you haven't and let me know if you have any issues.

ChatGPT And Similar Tools

ChatGPT, is a new type of software tool called an LLM (short for large language model). You interact with it in a conversational manner. It uses machine learning to understand and generate human-like responses based on the input it receives

ChatGPT

You can use ChatGPT to

- **Explain Concepts:** ChatGPT can break down complex Python programming concepts into easier-to-understand explanations.
- **Provide Examples:** It can generate examples of Python code to illustrate how certain functions or structures work.
- **Answer Questions:** If you have specific questions about Python or coding in general, ChatGPT can provide answers or guide you to resources for further learning.

Responsible Use

Not a Replacement for Doing: While ChatGPT is helpful, *it should not be used to complete your programming assignments*. The goal of this course is to build your own coding skills, which requires hands-on practice and problem-solving.

The true value of this course comes from applying what you learn through your own coding efforts. ChatGPT should be used responsibly to complement your studies, not replace the invaluable experience of learning by doing.

If you use ChatGPT to assist with your coursework, we ask that you include your conversation/transcript with your submission.

Visual Studio Code

Visual Studio Code, or VS Code, is a text editor. A text editor is a tool used to write code.

Let's talk about the concepts we'll learn about in the class.

- Programming
- Programs
- Python
- Thinking like a computer
- Variables and values
- Loops
- Conditionals
- Functions
- Dictionaries
- Lists
- And more

What is Python?

Python is a programming language.

What is a programming language?

A programming language is a tool. It's like human language, but for communicating with computers.

What is a programming language?

A programming language allows you to write instructions for your computer.

Computer instructions

These **computer instructions** are referred to as "**code**".

What is programming?

Programming is the act of creating a program.

What is a program?

A program is set of instructions (code) for a computer to execute.

What does Python code look like?

```
from datetime import date

birth_year = input("Enter your birth year: ")
birth_month = input("Enter your birth month: ")
birth_day = input("Enter your birth day: ")

def calculate_age_in_years(birthdate):
    today = date.today()

    return today.year - birthdate.year - ((today.month, today.day) <
        (birthdate.month, birthdate.day))

birthdate = date(int(birth_year), int(birth_month), int(birth_day))
print("You are " + str(calculate_age_in_years(birthdate)) + " years old")
```

Syllabus

This course is divided into sections, each covering a new concept. Each section will take 1 week with some taking 2.

Syllabus: sections

1. Introduction
2. Variables, values, and user IO
3. Conditionals
4. Loops, lists and hashes
5. Functions
6. File IO
7. Dictionaries
8. And more

Syllabus: homework

- We'll have homework assignments every week
- I'll specify when the assignment is due
- Homework can be found in Canvas
- Should be submitted through Canvas

This week's homework

- Install Python
- Install VS Code
- Setup VS Code for Python
- Plus extra credit reading

How can you succeed in this class?

- Do your homework
- Write the code yourself, no copy/paste
- Run all of the code that you write
- Take notes
- Use Slack
- Ask questions
- Work with your classmates

How can you fail in this class?

- You don't write code
- You don't take notes
- You don't ask questions

Before you go

- Bring your laptops to class on Thursdays
- Join Slack and Canvas if you haven't already
- Get started on the homework ASAP
- Take roll (!)

