

Lab 3: Object-Oriented Programming + Boolean Logic

Introduction

For this lab, we're going to practice using the Boolean logic that you've been learning, while getting a refresher on loops, lists and reading files in Python. This lab is written for **python3**, and has 4 main components:

- 1) A comma-delimited data file called "homes.csv," which is a sample of the local real estate listings in the area.
- 2) A DataApi class (located in lab3_starter.py), which contains methods to parse and search the homes.csv file.
- 3) A Home class (located in home.py), which converts a line of text (from the homes.csv file) into an object that is easier to manipulate.
- 4) A "main" execution block (located after the DataApi class in lab3_starter.py), which tests that the DataApi class is working as it should. You can think of this as a primitive user interface.

Your Tasks

- 1) Get oriented with the lab components:
 - a) Take a look at the homes.csv file:
 - What are the available fields?
 - What are the special characters that are being used to specify line breaks?
 - b) Take a look at the Home class in home.py:
 - What are the variables and their data types?
 - To create an instance of the class, what is the required parameter?
 - What is the purpose of the `__str__` method?
 - c) Take a look at the DataApi class in lab3_starter.py:
 - How does the slice notation works in the `read_file` method? What is the significance of the "[1:]?"
 - What is the Big-O notation of the `get_number_of_homes_in_foreclosure` method?
 - What methods are already implemented for you? Do you understand what they're doing and how they work? If not, ask questions or experiment.
 - d) Run the lab3_starter.py in the console window / command prompt. See what it does, and how the `__main__` part of the execution block corresponds to what you're seeing in the window.
- 2) Implement the `get_avg_num_of_bathrooms` method in the DataApi class. Demonstrate that this method works in the `__main__` section of lab3_starter.py.
- 3) Implement the `get_homes_that_match_any_param` method in the DataApi class. Demonstrate that this method works in the `__main__` section of lab3_starter.py.
- 4) Implement the `get_homes_that_match_all_params` method in the DataApi class. Demonstrate that this method works in your `__main__` function.