**Python Mega-Course: 10 Apps Notes:**

# Section 1 – Welcome:

## Course Introduction:

* Just an overview.
* This course will include how to program with Python from scratch, so I may end up skipping a lot of notes for the first 10 sections or so.
* There are **39 Sections**.
* There’s a Discord channel: <https://discord.gg/QWArvbdZVZ>

# Section 2 – Getting Started with Python:

## Section Introduction:

* Sounds like we use VSCode for this class. Sweet.

# Section 3 – The Basics: Data Types:

## Python Interactive Shell:

* For Windows, run **py -3** in the terminal to start the interactive shell.
* Useful for testing some throwaway code; interactive shell doesn’t save code.
* Creating .py files is better for creating reusable code.

## Terminal:

* Tip about splitting the terminal in two. This way we can run both the **powershell terminal** and the **Python Interactive Shell** side-by-side.
* This allows us to run test code in the interactive code and run .py code in the terminal.

## Data Type Attributes:

* Showed a useful command, **dir()**, which can be used very effectively in the Interactive Shell to find out what operations can be performed on a given subject (methods or properties).
  + Running **dir(list)** shows everything that can be performed on a list.
  + Running **dir(int)** shows everything that can be performed on an integer.
* He used the example of running **dir(str)** to see what can be performed on a string, chose **“upper”** from the list, then ran **help(str.upper)** to find out what it does.
  + This showed that “upper” is a method, which “Returns a copy of the string converted to uppercase”.
* Note: Functions follow the naming convention **function()** while methods follow the naming convention **.method()**.

## How to Find Out What Code You Need:

* To find a complete list of built-in functions, run **dir(\_\_builtins\_\_)**. These are functions that aren’t attached to a specific data type.
* We didn’t find an “average” or “mean” function, but there was a “**sum**” function. Between that and **len**, we can calculate an average for a list of floats.

## What Makes a Programmer a Programmer:

* Three things you need to know to make any program:
  + Syntax
  + Data Structures
  + Algorithm

## How to Use Datatypes in the Real World:

* In our example of creating a Dictionary of student names and grades, would we manually create this dictionary in the real world? Unlikely. The data would be stored in something like an Excel file.
* There are ways to automatically input data from an Excel file into Python.
* We will be doing this later in the course.

# Section 4 – The Basics: Operations with Data Types:

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