**Fundamentals of Programming with Python**

Lecture 01: Introduction to Python

* Familiarity with Google Colab, Anaconda, Jupyter Notebook, and GitHub
* Learn logical thinking by playing blockly games: Maze
* Learn about Python data types and basic Mathematical Operations

Lecture 02: Conditional Programming

* Learn if-else if-else and while loop by playing blockly games: Maze, Bird

Lecture 03: Python Data Types and String Manipulation

* Python data types: String, Integer, Float, Boolean
* Mathematical Operations, Comparison Operators, Logical Operators, and Membership Operators
* String manipulation

Lecture 04: Python data structure

* Python Data Structure: List, tuple, dictionary, set

Lecture 05: Conditional logic, loop, and writing functions in Python

* How to write if-else, while and for loop in Python
* Writing functions in Python
* LeetCode problems

Lecture 6: LeetCode Problems

* Math functions
* Application of list, set, and dictionary
* Solving the same problem in multiple ways
* LeetCode problems: HW 2 solution

Lecture 07: Mathematical operations in Python: NumPy

* Comparison between List and NumPy array
* 1D and 2D NumPy array
* Mathematical and Matrix operation in NumPy array
* NumPy array slicing and filtering

Lecture 08: Data Analysis in Python: Pandas

* How to look at the data?
* Good data or bad data?
* How to read a csv file
* How to check data types and is there any missing values?
* Data Statistics