Python Course

Module 1

- Introduction to Python
- Features of type and why to choose python
- Python Syntax and Keywords
- Variables and Data Types
- Scopes and Identifiers
- Python String
- Casting
- Operators
- **Assignment:**
  - String Methods and It's operations
  - Operators
  - Casting operations

Module 2

- Data Structures
  - List
  - Tuple
  - Dictionaries
  - Sets
  - Frozensets
- Decision Making Statements
- Nested Statements
- For Loop
- While Loop
- Break, Continue and Pass Statements
- **Assignment:**
  - CRUD operations on Data Structures
  - Logical Based on conditions and Loops

Module 3
- Functions
- Function Arguments
- Types of Arguments
- Lambda
- Built-In Functions

- ■ Range, zip, sum, abs, sorted, **map, filter, reduce**.

Module 4
- ● What is Object Oriented Programming
- ● Classes, Objects and Constructors
- ● Inheritance
  - ■ Single
  - ■ MultiLevel
  - ■ Multiple
  - ■ MRO
- ● Duck-Typing
- ● Ploymorphism
- ● Encapsulation
- ● Properties
- ● Abstract Classes and Methods
- ● Stub file

Module 5
- ● Exception Handling
- ● Regular Expression
- ● Global Keyword
- ● GUI Programming
  - ■ Introduction to tKinter
  - ■ Widgets
    - ◆ Labels, buttons, entry, text, frame, etc.
  - ■ Get User Input and more.
- ● Assignment:
  - ■ Create their own regex pattern for example (phone number)
- ● GUI Projects In class
  - ■ Temperature Converter
  - ■ Building Text Editor

--------- IF EXTENDS TO MORE THAN 25 CLASSES --------

- ● File Operations
- ● List Comprehension
- ● Multithreading
- ● Multiprocessing
- ● Iterators
- ● Dunder methods

- Meta classes
- Decorators
- Generators
- Context manager
- Introduction to pyGames
- Basics of Game Programming
- PyGames Concepts
- Sprites
- Custom Events
- Sprite Images and more
- Snake Game - Project