### ****12-Week Python Course Outline for Beginners****

#### ****Course Description:****

Unlock the power of programming with this beginner-friendly, hands-on Python course designed for high school students, college students, and adult learners with no prior coding experience. Over 12 weeks, you’ll learn how to think like a programmer, solve real-world problems, and build your own interactive programs using one of the most popular and versatile programming languages: Python.

Starting with the fundamentals of writing simple scripts and understanding variables, you’ll gradually progress into more complex topics such as loops, functions, conditionals, file handling, and object-oriented programming. The course emphasizes practical learning through live coding, interactive exercises, and mini-projects that build confidence and reinforce key concepts.

#### ****What You’ll Learn:****

* How to write, run, and debug Python code using Google Colab (https://colab.google/)
* The building blocks of Python: variables, loops, functions, and conditionals
* Working with strings, lists, dictionaries, and files
* Fundamentals of object-oriented programming (OOP)
* How to apply problem-solving strategies like recursion and searching
* Real-world applications: text analysis, file manipulation, basic data projects
* Chapters based off of <https://greenteapress.com/wp/think-python-3rd-edition/>

#### ****Who This Course is For:****

* High school students (grades 9 and up)
* College students or adult learners with no programming background
* Anyone curious about coding and looking to get started with Python

#### ****Course Features:****

* 12 weeks of structured, progressive learning
* Weekly live instruction and guided coding sessions
* Hands-on exercises and weekly mini-projects
* Final project presentation to apply all you've learned
* No software installation required — just a browser and a Google account!

#### ****Prerequisites:****

* Basic comfort with using a computer and web browser
* No prior programming experience required

#### ****Week 1: Introduction to Programming****

* **Chapters:** 1 (Programming as a way of thinking)
* **Focus:**
  + What is programming? Why learn it?
  + Writing your first Python program
  + Intro to Colab and Python syntax

#### ****Week 2: Variables and Expressions****

* **Chapters:** 2 (Variables and Statements)
* **Focus:**
  + Variables, expressions, and types
  + Input/output functions (print, input)
  + Type casting

#### ****Week 3: Functions and Code Reuse****

* **Chapters:** 3 (Functions), 4 (Functions and Interfaces)
* **Focus:**
  + Defining and calling functions
  + Parameters and return values
  + Modular programming

#### ****Week 4: Logic, Conditionals, and Recursion****

* **Chapters:** 5 (Conditionals and Recursion), 6 (Return Values)
* **Focus:**
  + if, elif, else, comparison operators
  + Simple recursion (factorial, countdown)
  + Understanding the return statement

#### ****Week 5: Loops and Searching****

* **Chapters:** 7 (Iteration and Search)
* **Focus:**
  + for and while loops
  + Basic search techniques (linear search)
  + Loop control (break, continue)

#### ****Week 6: Working with Text****

* **Chapters:** 8 (Strings and Regular Expressions)
* **Focus:**
  + String operations
  + Basic regex

#### ****Week 7: Lists and Tuples****

* **Chapters:** 9 (Lists), 11 (Tuples)
* **Focus:**
  + List indexing, slicing, methods (append, pop, etc.)
  + Tuple immutability
  + Iterating through lists/tuples

#### ****Week 8: Dictionaries and File I/O****

* **Chapters:** 10 (Dictionaries), 13 (Files and Databases)
* **Focus:**
  + Key-value pairs, dictionary operations
  + Reading/writing text files

#### ****Week 9: Classes and Object-Oriented Programming****

* **Chapters:** 14 (Classes and Functions), 15 (Classes and Methods), 16 (Classes and Objects), 17 (Inheritance)
* **Focus:**
  + Creating your own classes
  + Methods, \_\_init\_\_, instance vs. class variables
  + Inheritance basics

#### ****Week 10/11/12: Final Project and Wrap-Up****

* **Chapters:** 12 (Text Analysis and Generation – optional bonus)
* **Focus:**
  + Review key concepts
  + Introduction to text generation if time permits