Python Full Stack Road map

1. Introduction and basics

- Installation
- Python 3 (info)
- Variables
- Print Function
- Input from User
- Data Types
- Type Conversion
- First Program

2. Operators

- Arithmetic Operator
- Relational Operator
- Logical Operator
- Assignment Operator
- Compound Operator

3. Conditional Statements

- If Else
- If
- Else
- Elif (else if)
- If Else Ternary Expression
- Switch case

4. While Loop

- While loop Logic Building
- Series Based Questions
- Break
- Continue
- Nested While loops
- Pattern-Based Questions
- Pass
- Loop else

5. Lists

- List Basics
- List Operations
- List Comprehensions/Slicing
- List Methods

6. Strings

7. For Loops

- Range Function
- For loop
- Nested For loops
- Pattern-Based Questions
- Break
- Continue
- Pass

8. Functions

- Definitions
- Call
- Function Arguments
- Defaults Arguments
- Docstrings
- Scope
- Special Functions Lambda Map, and Filter (I will need a help in this)
- Recursion

9. Dictionary

- Dictionary Basics
- Operations
- Comprehensions
- Dictionaries Methods

10. Tuples

- Tuples Basics
- Tuples Comprehensions/Slicing
- Tuple Functions
- Tuple Methods

11. Set

1. Sets Basics
2. Sets Operations
3. Union
4. Intersections
5. Difference and Symmetric Difference

12. Object Oriented Programming (can lead with expert)

- Classes
- Objects
- Methods Calls
- Inheritance and its Types

- Overloading
- Overriding
- Data hiding (Encapsulations)
- Operators Overloading

13.File Handling

- Files basics
- Opening Files
- Reading Files
- Writing Files
- Editing Files
- Working with different extensions of file
- With Statements

14.Exception Handling

- Common Exceptions
- Exception Handling
- Try
- Except
- Try except else
- Finally

15.Data Structure

- Stack
- Queue
- Linked Lists
- Sorting

16.Git and Github

- Git Version Control System
- GitHub Profile building
- Manage your work on GitHub

17.Maths

- Matrix
- Vectorization
- Linear algebra
- Probability

18.Machine learning

- Basic liberaries
- Pandas
- Numpy
- Metplotlib
- Tensorflow

- pytorch
- Supervised, unsupervised, semi supervised and reinforcement learning.

19. Machine learning algorithms

20. Practical of any machine learning model from scratch

21. Deep learning and its conceptual understanding(most of the topics of deep learning will be covered by below mentioned book)

https://sourestdeeds.github.io/pdf/Deep%20Learning%20with%20Python.pdf

22. Brief description of computer vision main focus on (GAN)

23. Brief description of NLP main focus on (hugging face)

24. Virtual Environment(mentioned below teach by Arshi khan)

1. Virtual Environment setup

25. Prompt engineering

methods of effective prompt generation

26. Chat bots development

Chat gpt connection (with or without customized data)

27. Deployment and integration

28. Generating Api keys

- Connection with website
- Connection with an app

29. Web Applications (optional will be teach by professional)

- Flask
- flutter