SUMMER ANALYTICS

MODULE 01: INTRODUCTION TO PYTHON

Hi guys!

Good to have you on this journey with us. This introductory week is just an initial nudge into the vast world of Data Analytics and Machine Learning. You will learn basics in Python which will help you familiarise with the language. These concepts will be used in applications of Python in all other fields as well.

TOPICS:

1. Variables, Data Types, Operators & Strings
   The topics covered here are common to programming languages other than Python as well.

TASK 1	Introduction to the topics (till 21:10)	Introductory video in Jupyter environment
TASK 2	Data types in Python	Detailed video on data types in python
TASK 3	Variables and expressions	Detailed video on variables and expressions in python
TASK 4	Strings	Detailed video on using strings in python

2. Data Structures
   Data can be stored in various forms depending on the type of information stored and how it will be accessed. This set of videos will introduce you to the various patterns or structures of storing data and how to store and extract information from them.

TASK 1	Data Structures (till 33:10)	An introduction to Lists, Sets, Tuples and Dictionaries
TASK 2	Lists and Tuples	For better understanding of Lists and Tuples
TASK 3	List comprehension	Don't worry if you come across any expressions you're not familiar with. You'll know what they mean by the end of the week.
TASK 4	Tuples	Refer to the examples for better understanding.
TASK 5	Tuple unpacking	This concept comes in handy for future applications of tuples
TASK 6	Dictionaries	Detailed video on Dictionaries
TASK 7	Sets	Detailed video on Sets

3. Booleans and Loops
   Boolean (True/ False) Values are frequently used to formulate conditions for loops. Loops are extremely useful in iterating through data structures or for applying some operator to multiple entities.

TASK 1	Conditionals and Booleans (till 40:37)	Introduction to If/Else statements in Python
TASK 2	If statements and Conditionals	Detailed Video on If/else statements
TASK 3	For and While Loops (till 50:53)	Introduction to For and While Loops
TASK 4	Loops	For better understanding
TASK 5	Exception Handling	Get acquainted with Try/ Else/ Except Blocks

4. Functions
   Functions act as separate pieces of code that can be called within the main code to make it more readable. These are extremely useful when the same function needs to be performed multiple times.

TASK 1	Functions	Introduction to Functions
TASK 2	Functions	A more detailed video on Functions
TASK 3	What are Methods	A brief introduction to methods
TASK 4	Lambda Functions	An introduction to lambda functions. These are useful in performing functions in just single-line statements.

5. Test your knowledge this far! Don't worry. This is just a non-evaluative component. This notebook will help you understand the above concepts better. Make sure to give each question a try yourself before you look at the solutions.

Self Check Notebook	Give these questions a try! (Download the .ipynb file and open with Jupyter Nb)
Self Check Notebook Solutions	Verify your answers here (Download the .ipynb file and open with Jupyter Nb)

6. This component is graded. Feel free to use the internet to understand the concepts better. Do these questions independently for the best results.

Click here to attempt the test.