

# Python for Professionals

For beginners to Python with no coding knowledge, with a focus on foundation for **Data Analysis** and **Data Visualization**

## Learning Outcomes

By the end of the course, you will know:

- Fundamental concepts in programming
- Use of Python to do basic data wrangling
- Applied data analysis with Python
- Data Visualization with Python
- Introduction to Data Science and Machine Learning (TBC)

## Who should attend?

- Aspiring data professionals who would like to upskill themselves
- Anyone who is currently using Microsoft Excel and would like to learn how to become more efficient in their work
- No prior experience or background required in the field

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## Prep: Setting Up

- Setting up: Anaconda; Jupyter Notebooks

*In the event that class moves faster than expected, there will be additional hands-on challenges.*

## Module 1: Python Fundamentals

- Basics: Variables and Types
- Lists: Slicing and dicing; indexing; extending; deleting; list comprehension
- Loops: While loop; for loop; loop over lists; loop over list of lists
- Control flow: if...else
- Functions and packages: Writing your own functions; importing packages selectively

*In the event that class moves slower than expected, we will cut down on instructional periods and focus on hands-on practice.*

## Module 2: NumPy and Pandas

- NumPy: Your first NumPy array; NumPy functions; NumPy aggregation; Broadcasting; Boolean; Sorting
- Dictionaries and Tuples: Creating and accessing dictionaries; Manipulation
- Pandas: CSV to dataframes; indexing; filtering, loc versus iloc; pandas functions; add columns, etc.
- Boolean logic: and, or, not; less than, greater than, etc

## Module 3: Data Visualization and Data Science

- Data Visualisation using Matplotlib and Seaborn: Line plot; scatter plot; customisations
- Introduction to Data Science and Machine Learning (TBC)