## Python zero-to-miso

This Python training course is designed to help our E&S Data team transition their data analytics work to Python. The course is divided into four sessions, with each session a specific topic will be covered. The goal is by the end of the course, participants will have the fundamental skills and knowledge necessary to efficiently work with Python for Data Wrangling, Data Manipulation using DataFrames, Lists, and Tuples, and Data Visualisation through plotting. Lastly, the participant should have gained good coding etiquette to write simple programs that are readable, maintainable, and extendable.

Session 00\_Welcome

This session serves as an introduction to the training course. We will provide an overview of Python as a language, its importance in data analytics, and the objectives of the course. Participants will receive guidance on how to set up their Python environment prior to this session using tools like Anaconda, Jupyter Notebooks. The main goal is to introduce what is data, the data types and how they are represented by a computer. Lastly, to build intuition on how scripts, arithmetic, and logic work in a scripting environment.

Session 01\_Order\_Iterations

The first session will dive into the fundamentals of data wrangling in Python. This session introduces basic ways that python “holds” data. The format of List, Tuples, Dictionaries. How to put data in them, accessing, indexing, and changing values. Loops and if-else statement will be introduced as a more advanced practices. Repetitive practice will be the focus of this session as intuition is difficult to build here but will be essential for the next session.

Session 02\_DataFrames

In this session, we will focus on working with DataFrames, data structure provided by pandas DataFrame. Participants will learn how to create, manipulate, and analyse DataFrames, including operations such as merging, grouping, reshaping, and pivoting data. This session will also cover advanced techniques such as multi-indexing and regular expressions, which are particularly important when working with Qualitative heavy E&S Data.

Session 03\_Plotting

The final session will introduce participants to data visualisation techniques. The matplotlib and seaborn library with previously learnt pandas skills for creating plots and charts. Participants will learn how to customise their visualisations, modifying axes, colorus, labels, and legends. Plotting using code is not easy especially in python, which is less friendly than in comparable libraries like ggplot2. Therefore, we will cover a few plotting templates that are commonly used in descriptive statistics.