The What, Why and Whom...

As mentioned on the front page, the purpose of this series of courses is to teach the basics of Bayesian statistics for the purpose of performing inference. This is **not** intended to be a comprehensive course that teaches the basics of statistics and probability nor does it cover Frequentist statistical techniques based on the Null Hypothesis Significance Testing (NHST). What it does cover is:

- The basics of Bayesian probability
- Understanding Bayesian inference and how it works
- The bare-minimum set of tools and a body of knowledge required to perform Bayesian inference in Python, i.e. the PyData stack of NumPy, Pandas, Scipy, Matplotlib, Seaborn and Plot.ly
- A scalable Python-based framework for performing Bayesian inference, i.e. PyMC3

With this goal in mind, the content is divided into the following three main sections (courses).

- Introduction to Bayesian Statistics
- Introduction to Monte Carlo Methods
- PyMC3 for Bayesian Modeling and Inference

Why Inference?

The purpose of the set of courses is to focus on **Inferential Statistics** as opposed to **Descriptive Statistics**.

All the samples in the group that we are interested in learning about make up a **population**. Populations can be described by **parameters** such