**Business Forecasting Assignment 3**

2) Sunspots are temporary phenomena on the Sun's photosphere that appear as spots darker than the surrounding areas. They are regions of reduced surface temperature caused by concentrations of magnetic field flux that inhibit convection. Sunspots usually appear in pairs of opposite magnetic polarity. Their number varies according to the approximately 11-year solar cycle. This dataset set shows the Monthly mean total sunspot number from January 2013 to December 2020.

3)Monthly mean total sunspot number data is typically collected using observational methods. The primary methodology for collecting this data involves:

Visual and Photographic Observations: Historically, astronomers made visual observations of the sunspots using telescopes equipped with special solar filters to protect their eyes. They would sketch the sunspots and note their positions on the solar disk. Photographic plates were also used to capture images of the sun, which could be analyzed later.

Modern Digital Observations: In recent years, digital technology has revolutionized sunspot observations. Solar observatories use digital cameras and instruments specifically designed for solar monitoring. These instruments capture high-resolution images of the sun, allowing for more accurate and detailed analysis of sunspot numbers.

Data Processing: Once the observations are collected, the data is processed to determine the monthly mean total sunspot number. This typically involves counting the number of individual sunspots and calculating the average for a given month.

The monthly mean total sunspot numbers are reported by various organizations and agencies, such as the Solar Influences Data Analysis Center (SIDC) in Belgium or the Royal Observatory of Belgium. They provide this data to the scientific community and the public.

4)The Monthly Mean Total Sunspot Number dataset is of great interest and it intrigued me because it helps us monitor and understand solar activity, predict space weather, study solar cycles, and explore potential connections between solar activity and Earth's climate. It plays a crucial role in various scientific fields and has practical applications in space weather forecasting and climate research. From my childhood I had deep interest in weather forecasting and earths climate and always wanted to get on my hands dirty with such a data and I am super excited to perform further forecasting methods on this dataset.