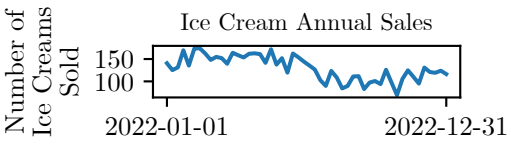
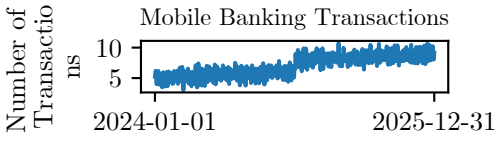
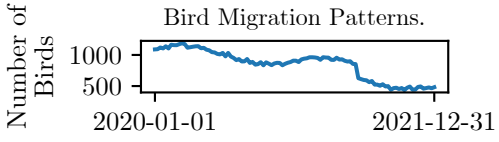


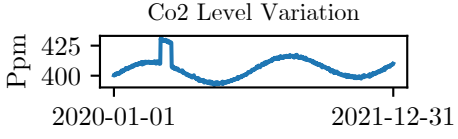
This scenario describes the change in sales of ice creams in a local shop throughout the year. The sales are expected to surge in the summer months due to the hot weather, with a sample rate of one reading per week for a duration of one year.



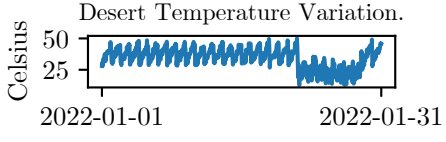
A bank is assessing the number of daily transactions carried out by its customers on a new mobile banking app in order to manage server load efficiently. The launch of a new advertising campaign aimed at digital natives is expected to incentivize usage. The measurements will be taken every day for two years (730 observations).



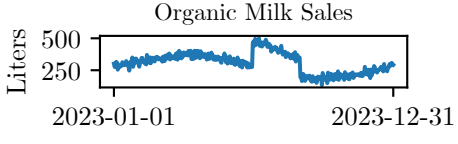
A time series analysis of endangered bird species X migration patterns over a 2 year period. An external event that might influence this time series could be deforestation. Sampled weekly, the number of species sighted would be expected to gradually decrease as their habitat is destroyed.



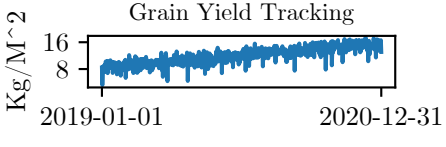
The scenario is about daily atmospheric carbon dioxide level in parts per million (ppm) collected by an observatory for around two years. An external event such as a volcanic eruption could potentially release a significant amount of CO2, influencing the readings of the time series. The sample rate is daily for approximately two years, resulting in a time series of around 730 observations.



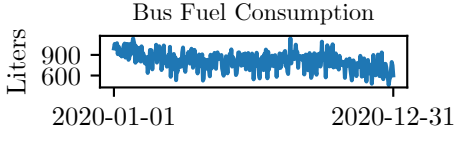
The scenario details the temperature variation in a desert over a duration of a month. The external event causing significant fluctuation is a rare week-long rainstorm. The frequency of measurement is hourly.



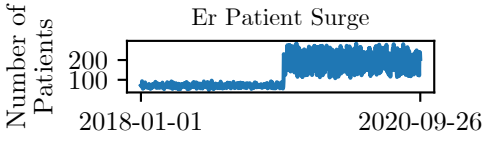
A grocery store wants to monitor the sales of organic milk every day for a year. A promotional event runs in the summer (July and August) when sales are usually lower, offering a 50% discount on the price of organic milk, which would potentially increase the sales during that period. The time series data is the daily sales of organic milk in the store for the year.



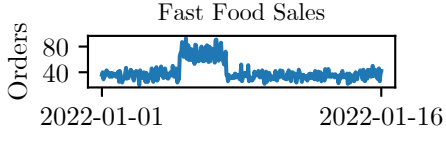
An agricultural research facility is tracking the productivity of a new grain variant in a controlled environment. External events such as carefully controlled rainfall and sunlight exposure are recorded every day for 2 years. The productivity is measured in kg per square meter.



The scenario involves tracking fuel consumption of a fleet of city buses over a span of a year. The external event is a city-wide renovation of roads and traffic light synchronization, aimed at improving traffic flow. This improvement in traffic flow might lead to less idling times for the buses, directly influencing fuel consumption rates. The fuel consumption is recorded every day for each bus, providing a daily sample rate for fuel usage. Due to the single variable (fuel consumption) and no missing values, this data forms a time series.



The scenario is a hospital ER register logging the number of incoming patients daily for a period of three years at a sample rate of once per day. A critical event such as a pandemic would significantly increase the numbers. It will be a single variable time series without missing values, and no value would exceed 1e6.



In a fast food restaurant, the number of orders for a new promotional item is recorded every hour for 15 days, resulting in a time series of 360 observations. An external event such as a viral social media post about the item could cause a surge in orders.