+ Time series examples:

- How to split data for Test / Train.

* Weather / stocks / correlations over time.

* Death rate / Births.

- Movement of a body.

+ Machine learning for Time series.

- Forecasts.

- Back into the past -> Imputation.
  (To fill in the gaps.)

- Used To detect anomalies.

+ Common Patterns

1. Trend. (upwards / downwards / seasonality)
   ↳ It can combine more than one.

2. White Noise.

3. Autocorrelation (occasional spike / lag)

4. Non - stationary Time series (change in series

+ Introduction To Time series:

(Notebook)

+ Splitting the data

1. Naive forecasting => Getting last value and assume it will be the same.

2. If there is seasonality, you want to split the data with a "season"

Training -> Validation -> Test.

3. Roll - Forward partitioning

"Fixed VS Roll forward"

+ Metrics To evaluate performance.

- MSE. / MAE. -> Size of the error/penalties

↓

Large errors more penalized

. MAPE => Size of errors relative To the value.

+ Moving average and differencing

Differencing => Removing seasonality

Moving average => getting a window, calculating the average

Combining both => Better than naive forecasting..

+ Trailing vs Centered Windows

Centered windows will often be more accurate.

+ Forecasting.

- Naive forecasting = Using data at T-1.
- Moving average.
- Moving average removing seasonality.
- We add moving average of detrended values.