Time Series Components

So far we have covered...

- Naive Approach
- Simple Average Method
- Moving Average Method
- Weighted Moving Average Method
- Simple Exponential Smoothing

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- Simple Average Method
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Historical Data

Increasing/Decreasing Trend

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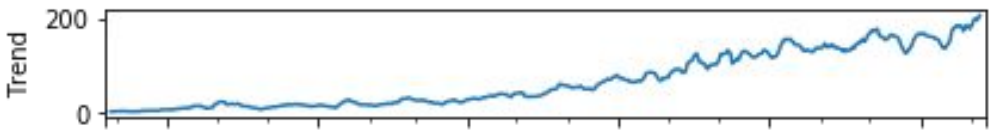
Time Series Components

- Time series components:

Trend Component



  - General tendency of data
  - Depicts long term movement
  - Trend may be upward downward or stable

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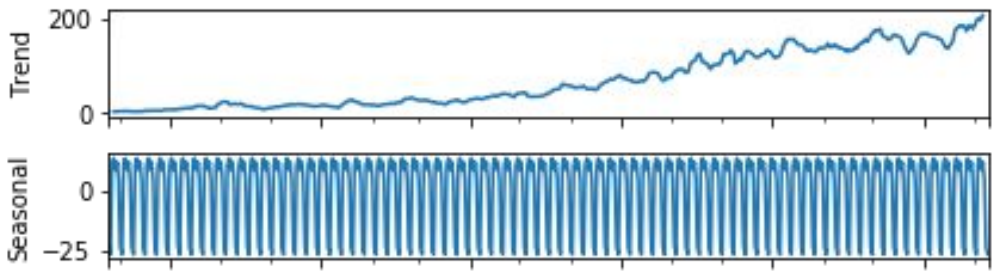
Time Series Components

- Time series components:

Trend Component

Seasonal Component



  - Repeated over certain period of time
  - Depicts short term movement
  - Rhythmic movements (regular and periodic)

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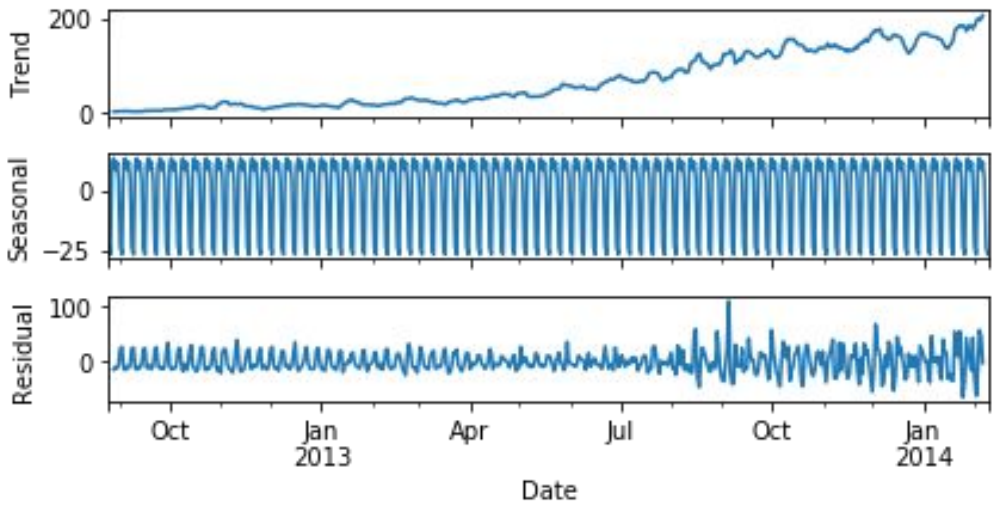
Time Series Components

- Time series components:

Trend Component

Seasonal Component

Irregular Component



  - Causing variation in variable
  - Purely random or irregular

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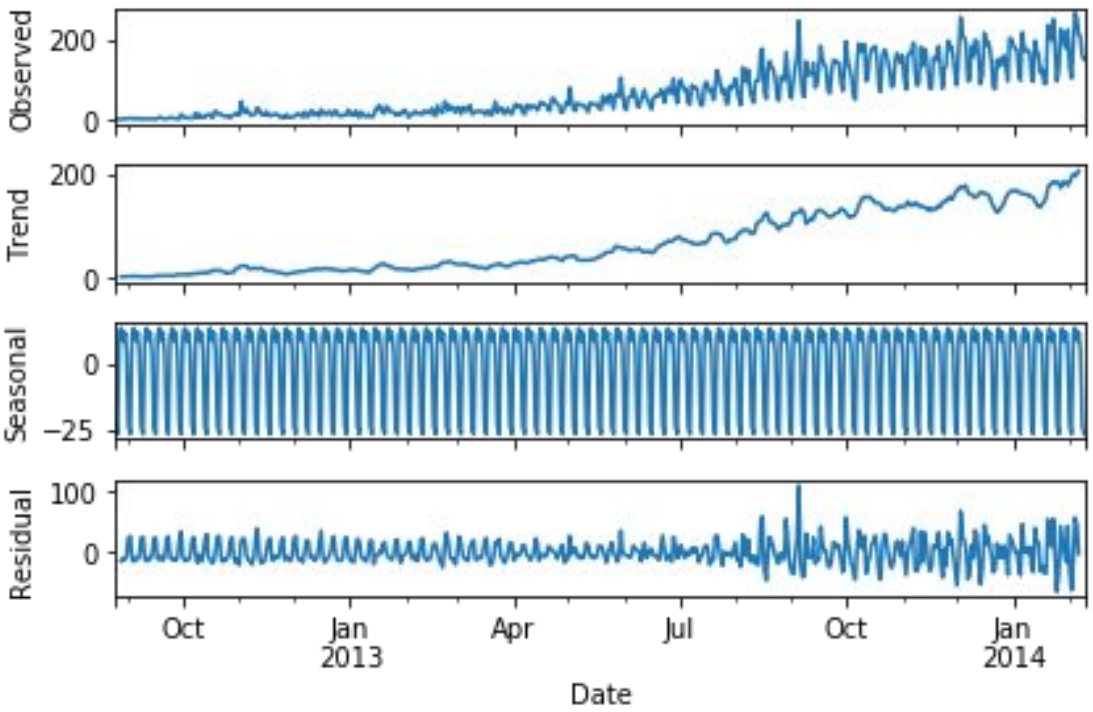
Time Series Components

Decompose a Time Series



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Components of Time Series

Additive Series

Multiplicative Series

- Increasing/decreasing trend
- Roughly same size peaks and troughs

Trend + Seasonality + Residuals

Components of Time Series

Additive Series

- Increasing/decreasing trend
- Roughly same size peaks and troughs

Trend + Seasonality + Residuals

Multiplicative Series

- Multiply trend with seasonal variation
- Significant difference in amplitude of peaks and troughs

Trend * Seasonality * Residual

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Thank You