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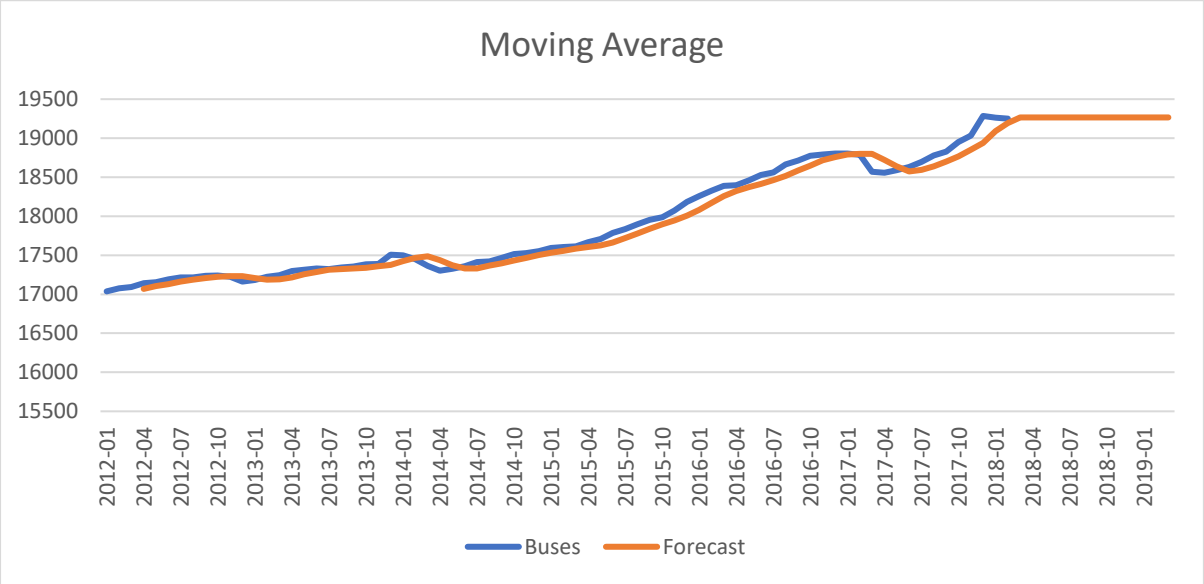
# Forecasting Bus numbers:

## Moving average:




Three month moving average

Measures of variability:

MAPE: 0.47

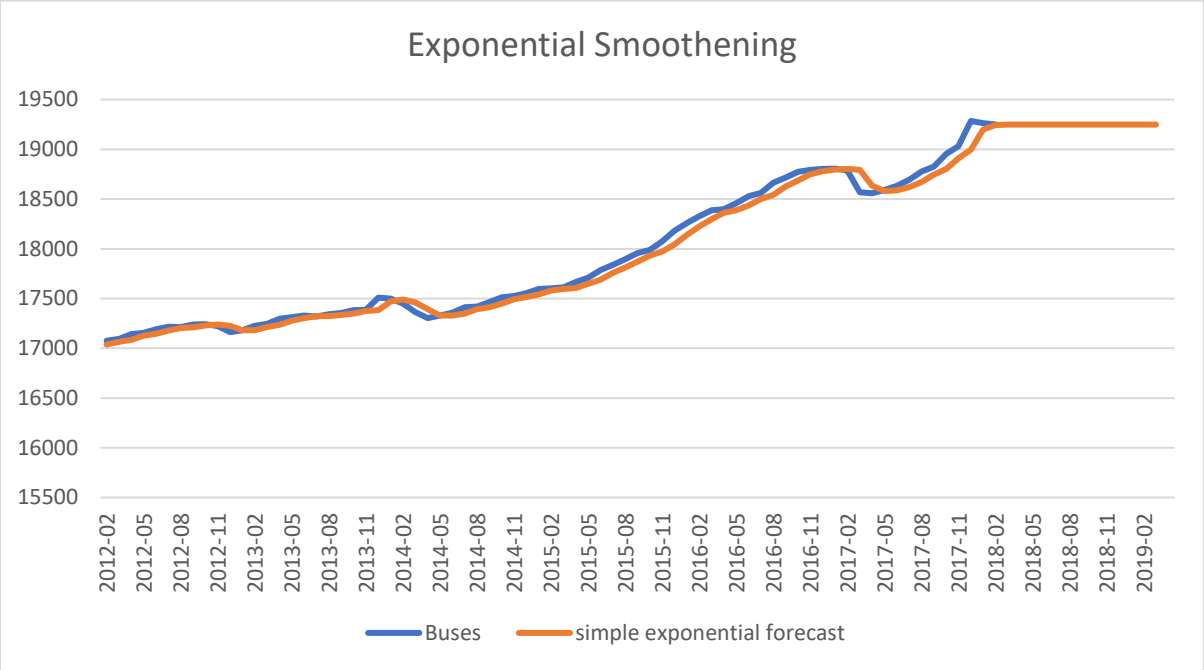
MAD: 86.19

MSD: 11010.29

## Inference:

The three moving average was the worst performing model of the three. As this model did not capture the trend, it performs very poorly.

## Simple Exponential :




Parameters values:

Alpha : 0.3

Measures of variability:

MAPE: 0.47

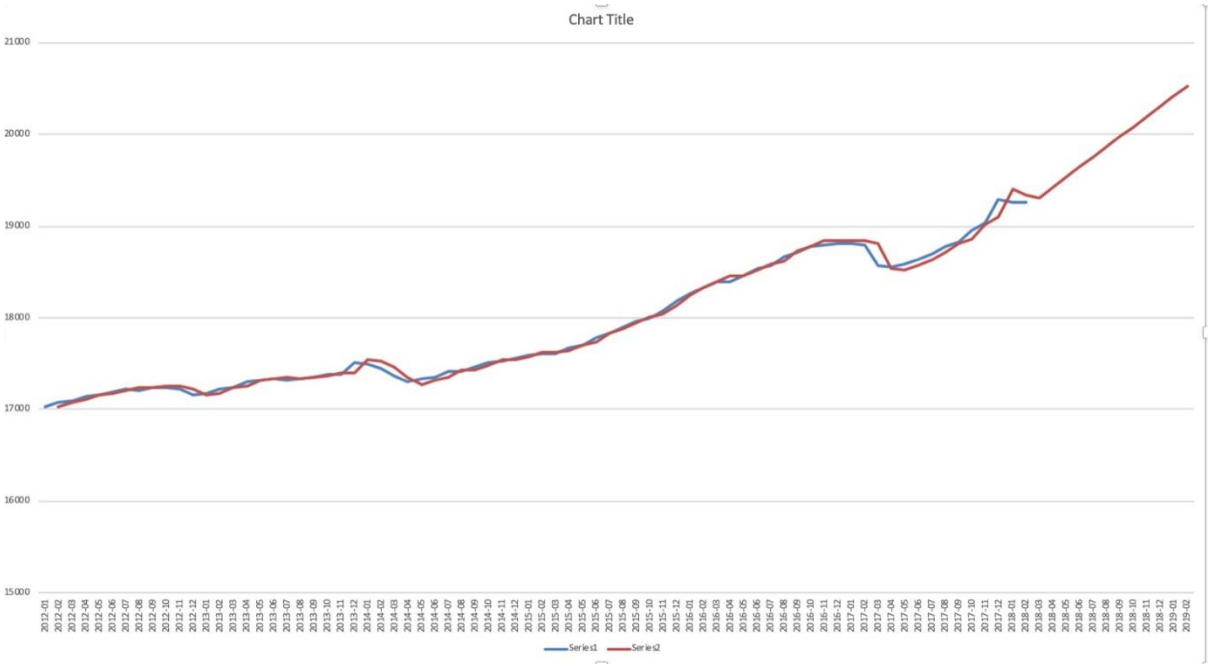
MAD: 86.19

MSD: 11010.29

# Inference:

In case of the exponential smoothening model we chose an alpha of 0.3. This was chosen as we wanted to focus more strongly on the immediate past numbers rather than focus on long term trends. This model gave a decent enough performance.

## Holt Exponential Smoothening:




Parameters values:

Alpha : 1

Gamma : 0.2475

Measures of variability:

MAPE: 0.211

MAD: 38.336

MSD: 3098.247

# Inference:

For the Holt Smoothening model, we used the solver to get alpha of 1 and gamma of 0.24. Like in the case of the previous model, we chose to focus on the immediate previous values rather than the long term values. This gave us the best performing model in terms of all three measures of variability. But we could be potentially overfitting due to high alpha value and affecting future values.