From newer to older

# Validation set: last 15 days of train

## STL = 365 trend, 7 freq, 7 period, robust

## STL = 85 trend, 7 freq, 7 period, robust

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Model = Naive drift

MAE: mean = 3502.48, sd = 7109.27, min = 0.6, max = 31054.49

MSE: mean = 79836799.04, sd = 234848403.82, min = 0.48, max = 1166548961.54

RMSE: mean = 4050.53, sd = 7964.29, min = 0.7, max = 34154.78

RMSLE: mean = 0.32, sd = 0.21, min = 0.09, max = 1.01

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Model = Naive seasonal

MAE: mean = 2866.03, sd = 6386.11, min = 0.7, max = 25137.32

MSE: mean = 83677568.74, sd = 258263049.64, min = 0.92, max = 1196501391.54

RMSE: mean = 3729.14, sd = 8352.91, min = 0.96, max = 34590.48

RMSLE: mean = 0.28, sd = 0.35, min = 0.08, max = 2.03

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Model = Exponential smoothing

MAE: mean = 2814.13, sd = 6233.6, min = 0.63, max = 24654.52

MSE: mean = 70040198.95, sd = 208249965.32, min = 0.67, max = 916931616.69

RMSE: mean = 3515.53, sd = 7594.82, min = 0.82, max = 30280.88

RMSLE: mean = 0.23, sd = 0.17, min = 0.09, max = 0.75

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Model = Linear

MAE: mean = 3459.81, sd = 7626.29, min = 4.22, max = 36815.79

MSE: mean = 93390105.67, sd = 288836948.82, min = 26.06, max = 1455995424.4

RMSE: mean = 4155.19, sd = 8724.94, min = 5.1, max = 38157.51

RMSLE: mean = 0.39, sd = 0.53, min = 0.11, max = 2.67

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Model = Linear + AutoARIMA

MAE: mean = 3604.89, sd = 8072.6, min = 4.89, max = 38382.68

MSE: mean = 96783775.09, sd = 308632906.1, min = 32.73, max = 1603049886.65

RMSE: mean = 4156.69, sd = 8916.6, min = 5.72, max = 40038.11

RMSLE: mean = 0.33, sd = 0.35, min = 0.11, max = 2.1

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Model = Linear + Random forest

MAE: mean = 3583.32, sd = 8002.78, min = 5.12, max = 38314.92

MSE: mean = 96052469.53, sd = 302511615.83, min = 38.81, max = 1561475813.16

RMSE: mean = 4155.51, sd = 8876.05, min = 6.23, max = 39515.51

RMSLE: mean = 0.34, sd = 0.39, min = 0.1, max = 2.1

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## baseline models

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Model = Naive drift

MAE: mean = 3502.48, sd = 7109.27, min = 0.6, max = 31054.49

MSE: mean = 79836799.04, sd = 234848403.82, min = 0.48, max = 1166548961.54

RMSE: mean = 4050.53, sd = 7964.29, min = 0.7, max = 34154.78

RMSLE: mean = 0.32, sd = 0.21, min = 0.09, max = 1.01

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Model = Naive seasonal

MAE: mean = 2866.03, sd = 6386.11, min = 0.7, max = 25137.32

MSE: mean = 83677568.74, sd = 258263049.64, min = 0.92, max = 1196501391.54

RMSE: mean = 3729.14, sd = 8352.91, min = 0.96, max = 34590.48

RMSLE: mean = 0.28, sd = 0.35, min = 0.08, max = 2.03

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Model = Exponential smoothing

MAE: mean = 2814.13, sd = 6233.6, min = 0.63, max = 24654.52

MSE: mean = 70040198.95, sd = 208249965.32, min = 0.67, max = 916931616.69

RMSE: mean = 3515.53, sd = 7594.82, min = 0.82, max = 30280.88

RMSLE: mean = 0.23, sd = 0.17, min = 0.09, max = 0.75

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# Validation set: 2017

## STL: 7 freq, 7 seasonal, 85 trend, robust

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Model = Exponential smoothing (no covariates)

MAE: mean = 5116.62, sd = 9896.89, min = 4.48, max = 38393.13

MSE: mean = 164412946.84, sd = 450503750.72, min = 28.32, max = 1833796514.55

RMSE: mean = 5958.47, sd = 11353.83, min = 5.32, max = 42822.85

RMSLE: mean = 0.69, sd = 0.78, min = 0.31, max = 4.4

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Model = Linear (trend + seasonality features)

MAE: mean = 2639.5, sd = 5292.82, min = 4.6, max = 21243.23

MSE: mean = 81261537.6, sd = 250978792.24, min = 29.46, max = 1212390953.88

RMSE: mean = 3923.55, sd = 8115.87, min = 5.43, max = 34819.4

RMSLE: mean = 0.48, sd = 0.25, min = 0.23, max = 1.29

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Model = Linear + AutoARIMA (calendar + cyclical features)

MAE: mean = 2926.01, sd = 6253.96, min = 4.83, max = 25884.62

MSE: mean = 88461466.49, sd = 272291133.42, min = 31.89, max = 1218547823.09

RMSE: mean = 3954.99, sd = 8533.44, min = 5.65, max = 34907.7

RMSLE: mean = 0.46, sd = 0.33, min = 0.19, max = 1.8

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Model = Linear + Random forest (calendar + cyclical features)

MAE: mean = 3023.34, sd = 6120.32, min = 4.91, max = 24538.09

MSE: mean = 93857560.67, sd = 278523809.53, min = 33.6, max = 1253212175.1

RMSE: mean = 4296.76, sd = 8683.05, min = 5.8, max = 35400.74

RMSLE: mean = 0.48, sd = 0.24, min = 0.26, max = 1.22

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## STL: 7 freq, 7 seasonal, 365 trend, robust

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Model = Linear (trend + seasonality features)

MAE: mean = 3046.03, sd = 6534.27, min = 4.16, max = 28588.28

MSE: mean = 98286888.96, sd = 292192049.04, min = 24.87, max = 1212049616.12

RMSE: mean = 4267.58, sd = 8948.44, min = 4.99, max = 34814.5

RMSLE: mean = 0.49, sd = 0.28, min = 0.22, max = 1.4

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Model = Linear + AutoARIMA (calendar + cyclical features)

MAE: mean = 5959.81, sd = 16077.21, min = 4.38, max = 86022.96

MSE: mean = 324237512.48, sd = 1344769719.96, min = 27.08, max = 7676345316.24

RMSE: mean = 6611.52, sd = 16748.89, min = 5.2, max = 87614.76

RMSLE: mean = 0.53, sd = 0.36, min = 0.2, max = 1.86

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Model = Linear + Random forest (calendar + cyclical features)

MAE: mean = 5370.76, sd = 15105.83, min = 5.27, max = 84914.55

MSE: mean = 309365404.75, sd = 1305675223.25, min = 37.2, max = 7563237010.71

RMSE: mean = 6538.93, sd = 16328.13, min = 6.1, max = 86966.87

RMSLE: mean = 0.54, sd = 0.35, min = 0.26, max = 1.81

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## baseline models

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Model = Naive drift

MAE: mean = 9198.75, sd = 17750.08, min = 3.84, max = 67076.19

MSE: mean = 486367393.42, sd = 1361201937.41, min = 22.88, max = 5703870251.1

RMSE: mean = 10119.45, sd = 19595.0, min = 4.78, max = 75523.97

RMSLE: mean = 0.72, sd = 0.54, min = 0.34, max = 2.45

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Model = Naive seasonal

MAE: mean = 5313.53, sd = 10042.0, min = 6.47, max = 43993.57

MSE: mean = 188739718.7, sd = 559681015.48, min = 71.08, max = 2938535402.64

RMSE: mean = 6431.06, sd = 12140.07, min = 8.43, max = 54208.26

RMSLE: mean = 0.62, sd = 0.45, min = 0.32, max = 1.89

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Model = Exponential smoothing

MAE: mean = 5116.62, sd = 9896.89, min = 4.48, max = 38393.13

MSE: mean = 164412946.84, sd = 450503750.72, min = 28.32, max = 1833796514.55

RMSE: mean = 5958.47, sd = 11353.83, min = 5.32, max = 42822.85

RMSLE: mean = 0.69, sd = 0.78, min = 0.31, max = 4.4

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