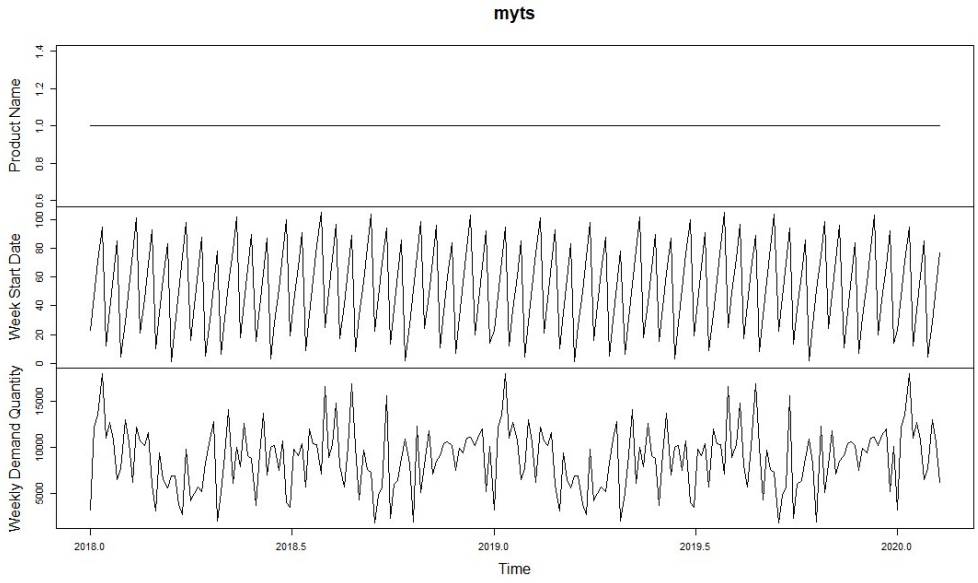
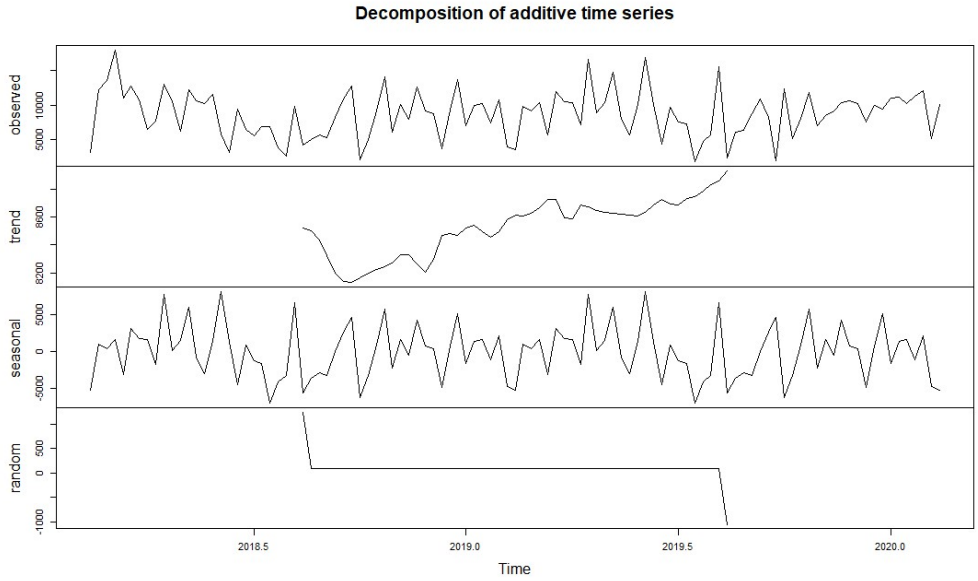
IE 714: Forecasting assignment Report

Exercise 1

Time series of weekly demand in training dataset.

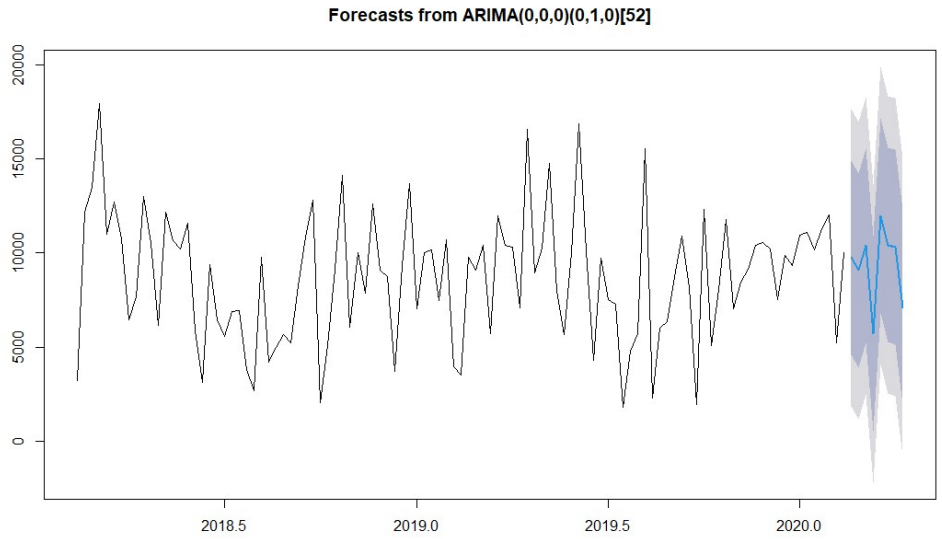


Decomposed training data



Exercise 2.1

Forecast by Auto-ARIMA model:



For arima :-

Mape = 34.15

Wmape = 32.93

Exercise 2.2

After manually finding p,d,q and applying it in arima model (p = 1, q = 1, d = 0.)

Mape = 37.11

Wmape = 32.01

Exercise 3

Using Winter's Holt model :- (Exponential Smoothing)

Mape = 28.11

Wmape = 30.81

We can observe Winter’s holt model is better than Arima model.

After Holding data

Using Arima ;-

Mape - 11.69

Wmape - 81.70

Using Winter's Holt :-

Mape - 36.37

Wmape - 151.23

After manual parameters changes

Using Arima:-

Mape - 37.11

Wmape = 32.01

Using Winter's Holt model :-

Mape = 28.11

Wmape = 30.81