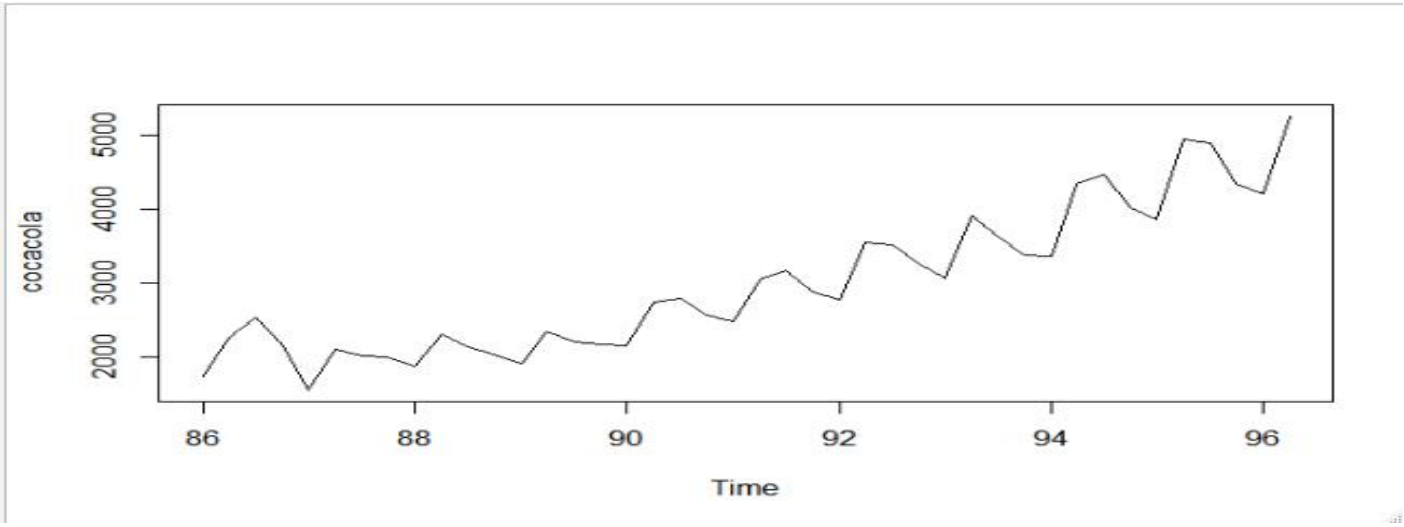
Forecasting – Coca-Cola

Visualization shows that it has level, trend, seasonality i.e. Additive Seasonality

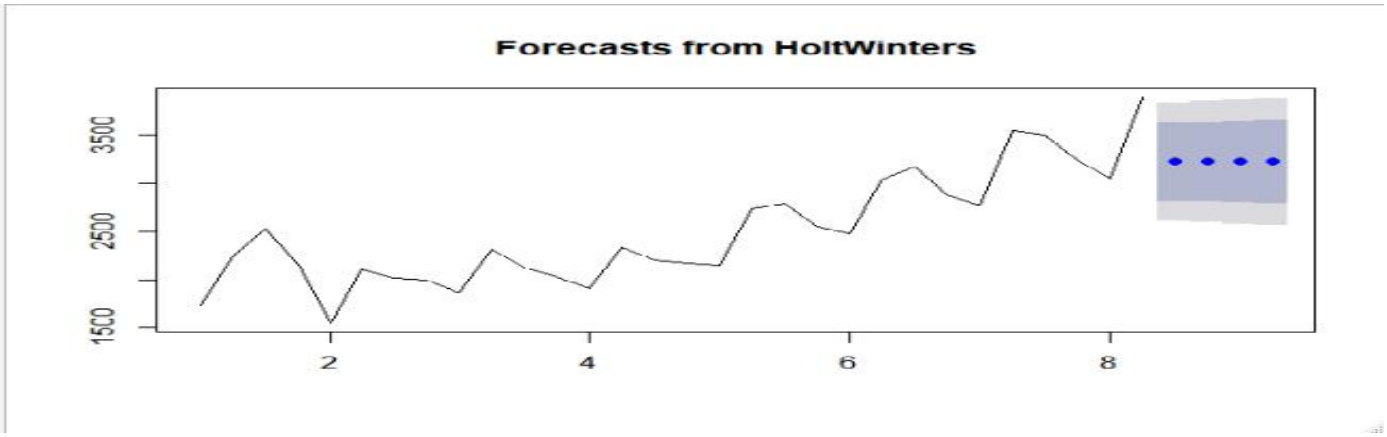


Using HoltWinters Function ➔

Optimum Values with alpha = 0.2 which is default value assuming time series data has only level parameter

Alpha = level smoothing, Beta = Trend smoothing, Gama = Seasonality Smoothing

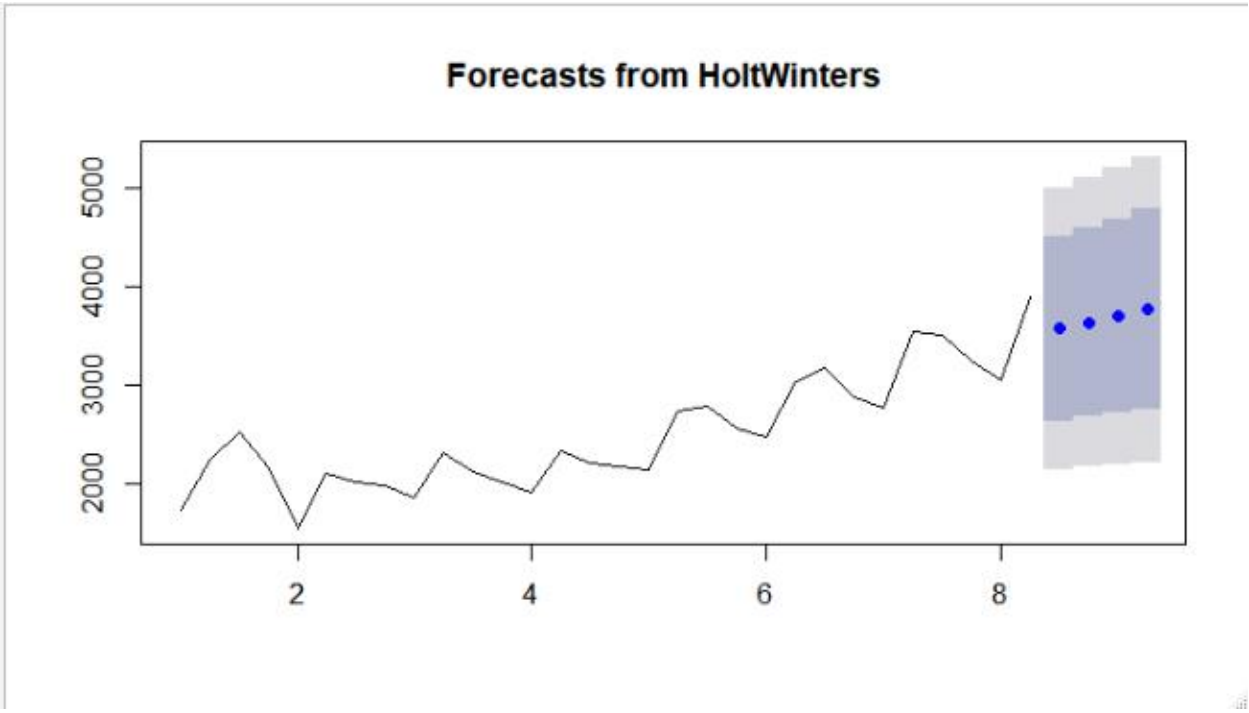
```
Smoothing parameters:
 alpha: 0.2
 beta : FALSE
 gamma: FALSE

Coefficients:
      [,1]
a 3225.544
```



By looking at plot the forecasted values are not showing any characters of train data.

Optimum values with alpha =0.2, beta=0.1 assuming time series data has level and trend parameter

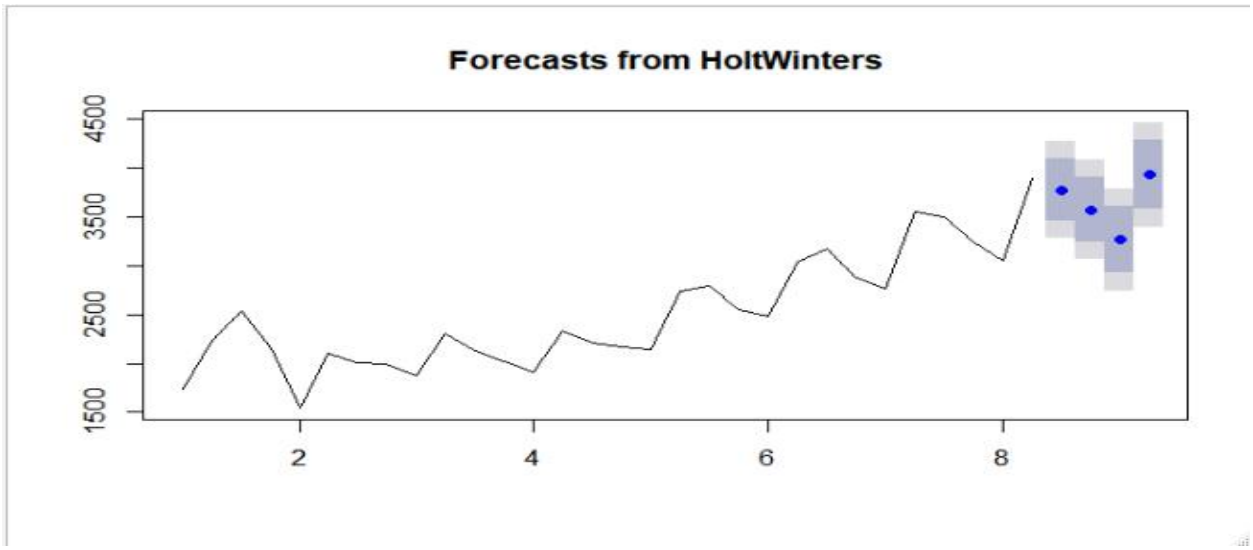
```
Smoothing parameters:
 alpha: 0.2
 beta : 0.1
 gamma: FALSE

Coefficients:
        [,1]
a 3511.00835
b   64.53687
```



By looking at the plot the forecasted values are still missing some characters exhibited by train data.

Optimum values with alpha =0.2, beta =0.1, gamma=0.1 assuming time series data has level, trend and seasonality

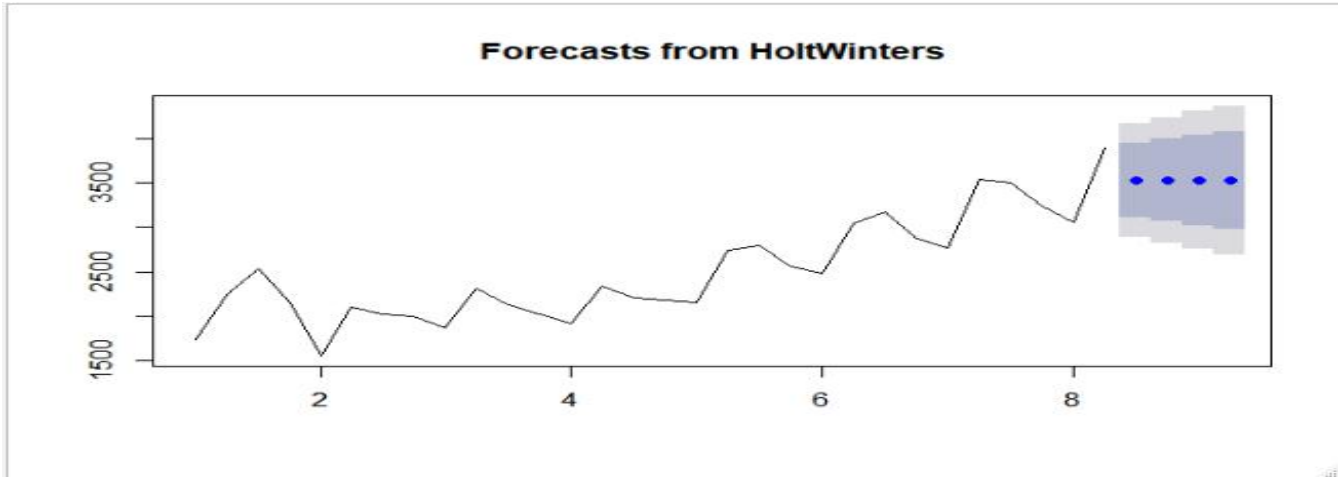
```
Smoothing parameters:
 alpha: 0.2
 beta : 0.1
 gamma: 0.1

Coefficients:
         [,1]
a  3309.55652
b    73.30491
s1  395.37160
s2  116.52079
s3 -264.43056
s4  329.28824
```



By looking at the plot the characters of forecasted values are closely following historical data.

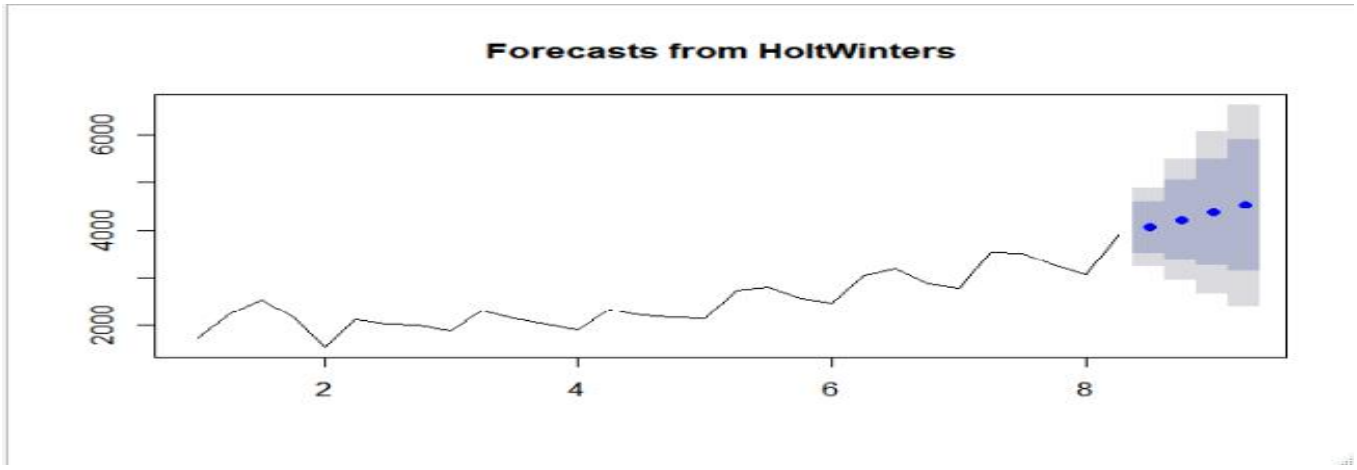
Without optimum values ➔

```
Smoothing parameters:
 alpha: 0.4922576
 beta : FALSE
 gamma: FALSE

Coefficients:
      [,1]
a 3533.182
```

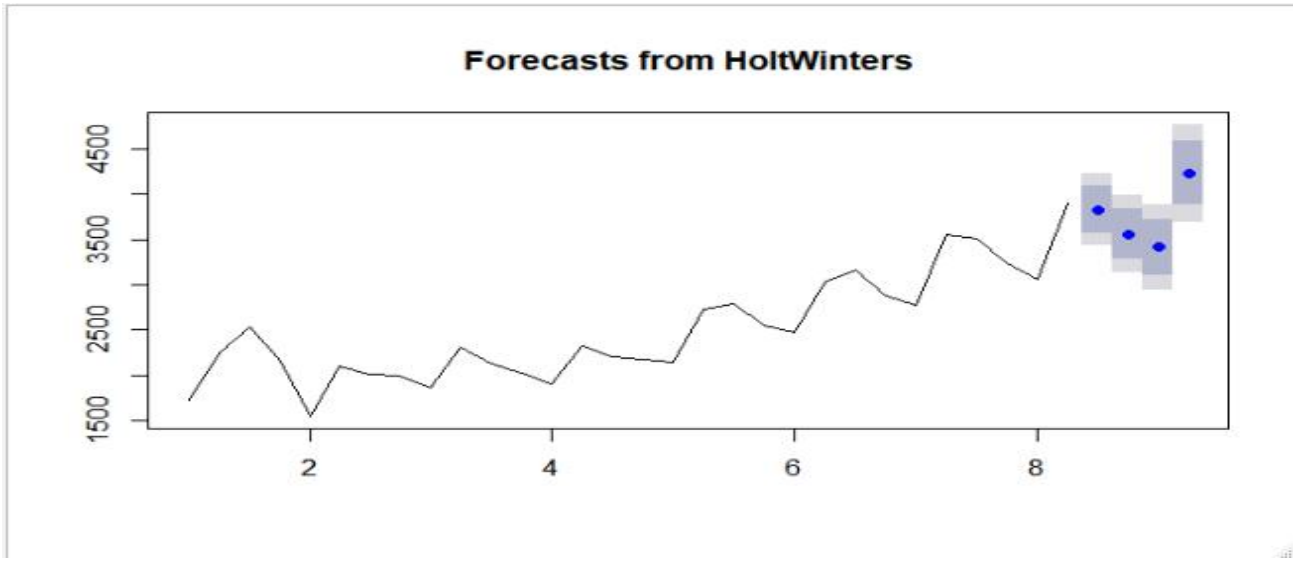



```
Smoothing parameters:
 alpha: 1
 beta : 0.1756433
 gamma: FALSE

Coefficients:
      [,1]
```

```
a 3899.000
b  157.449
```




```
Smoothing parameters:
 alpha: 0.3311204
 beta : 0.3143241
 gamma: 0.8982952

Coefficients:
          [,1]
a  3325.14975
b    84.77172
s1  424.00738
s2   68.52519
s3 -164.13388
s4  570.19776
```



By looking at the plot the characters of without optimum forecasted values are closely following historical data.