Time Series Analysis

Mini Project

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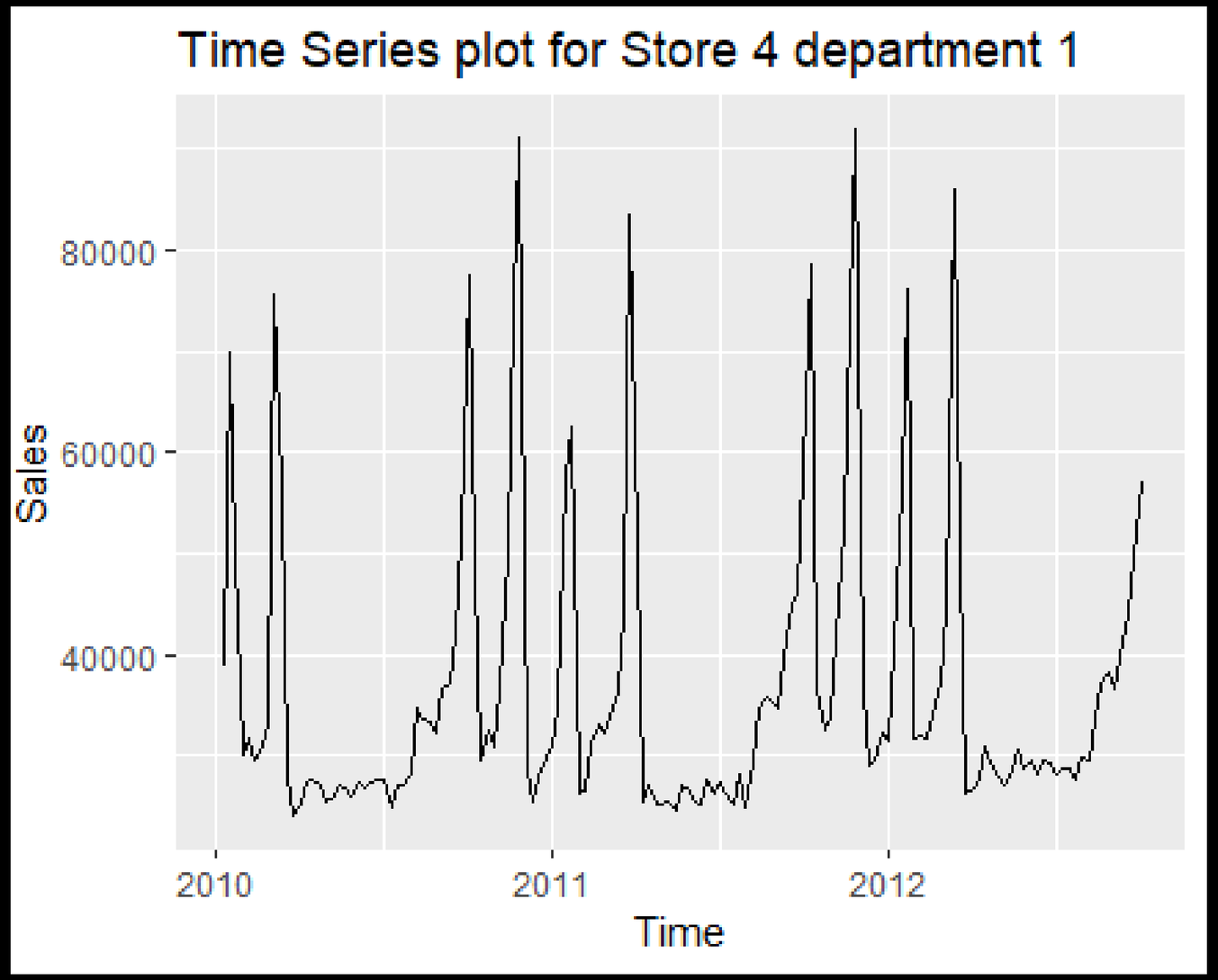
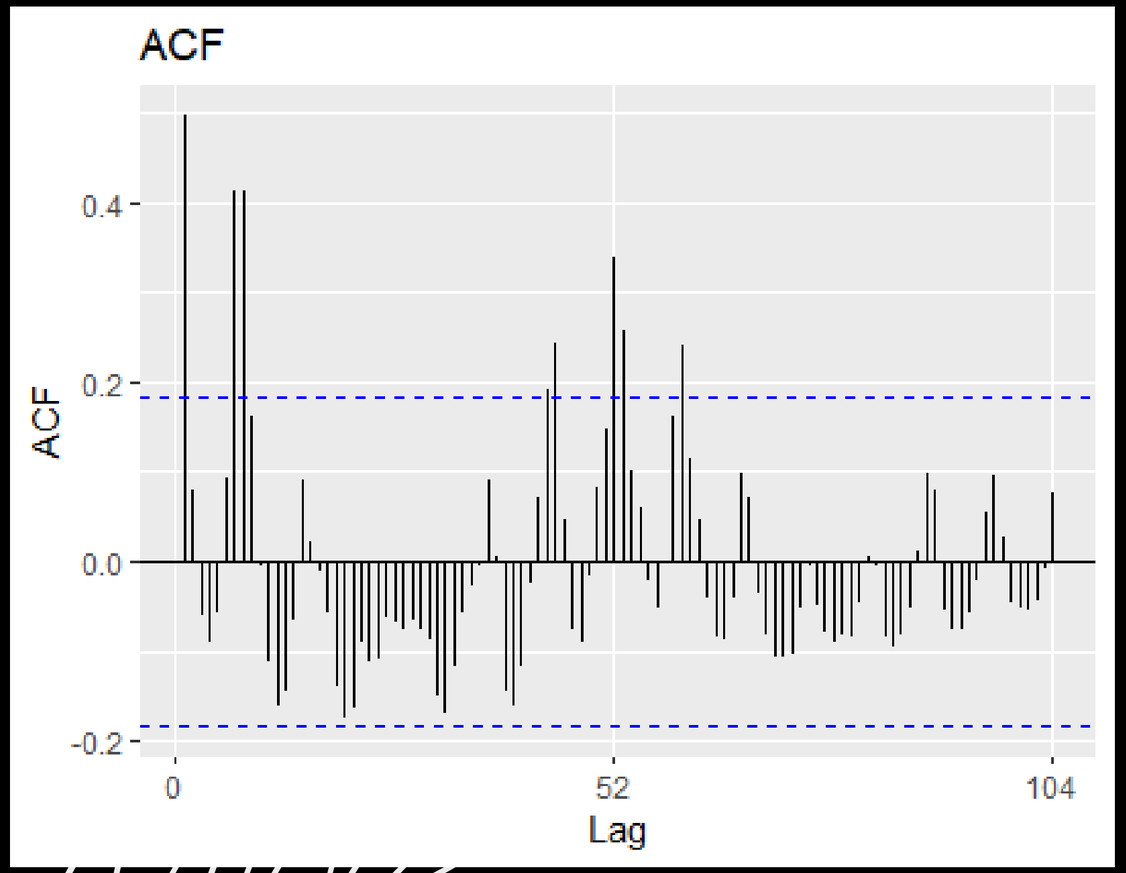
Problem Statement

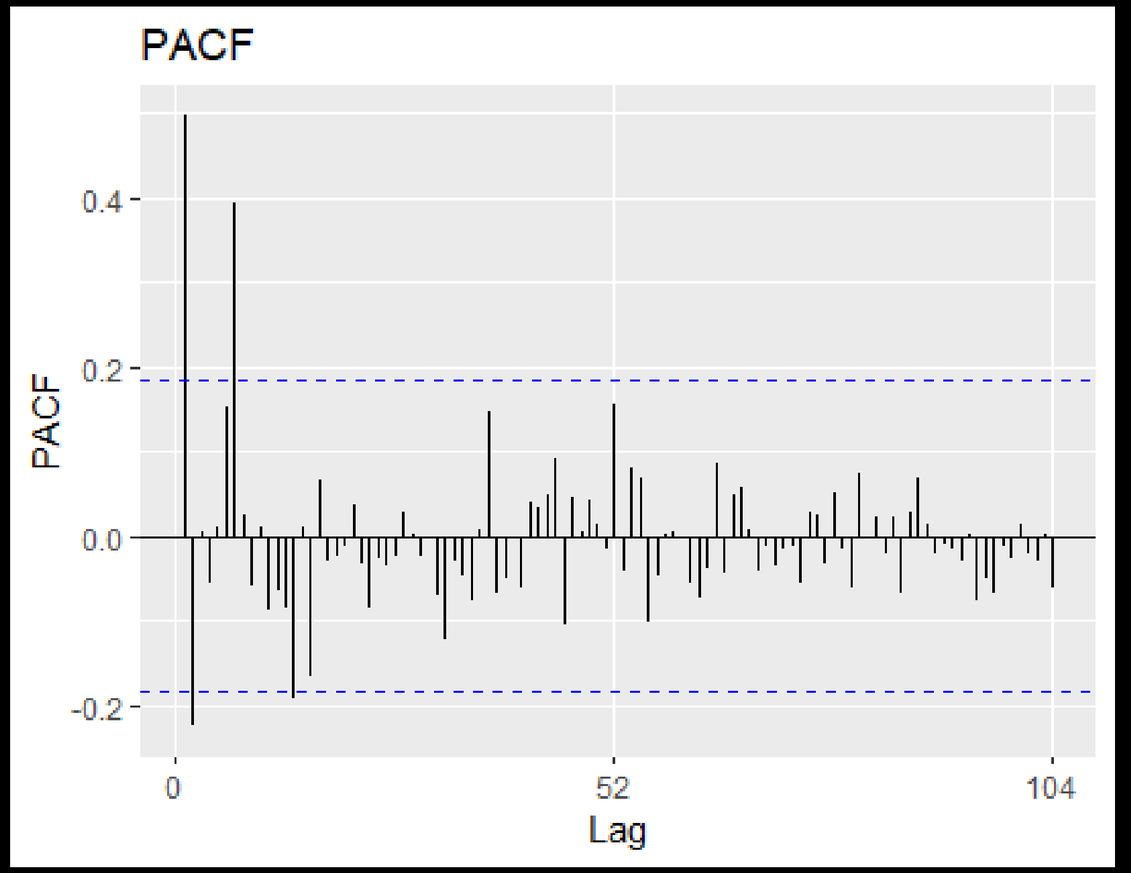
- Propose a suitable TS model and analyse the weekly sales from anyone store-department pair.
- Data :- Store-4, Department-1

Normal Time Series Plot



ACF and PACF Plots





Stationarity

ADF Test-

Augmented Dickey-Fuller Test
H0: Data is non-stationary
H1: Data is stationary

P-value= 0.0276 <0.05
=> It is Stationary

KPSS Test-

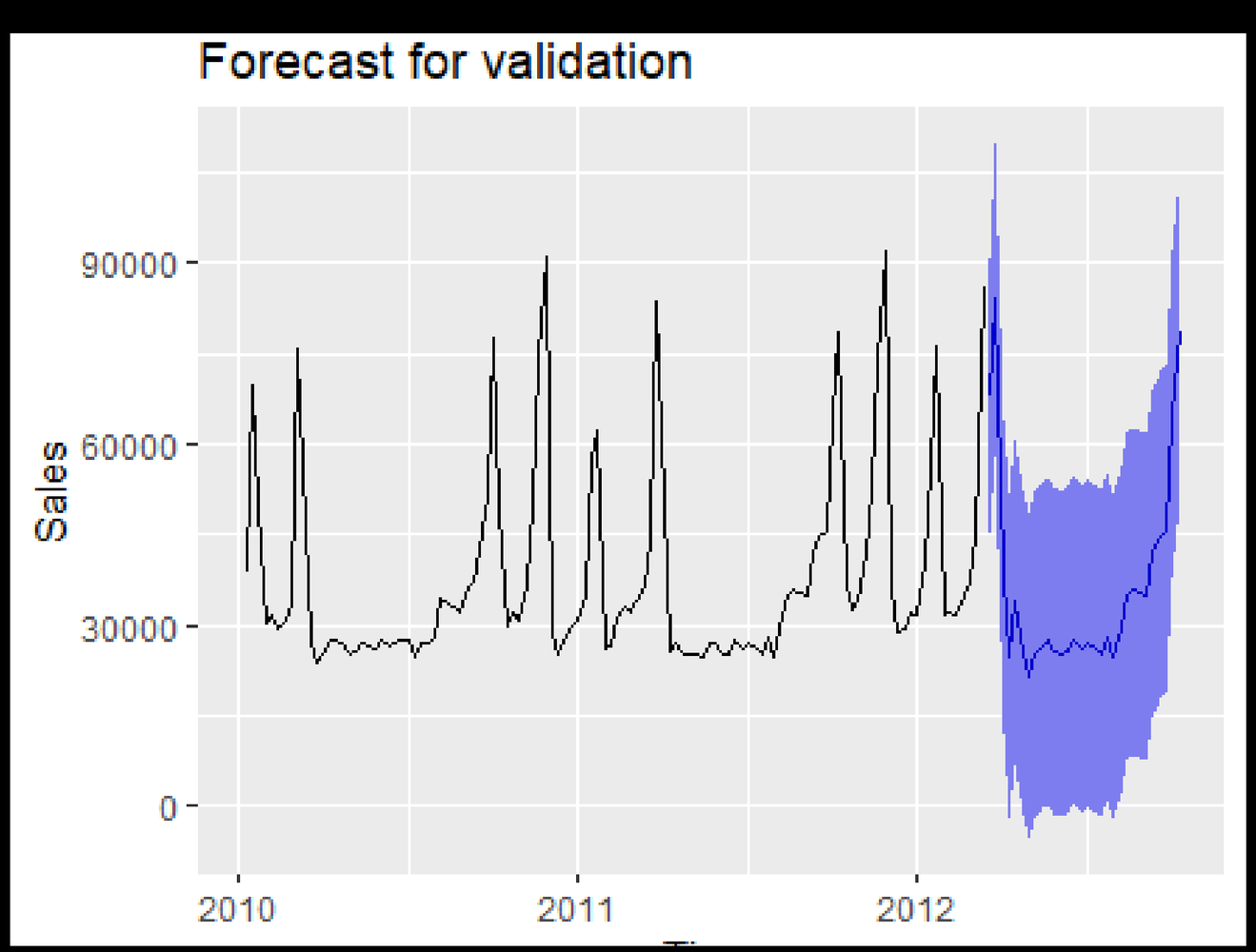
KPSS Test for Level Stationarity
H0: Data is stationary
H1: Data is non-stationary

P-value=0.1 > 0.05
=> It is Stationary

Validation of Model

1. Split original data into training and testing data.
2. Fit ARIMA model on the training dataset.
3. Compare predict sales with original values of sales.

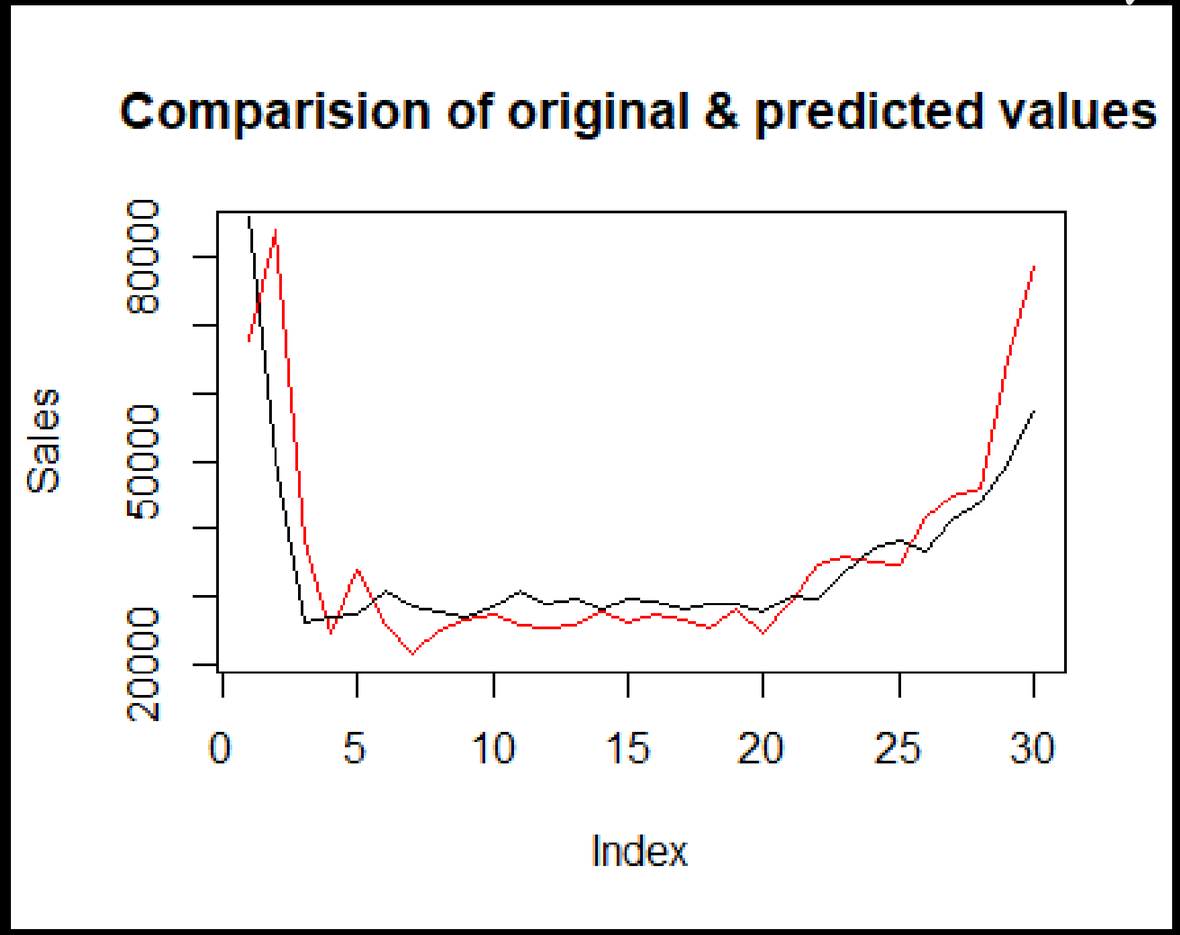
Validation of Model



- Predicted sales of 2012 is approximately same as original value of sales for 2012.

Comparision

- Predicted and Original values are approximately same



Forecast

The ARIMA function was used to forecast the sales values for the next year.
=> the same pattern is observed for the forecasted values

	ME	RMSE	MAE
Training set	1008.722	8778.739	3911.645

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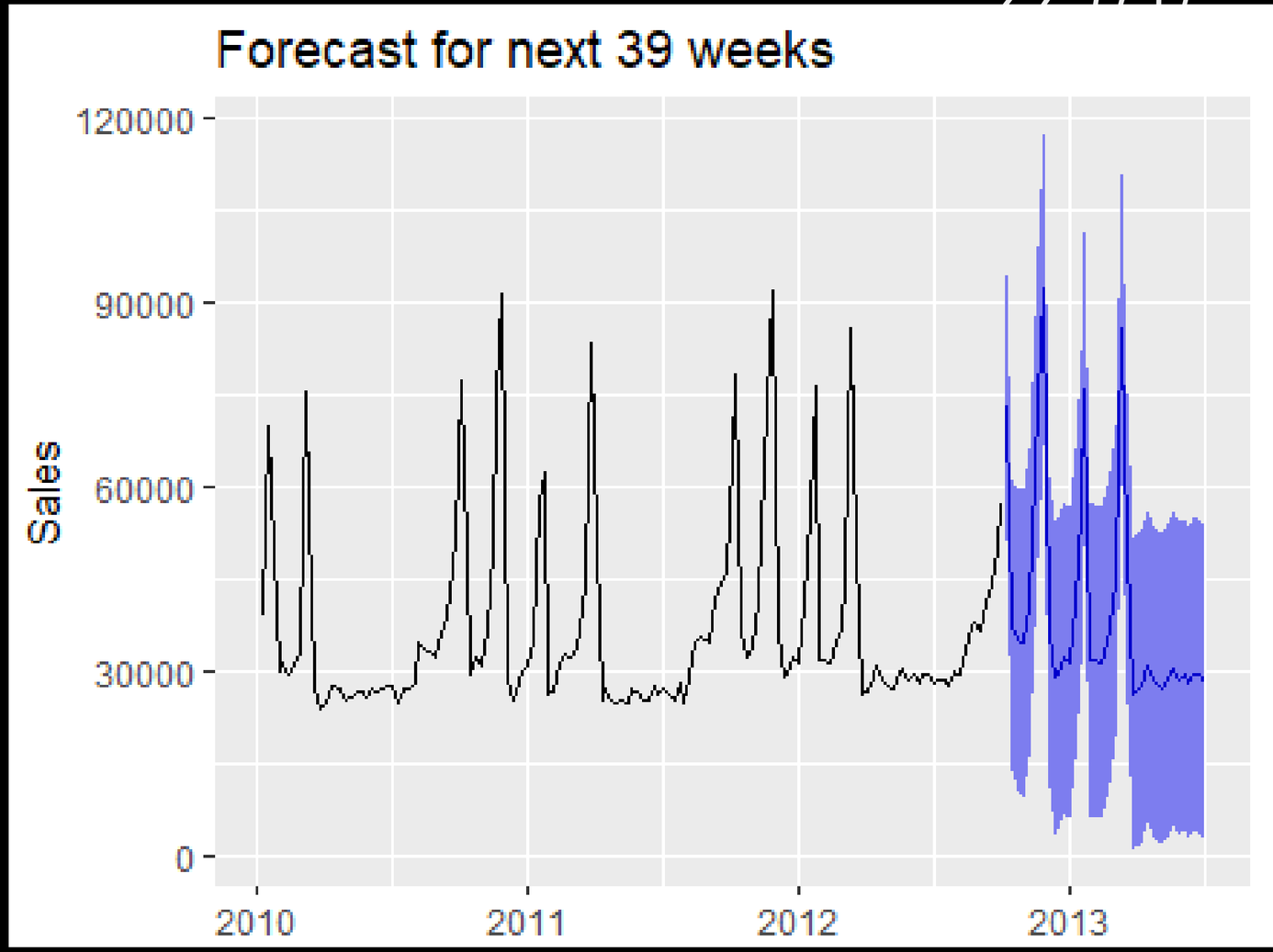
MPE	MAPE	MASE	ACF1
1.115403	9.959679	0.6071975	-0.0067336



References

- FORECASTING:PRINCIPLES AND PRACTICES.

THANK YOU!