

LAB-4 ASSIGNMENT

- Convert the given data to a monthly time series data.
- Check for missing values. If present, then use backward fill or forward fill appropriately.
- Plot the monthly time series data and write your observation/analysis from the plot.
- Decompose the data into different components. Create a plot of the decomposition.
- Split the dataset such that the last 48 months are in the test set.
- Train the time series data using single, double and triple exponential smoothing model.
- Using the trained model, forecast the next 48 time step values for each case (single, double and triple ES) using different combinations of the smoothing parameters.
- Calculate the MAE and MSE between the actual test data and the forecasts obtained to determine the optimal values of the smoothing parameters.
- Lastly, conclude which of the three models seems to be the most appropriate for our data based on MAE and MSE errors and use the best model found to forecast the next 6 values.