Ex 4 : Traffic pattern recognition using Decision tree, correlation study and Naïve Bayes classification and Time series forecasting

Using the dataset from Kaggle https://www.kaggle.com/datasets/utathya/smart-city-traffic-patterns called "Smart City traffic patterns", perform pattern recognition and prediction using Decision Tree classifiers and Naïve Bayes classification. Moreover, time series analysis and simple moving average, Arima and exponential smoothing are performed.

1. Import required packages after installing

2. Load and read the data set

3. Pre-process the data appropriately

4. Use summary method to see the characteristics of the data set

5. Use the Simple Moving Average forecasting model and visualize the output

6. Use the Exponential smoothing forecasting model and see the output

7. Use the Arima forecasting model and view the output

8. Get the correlation between the columns

9. Split the data set into training and testing in the ratio of 70:30

10. Perform Decision tree classification and view the results in tree format

11. Perform Naïve Bayes and view the results in confusion matrix