**NAME :** Mansi Dwivedi
**BRANCH :** IT
**UID :** 2019140016
**BATCH :** B
**COURSE :** Data Analytics Lab
**EXPERIMENT :** 7

**AIM :** To perform time series analysis: identifying the nature of the phenomenon represented by the sequence of observations, and forecasting

**PROBLEM STATEMENT :**
This experiment serves as an introduction to exploring and visualizing time series data and covers:

1. Create time series data.
    - Replication requirements: What you'll need to reproduce the analysis
    - Creating time series objects: Convert your data to a time series object for time series analysis.
2. Accommodate trend, as well as seasonal and event-related variation, in time series models.
    - Time series plots: Basic visualization of ts objects and differentiating trends, seasonality, and cycle variation.
    - Seasonal plots: Plotting seasonality trends in time series data.
3. Stationary and Autocorrelation of time series: Computing constant mean and variance and visualizing autocorrelation.
4. White noise: Differentiating signal from the noise. (Currently Following steps are not to be done)
5. Diagnose, fit, and interpret exponential smoothing models, ARMA models
6. Identify relative strengths and weaknesses of the above model types.

**CODE & OUTPUT:**
https://colab.research.google.com/drive/1SQ6VeXmKenMddgfPh1Yz7LhFdZ_FZw3r?usp=sharing

**CONCLUSION :**
All the explanations and inferences have been precisely written in the Google Collab Notebook itself.