Day 56

DIY - Solution

Q1. What do you mean by Time Series Analysis?

Answer: Time Series Analysis is a specific way of analyzing a sequence of data points collected over an interval of time. In Time Series Analysis, analysts record data points at consistent intervals over a set period of time rather than just recording the data points intermittently or randomly.

Q2. Why do we use Time Series Analysis?

Answer: Time Series Analysis helps us to identify and understand the underlying causes of trends or systemic patterns over time. Using data visualizations, We can see seasonal trends and dig deeper into why these trends occur.

Time Series Analysis is part of predictive analytics. When we analyze data over consistent intervals, we can also use Time Series Forecasting to predict the likelihood of future events. It can show likely changes in the data, like seasonality, trend, or cyclic behavior.

Q3. What are the steps involved in Time Series Analysis?

Answer:

1. Collecting the data and cleaning it
2. Performing EDA with respect to time and key feature
3. Identifying the stationarity of the series
4. Model building using AR, MA, ARMA and ARIMA
5. Getting the insights from prediction

Q4. What kind of problems can be solved using Time Series Analysis?

Answer: With help of "Time Series" we can prepare numerous time-based analyses and results and the following problems can be solved using TSA:

1. **Forecasting**
2. **Segmentation**
3. **Classification**

Q5. What are the components of Time Series Analysis?

Answer:

1. **Trend:** There is no fixed interval and any divergence within the given dataset is a continuous timeline. The trend would be negative or positive or null trend.
2. **Seasonality:** Regular or fixed interval shifts within the dataset in a continuous timeline. It would be a bell curve or saw tooth.
3. **Cyclical:** There is no fixed interval or uncertainty in movement and its pattern.
4. **Irregularity:** Unexpected situations/events/scenarios and spikes in a short time span.