**Q1. How does the Prophet Algorithm differ from an LSTM?**

* Facebook Prophet Model is relatively easier and quicker to use where the user does not have to do the analysis of seasonality, trend, fluctuations, etc. The model takes care of this itself.
* Facebook Prophet Model does most of the processing, requires minimum user intervention, and produces accurate results that are at par with the other forecasting algorithms.

**Why does an LSTM have poor performance against ARIMA and Profit for Time Series?**

* Overfitting easily happen in lstm for time series data b/c it requires large hyperparameter tunining

**Q2. What is exponential smoothing and why is it used in Time Series Forecasting?**

* Exponential smoothing is **a method for forecasting univariate time series data**. It is based on the principle that a prediction is a weighted linear sum of past observations or lags.

**Why is it used in Time Series Forecasting?**

* They use weighted averages of past observations to forecast new values. The idea is **to give more importance to recent values in the series**. Thus, as observations get older in time, the importance of these values get exponentially smaller

**Q3. What is stationarity?**

* A stationary time series is **one whose properties do not depend on the time at which the series is observed**. Thus, time series with trends, or with seasonality, are not stationary .

**What is seasonality?**

* Seasonality is **a characteristic of a time series in which the data experiences regular and predictable changes that recur every calendar year**. Any predictable fluctuation or pattern that recurs or repeats over a one-year period is said to be seasonal.

**Why Is Stationarity Important in Time Series Forecasting?**

* Stationarity is an important concept in the field of time series analysis with **tremendous influence on how the data is perceived and predicted**. When forecasting or predicting the future, most time series models assume that each point is independent of one another.

**Q4. How is seasonality different from cyclicality? Fill in the blanks:**

* **Seasonality** is predictable, whereas **Cyclicality** is not.