Time Series Forecasting

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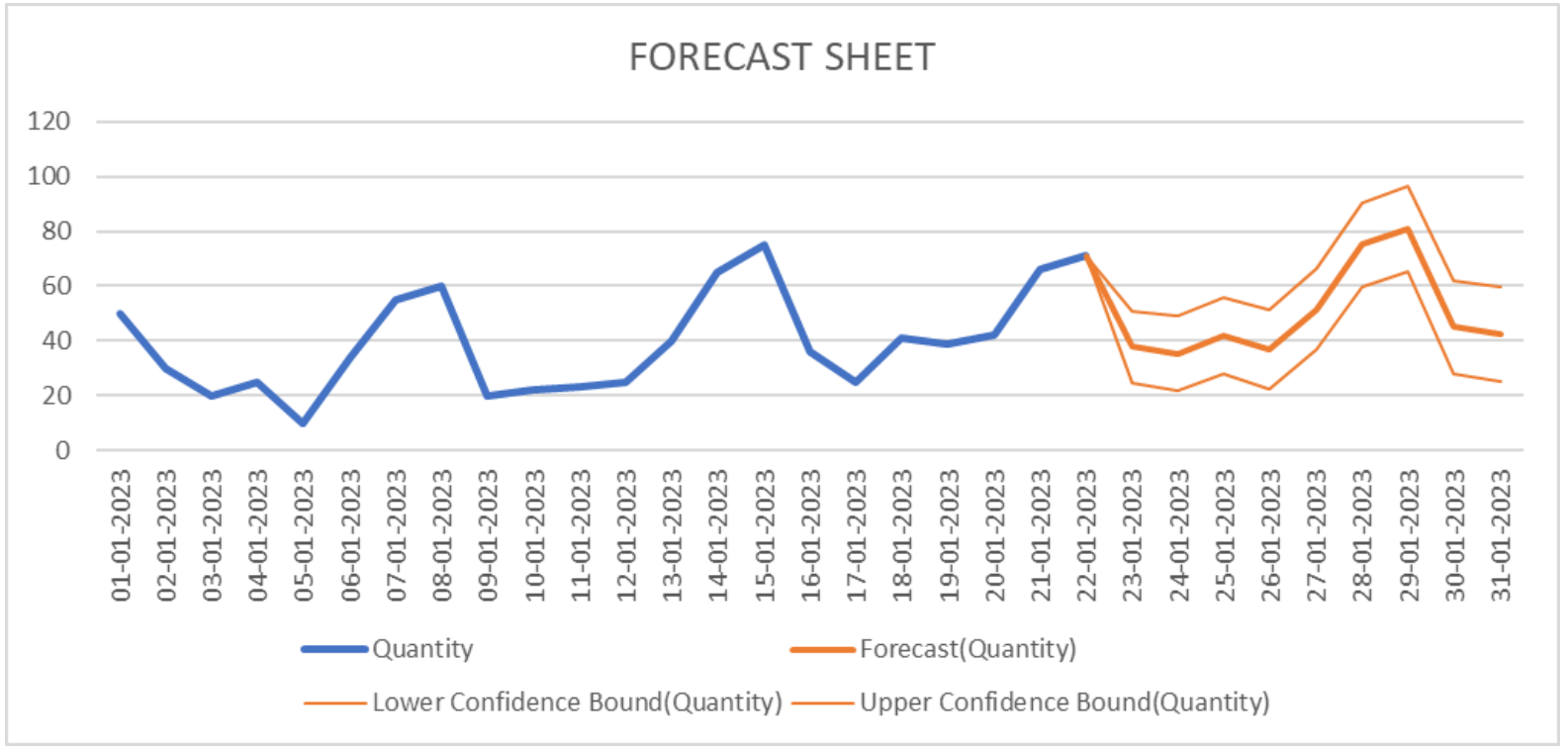
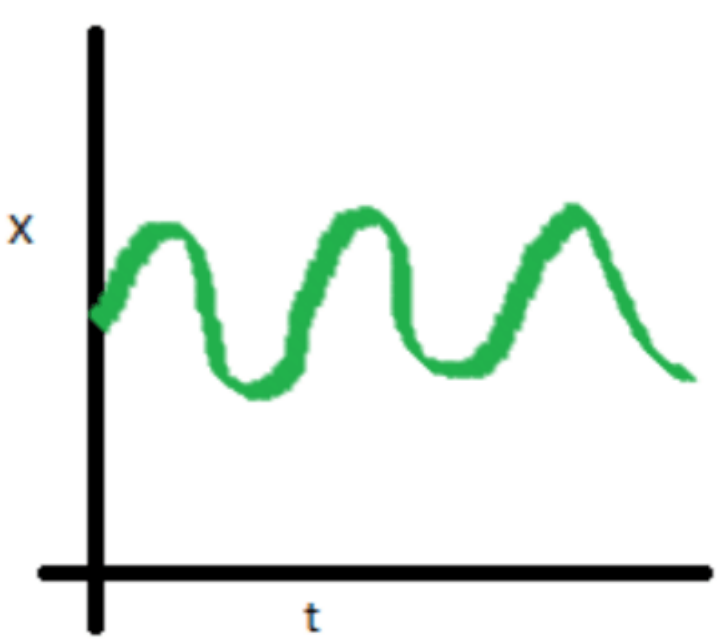
WHAT WILL BE MY DEMAND OF ALOO TIKKI FOR NEXT DAYS ?

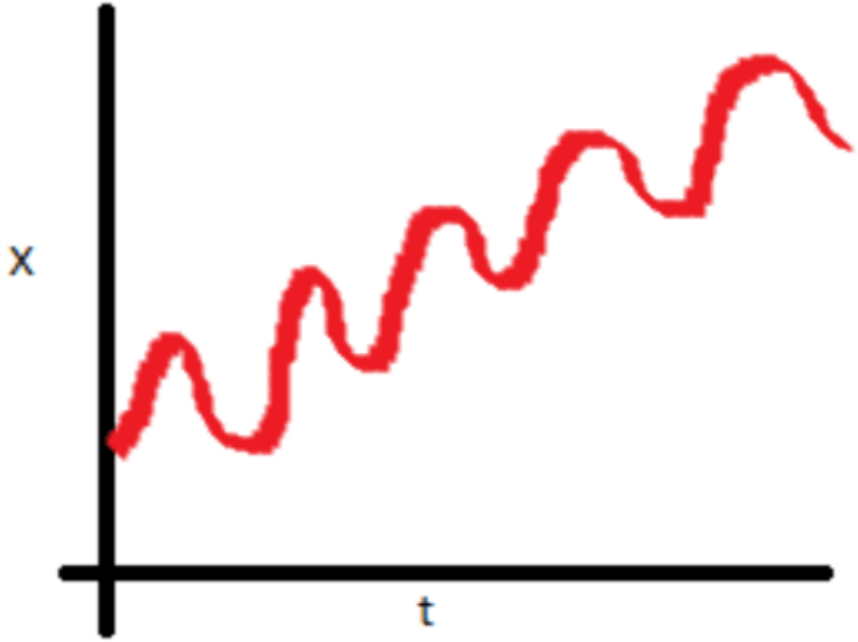
Date	Quantity
01-01-2023	50
02-01-2023	30
03-01-2023	20
04-01-2023	25
05-01-2023	10
06-01-2023	34
07-01-2023	55
08-01-2023	60
09-01-2023	20
10-01-2023	22
11-01-2023	23
12-01-2023	25
13-01-2023	40
14-01-2023	65
15-01-2023	75
16-01-2023	36
17-01-2023	25
18-01-2023	41
19-01-2023	39
20-01-2023	42
21-01-2023	66
22-01-2023	71



Stationary vs Non Stationary time series

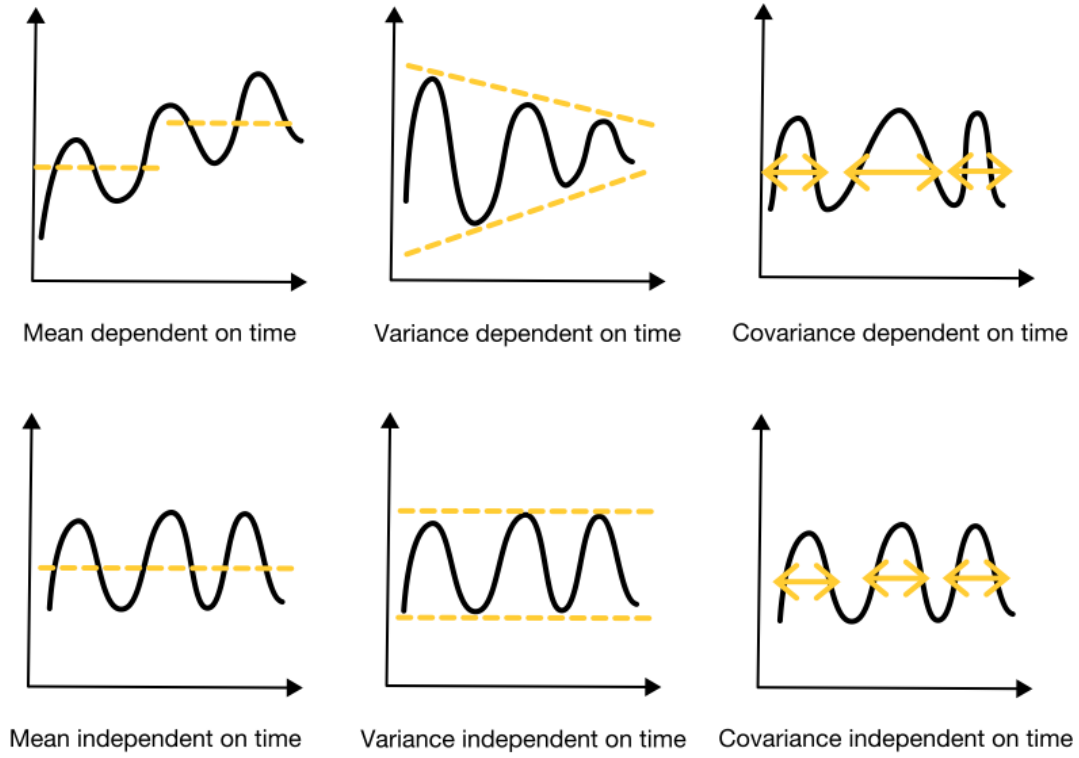


Stationary series

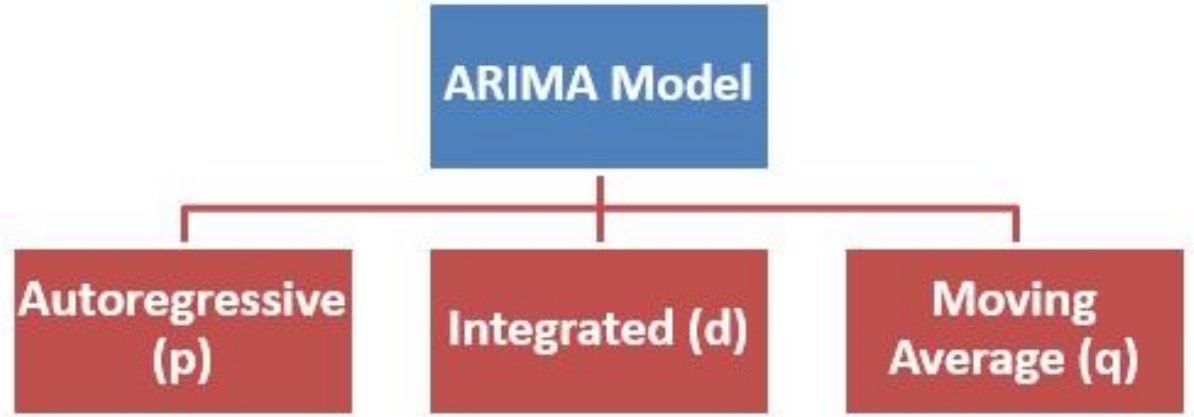


Non-Stationary series

Rules for a stationary time series

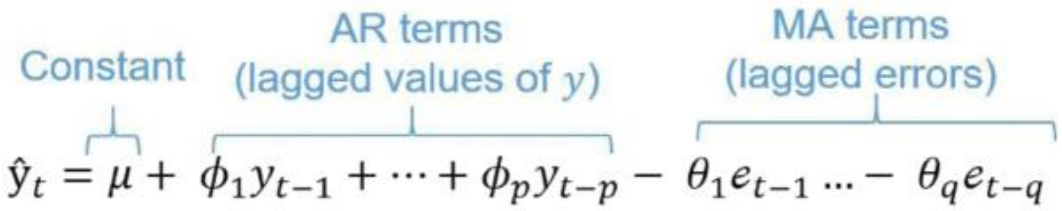


Models for Time Series



ARIMA(p,d,q)

Equation for ARIMA



θ = moving average parameters of order q,

Φ = autoregressive parameters of order p,

$\hat{y}_t$ = prediction estimates at time t,

y_{t-p} = lagged values of y, and

e = error term.

ARIMA Equation (Difference)

$$y_t^{(d)} = c + \varepsilon_t + \underbrace{\phi_1 y_{t-1}^{(d)} + \phi_2 y_{t-2}^{(d)} + \ldots + \phi_p y_{t-p}^{(d)}}_{\text{Auto-Regressive}} + \underbrace{\theta_1 \varepsilon_{t-1} + \theta_2 \varepsilon_{t-2} + \ldots + \theta_p \varepsilon_{t-q}}_{\text{Moving Average}}$$

Integrated

Thank you

UTKARSH GAIKWAD