



# RENEWABLE ENERGY PRODUCTION

# Introduction:-

- Renewable energy is energy that collected from renewable resources that are naturally replenished on a human timescale.
- The advantages of renewable energy is environmentally friendly, cost-effective, diversification of energy sources, energy security etc.
- Let's goes into details of the project for renewable energy production.

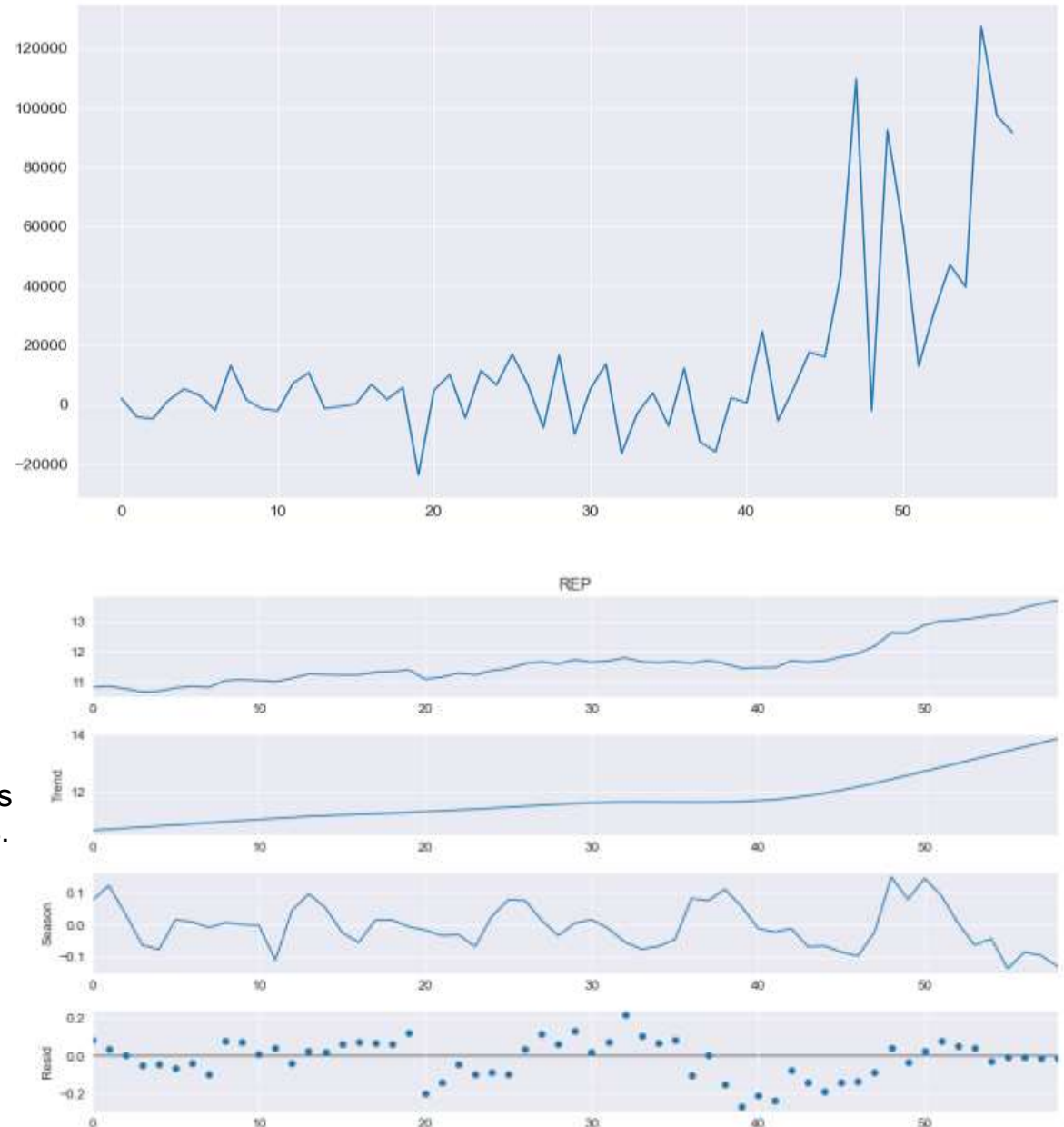
# Detrend analysis:-



Detrending is refers to change the trend from a time series.

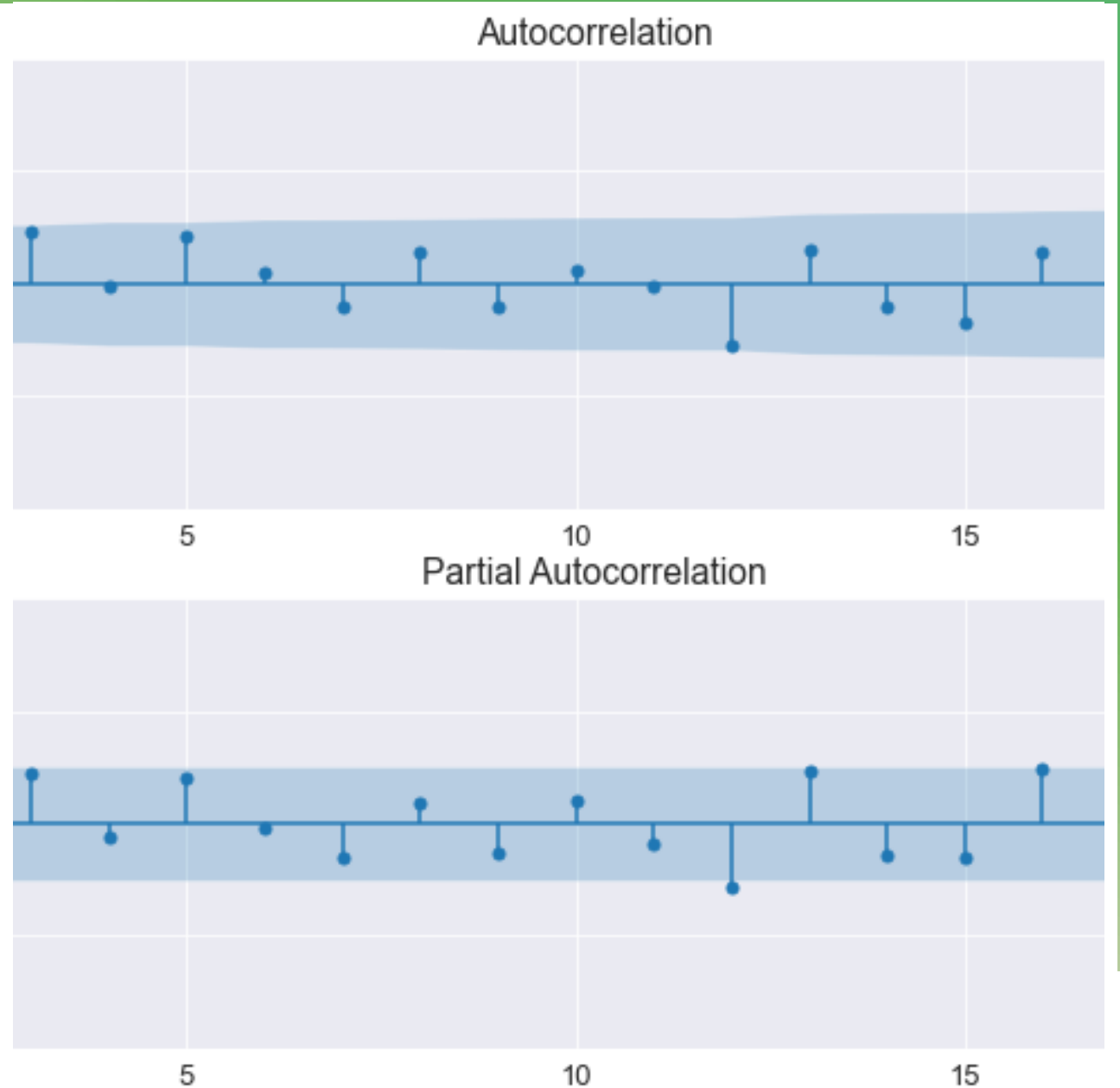


We detrend the data because that data creates some kinds of distortions.



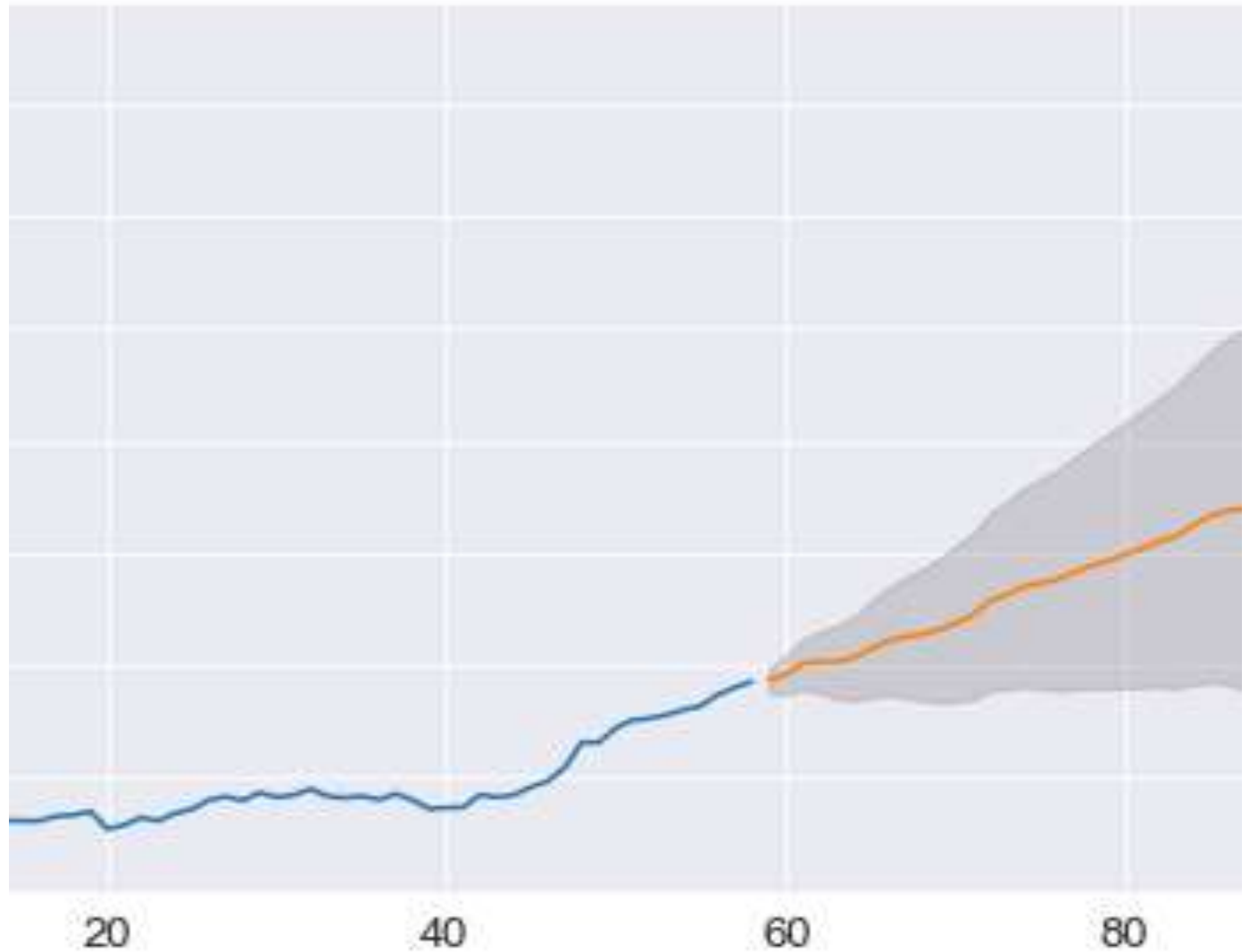
# Auto correlation & Partial auto correlation:-

- Auto correlation is the intended to measure the relationship between a variables of a present values with any past values.
- Partial auto correlation is a summary of the relationship between an observation in a time series with observations at prior time steps with the relationships of intervening observations removed.



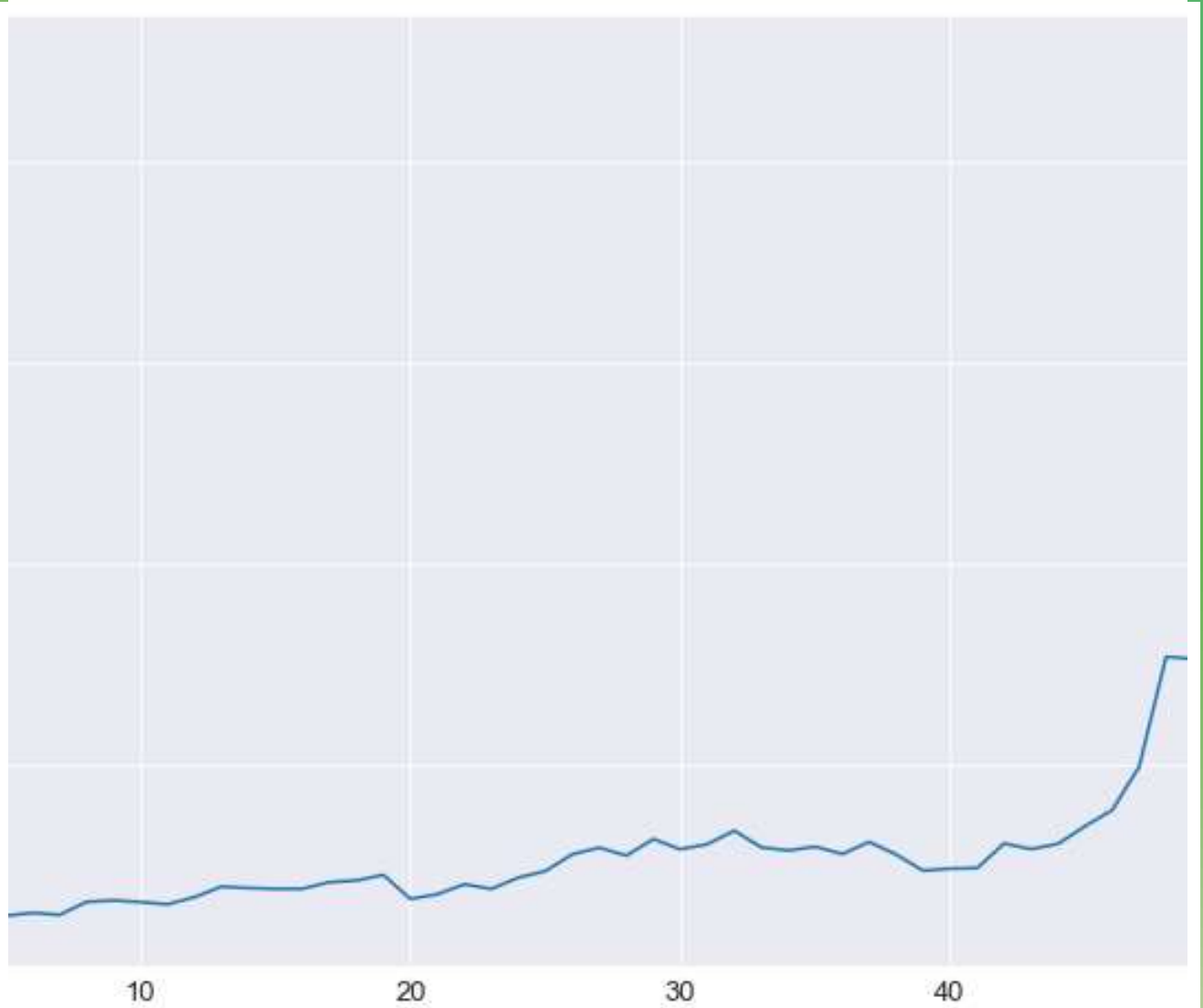
# Forecasting:-

- Forecasting is the process of making predictions based on present & past data.



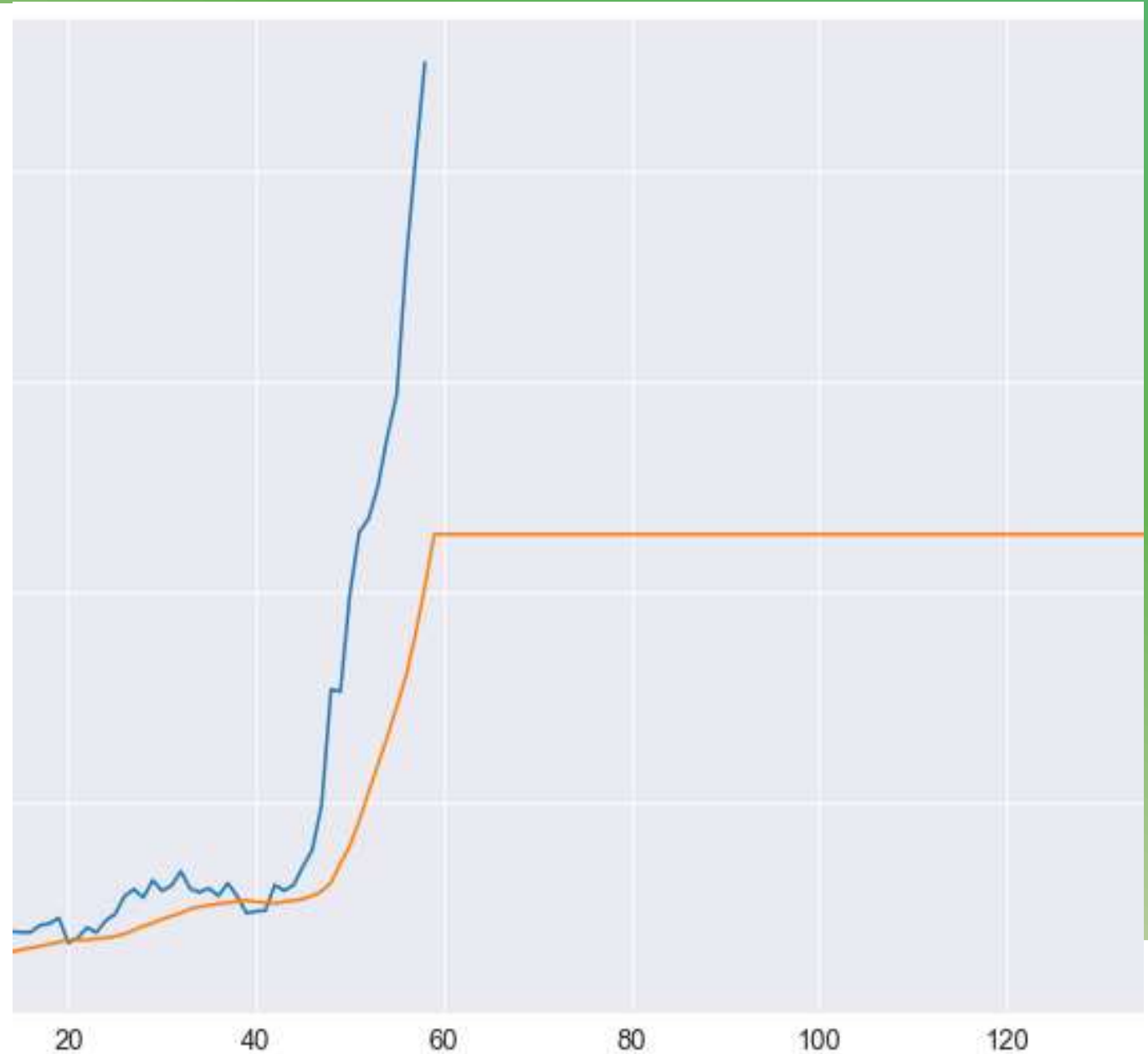
## FORECASTING USING ARIMA

- Arima is a method for forecasting based on a historical time series.
- The forecast intervals for Arima models are based on assumptions that the residuals are uncorrelated & normally distributed.
- Based on the above experiment



# Holt-Winters model:-

- Holt-Winters is model of time-series behavior.
- Holt-Winters models is a way to model three aspects of the time-series that is average, slope , seasonality.



# Summary:-

## Holt Model Results

Dep. Variable:	REP	No. Observations:	59
Model:	Holt	SSE	28120080916.330
Optimized:	True	AIC	1186.951
Trend	coeff	code	optimized
Seasonal smoothing_level	0.9478571	alpha	True
Seasonal smoothing_trend	0.1155923	beta	True
Seasonal initial_level	50155.000	l.0	True
Box-Cox initial_trend	1.0372445	b.0	True
Box-Cox Coeff.:	None		