Problem statement

The number of international passengers per month on an airline (Pan Am) in the united states were obtained from the Fedral Aviation Administration for the period 1949-1960. The company used the data to predict future demand before ordering new aircraft and training aircrew.

1. Plot Time series for the given data
2. Check for seasonality, trend and stationarity of the given time series
3. Use auto.arima to find the best ARIMA model .
4. forecast the model for next 24 months using arima and compute prediction intervals of 95% confidence level for each prediction.
5. arima() fits the model using maximum likelihood estimation. Now, plot the Q-Q plots, which measures the agreement of a fitted distribution with observed data
6. Check the stationarity of timeseries using Augemented Dickey-Fuller test.