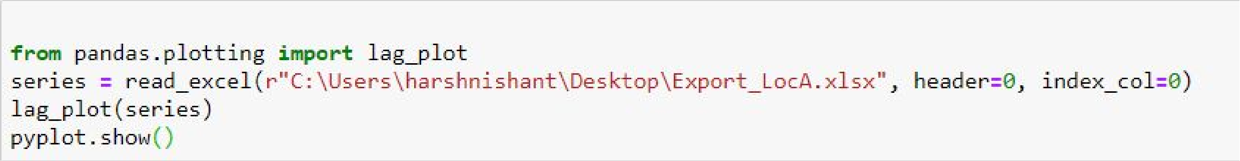
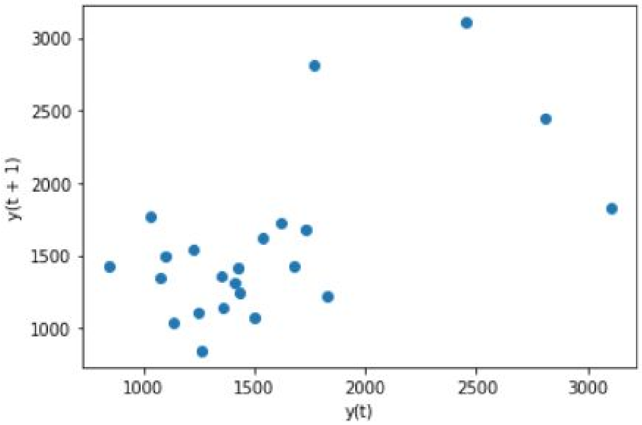
Seasonality Checks

Second, you can obtained a lagged autocorrelation function. For example, if each data point represents a measure for one month, and there is a 12 month cycle, a graph of the lagged autocorrelation function should show a relatively large positive autocorrelation at lag 12, with smaller peaks at lags 24 and 36 (if larger number of time lags are examined.

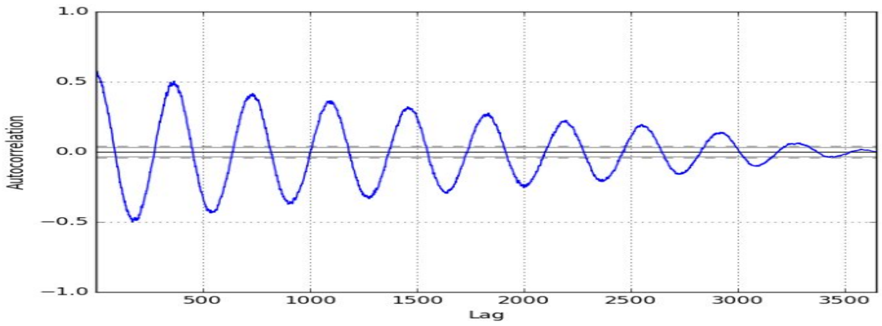
There is a quick, visual check that we can do to see if there is an autocorrelation in our time series dataset.We cannot see a large ball of observations along a diagonal line of the plot. It clearly shows that a relationship or some correlation is not very strong.



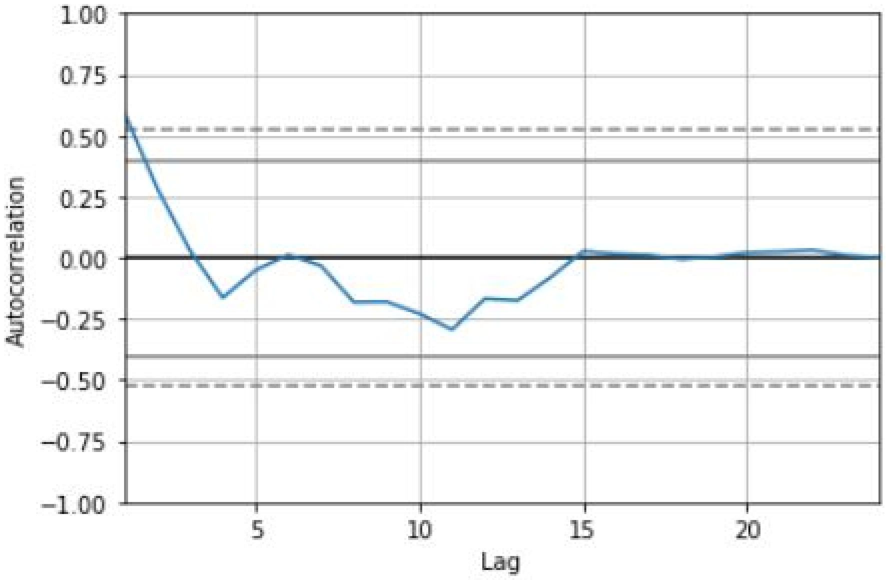
```
from pandas.plotting import lag_plot
series = read_excel(r"C:\Users\harshnishant\Desktop\Export_LocA.xlsx", header=0, index_col=0)
lag_plot(series)
pyplot.show()
```



Thisnext plot provides the lag number along the x-axis and the correlation coefficient value between -1 and 1 on the y-axis. The plot also includes solid and dashed lines that indicate the 95% and 99% confidence interval for the correlation values. Correlation values above these lines are more significant than those below the line, providing a threshold or cutoff for selecting more relevant lag values.The following graph is of temparature varying all year around.

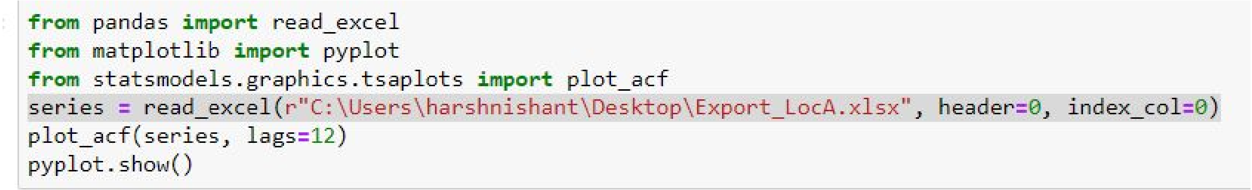


This will also be the plot of something varying with seasons .Heres what the same plot on our dataset looks like

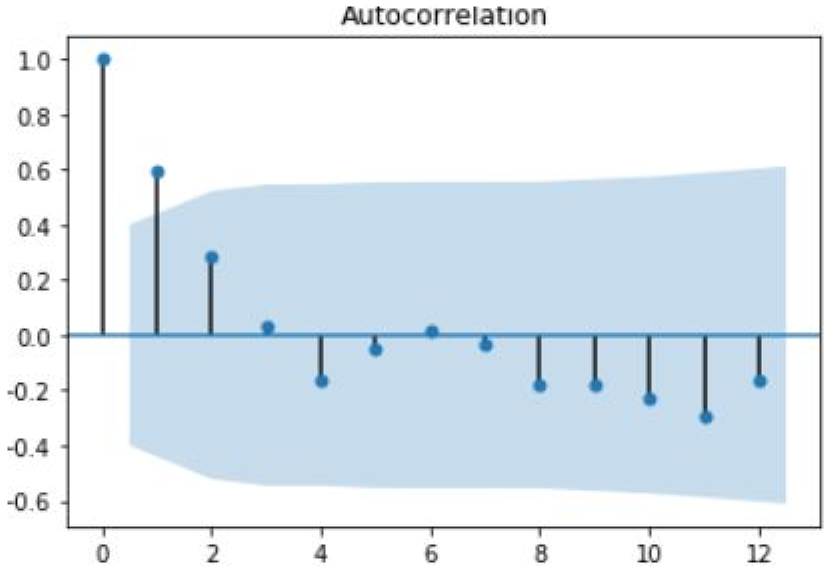


As we can see that this plot does not vary like the previous plot does ,so I think it is safe to say that Export of A does not vary a lot on seasons.

The statsmodels library also provides a version of the plot in the plot_acf() function as a line plot.



```
from pandas import read_excel
from matplotlib import pyplot
from statsmodels.graphics.tsaplots import plot_acf
series = read_excel(r"C:\Users\harshnishant\Desktop\Export_LocA.xlsx", header=0, index_col=0)
plot_acf(series, lags=12)
pyplot.show()
```



This was the seasonality analysis of