ANLT 207
Time Series Analysis
Assignment #4

For all problems below, show your work with a PY or an IPYNB file.

1	Read in the series 'A.csv', 'B.csv', 'C.csv'	
	Plot the data and observe	
	DataFrame the series and create a VAR model	
	Determine optimum lag order (p) by either:	5
	Lag order selection	
	Perform model fits at different lag orders to find lowest AIC	
	Model fit at optimum lag order and get results	5
	Use results to find roots (number of roots = K*p)	10
	Observe the roots:	
	Is the model stationary?	
	Is the model cointegrated?	
	If stationary:	20
	Investigate Granger causality between series combinations (if any)	
	Use IRF plots to confirm your causality conclusions	
	Order the variables (list series in decreasing order of exogeneity)	
	If cointegrated:	
	Perform a Johansen cointegration test. What is the cointegration rank?	
	Create a VECM model (with no deterministic terms) and fit	
	What are the α and β matrices?	
	Whether VAR or VECM model, perform a dynamic forecast 10 steps forward and plot	10
		50 pts.

2	Read in the series 'X.csv', 'Y.csv', 'Z.csv'	
	Plot the data and observe	
	DataFrame the series and create a VAR model	
	Determine optimum lag order (p) by either:	5
	Lag order selection	
	Perform model fits at different lag orders to find lowest AIC	
	Model fit at optimum lag order and get results	5
	Use results to find roots (number of roots = K*p)	10
	Observe the roots:	
	Is the model stationary?	
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		50 pts.