Project Title: Equities (and other assets) vs the S&P 500

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Part 1: Data Collection
We have taken one equity and four distinct assets. All the data for the below asset classes were imported using quandl and google.
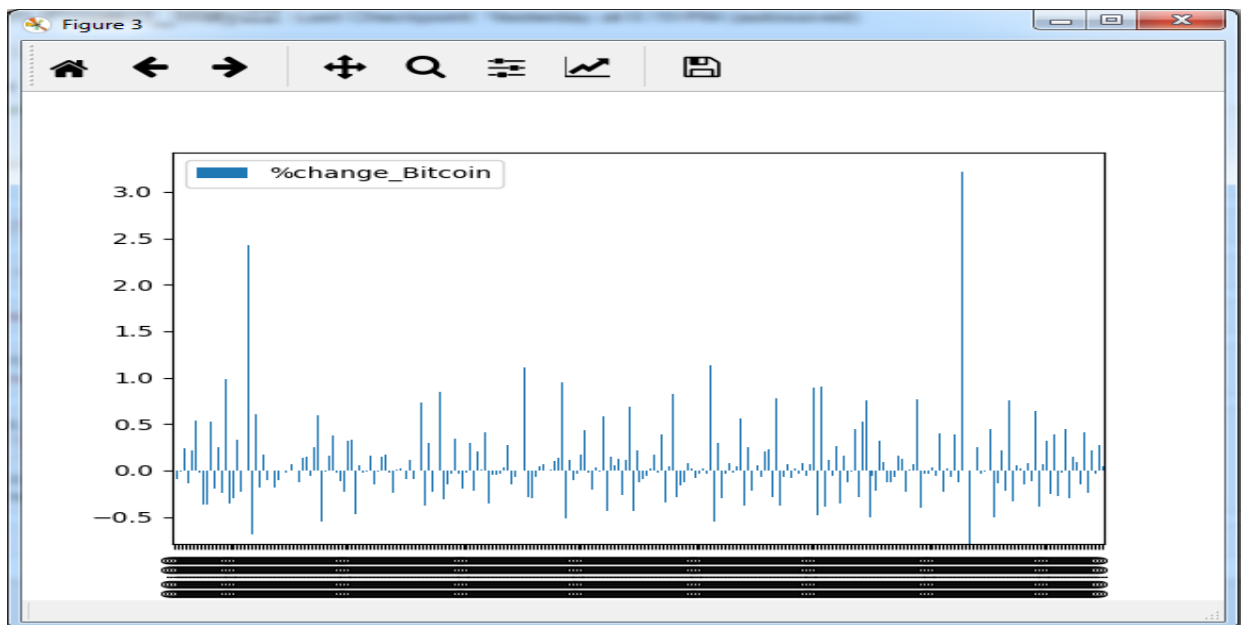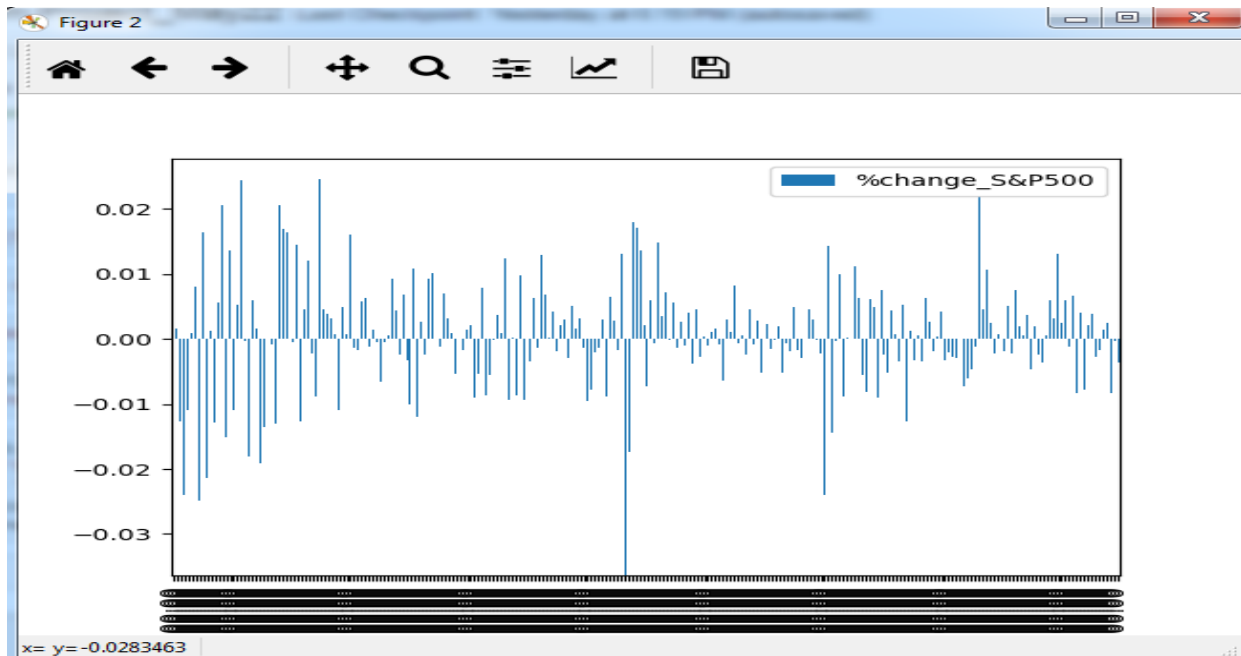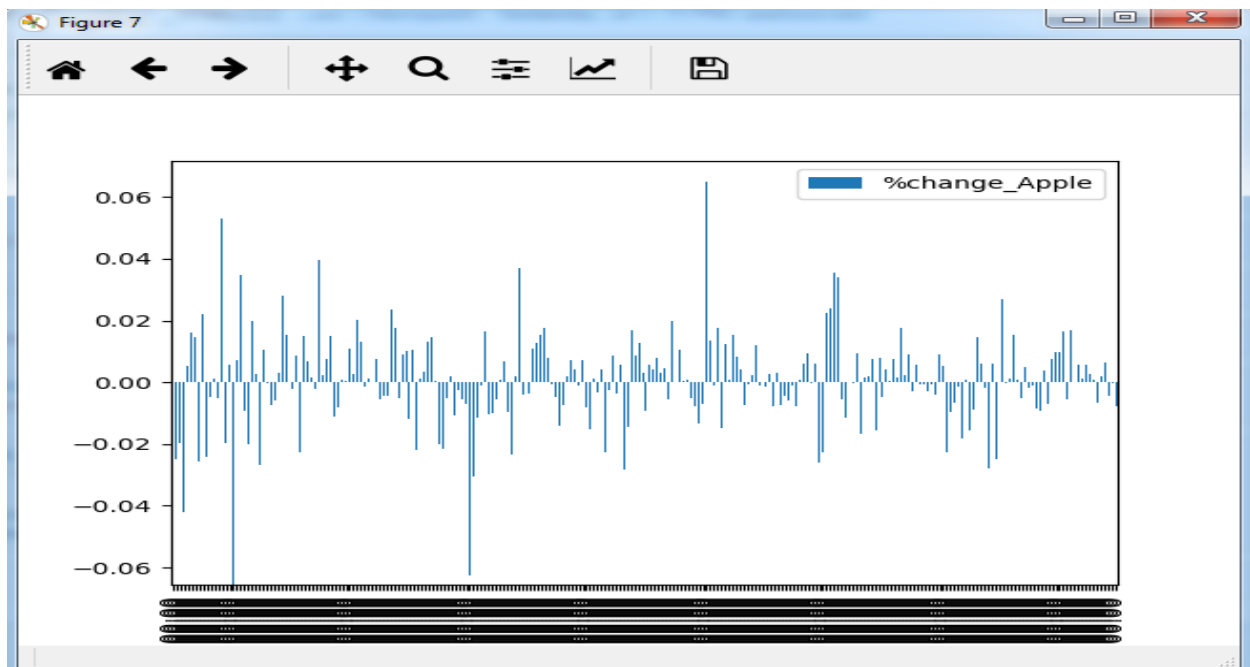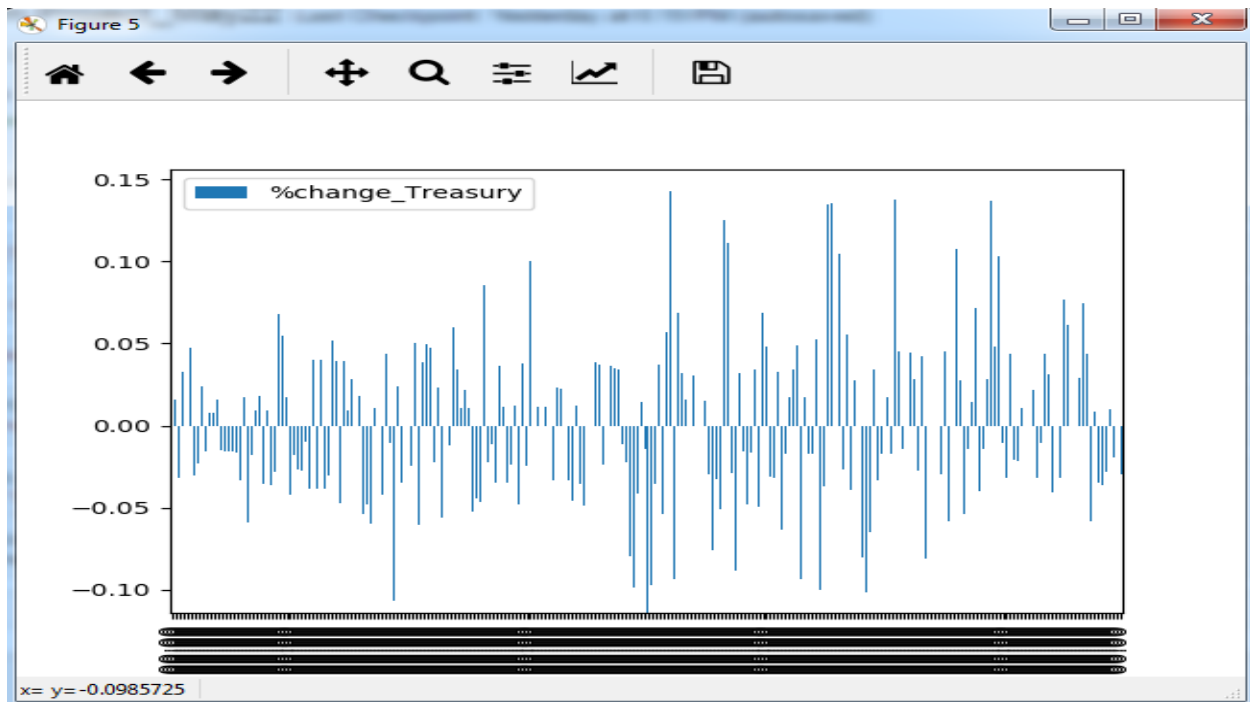Start date:**1/1/2016** and End date: **12/31/2016**.

1. Equity - Apple
2. Bitcoin
3. Oil
4. Gold
5. Treasury

Part 2: Data Processing

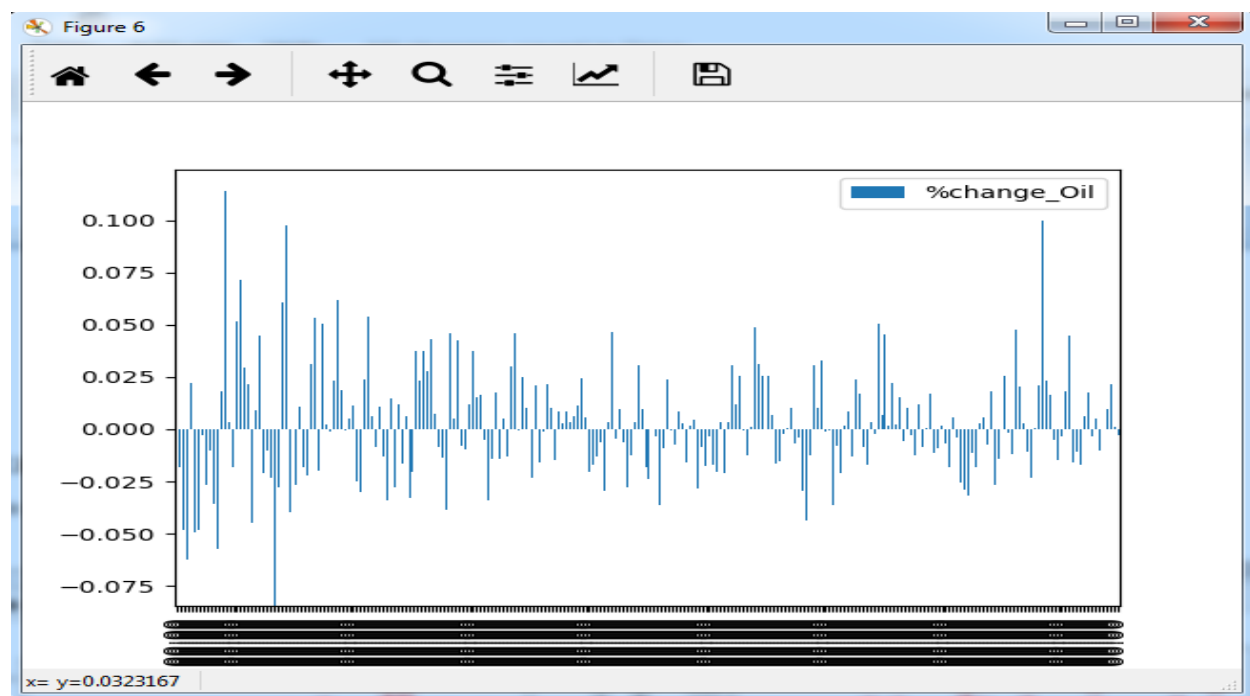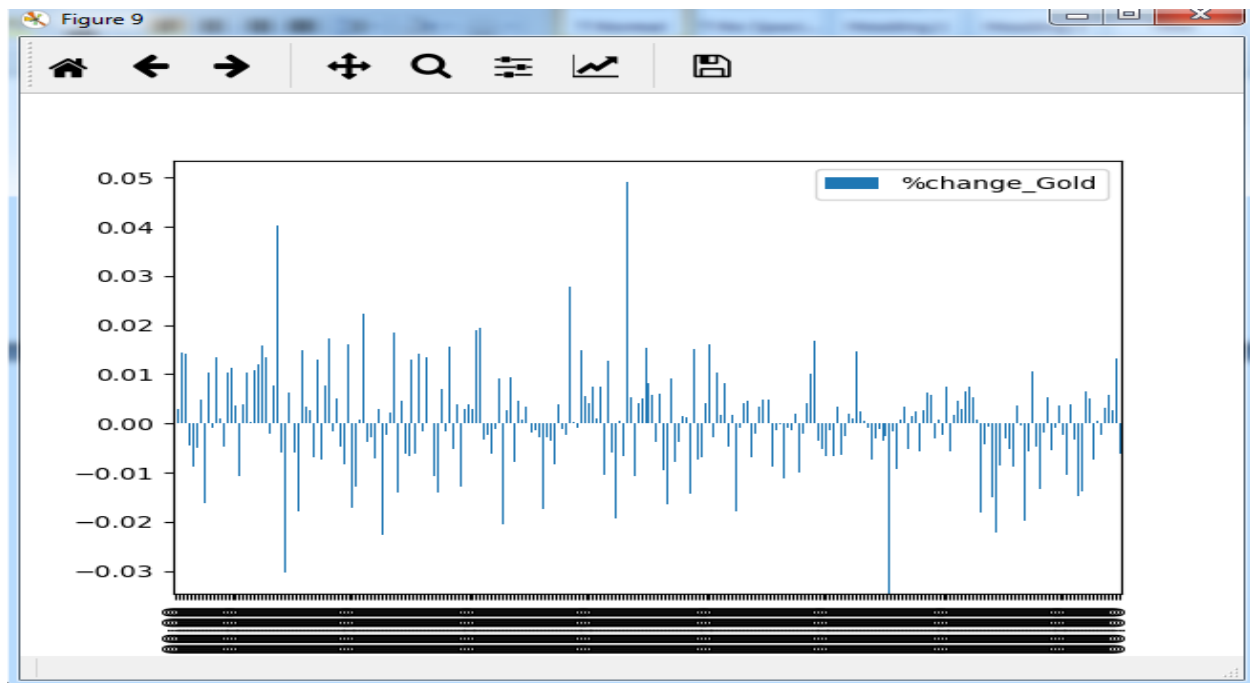| S. no	Statistics	S&P500	Apple	Bitcoin	Gold	Oil	Treasury
1	Count	252.0000	252.0000	244.00000	252.00000	252.00000	250.000000
2	Mean	209.4399	104.6040	737.13647	119.36269	40.833214	0.857040
3	Standard Deviation	10.14405	7.640743	310.23456	6.874433	7.225594	0.203884
4	Min	182.8600	90.34000	359.71000	102.89000	22.480000	0.520000
5	25 percentile	204.5450	97.13750	534.75250	116.09750	36.250000	0.680000
6	50 percentile	210.5450	105.7500	689.77500	120.03000	42.610000	0.850000
7	75 percentile	216.7550	110.9775	832.98000	125.33250	45.422500	1.000000
8	Max	227.7600	118.2500	3623.1900	130.52000	53.460000	1.330000
9	Variance	102.9019	58.3809	96245.485	47.25783	52.2092	0.041568

Bar Graphs: Percentage Change in Prices over the course of 2016-2017

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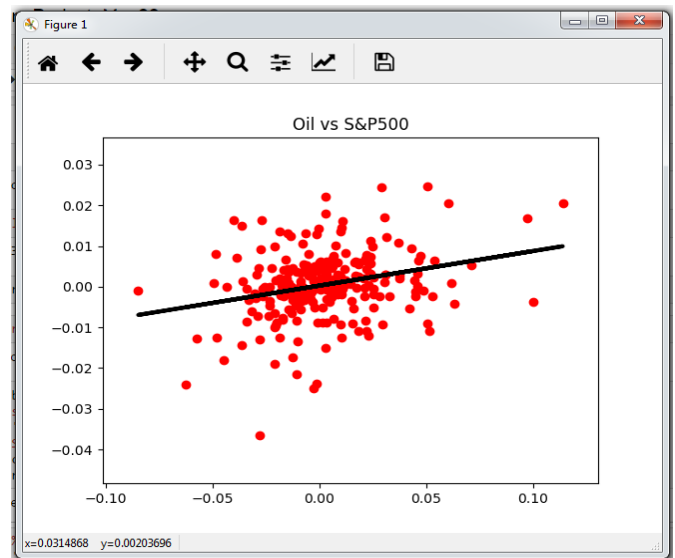**CIS 9650 - Group 2** *(Chani Thakkar, Chandni Gupta, Divya Karelia, Tanaya Nandanwar)*

Regression Analysis:

1. Regression coefficient for Apple is closest to 1 and hence **Apple is highly correlated with S&P500** as compared to all the other assets.

2. Regression coefficient for Bitcoin is farthest from 1 and closest to 0 and hence **Bitcoin is least correlated with S&P 500** as compared to all other assets.
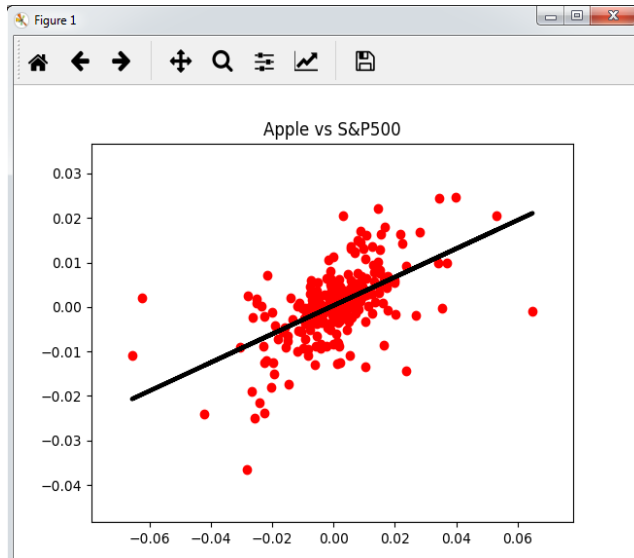

Intercept (Apple):	0.00030157	Intercept (Oil):	0.00025268
Regression coefficient (Apple):	0.31977638	Regression coefficient (Oil) :	0.08498233
Slope (Apple)	0.3259559133	Slope (Oil)	0.073908628772
Mean Squared Error (Apple):	0.000146109533435	Mean Squared Error (Oil):	0.0006493208606
Positively Correlated		**Positively Correlated**	

Gold vs S&P500
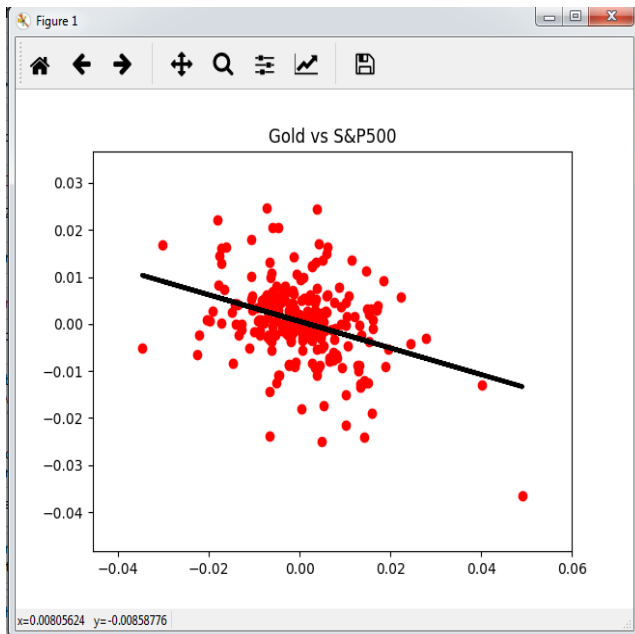
Intercept(gold): 0.00054281
Regression coefficient(gold): -0.28266353
Slope (gold) 0.121237877335
Mean Squared Error (gold): 0.0002295053694
Negatively Correlated

Bitcoin vs S&P500
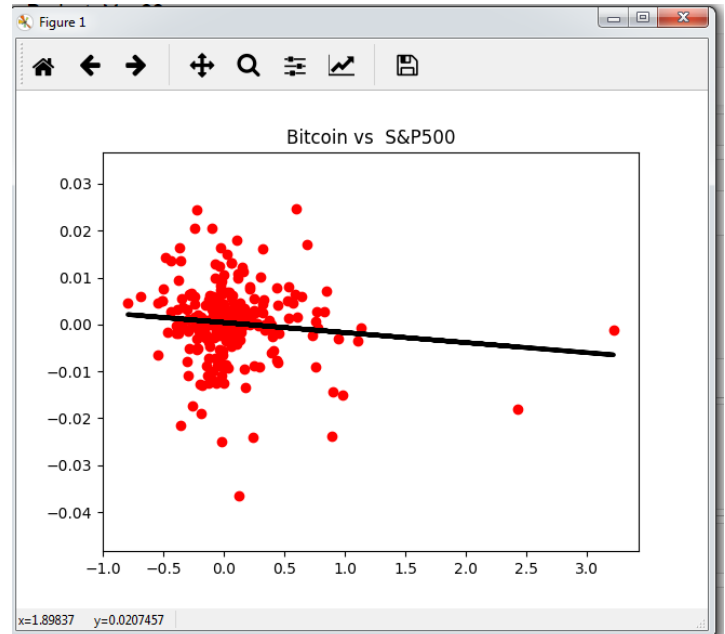
Intercept(Bitcoin): 0.00040244
Regression coefficient(Bitcoin): -0.0021412
Slope (Bitcoin) 0.01146888
Mean Squared Error (Bitcoin): 0.170659178555
Negatively Correlated

Treasury vs S&P500
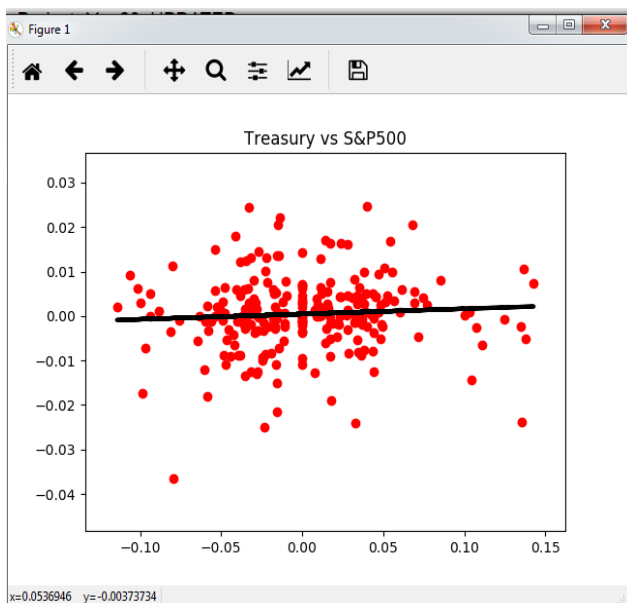
Intercept(Treasury): 0.00044744
Regression coefficient(Treasury): 0.0118197
Slope (Treasury) 0.00441808008949
Mean Squared Error (Treasury): 0.00218093990129 **Positively Correlated**

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