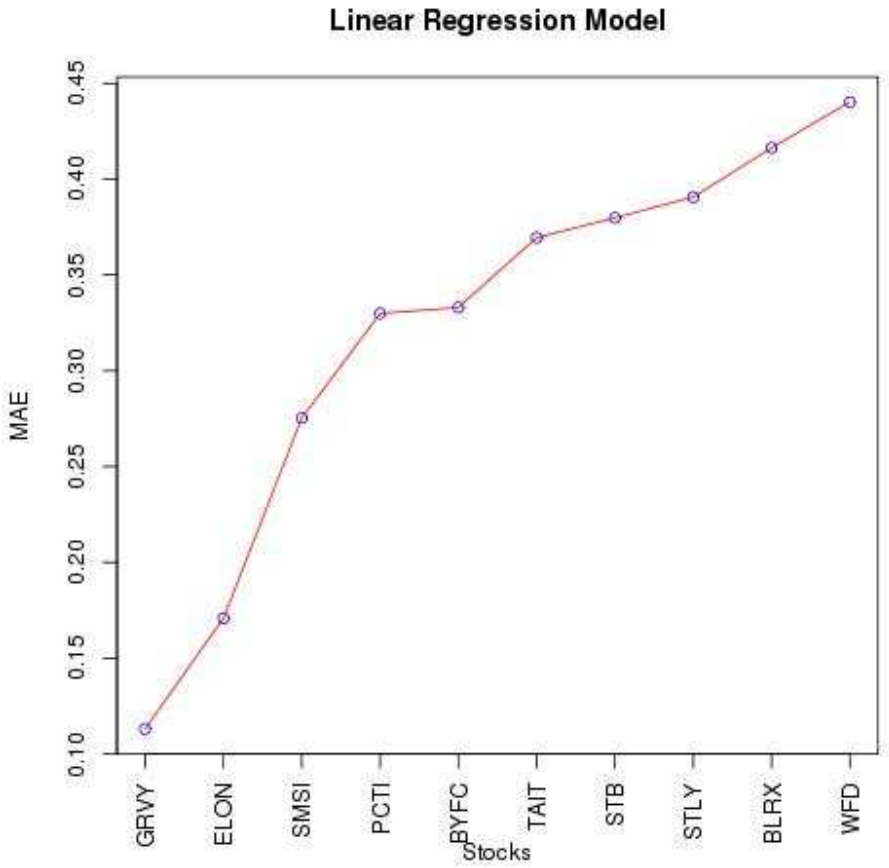
Home Work 02 Report

Ishan Bhatt
5013-4076

The top 10 minimum sum of MAE using linear Regression are:

	Stocks	MAE
1	GRVY	0.1130815
2	ELON	0.1708333
3	SMSI	0.2753055
4	PCTI	0.3298646
5	BYFC	0.3330336
6	TAIT	0.3694651
7	STB	0.3798104
8	STLY	0.3906403
9	BLRX	0.4163314
10	WFD	0.4402484



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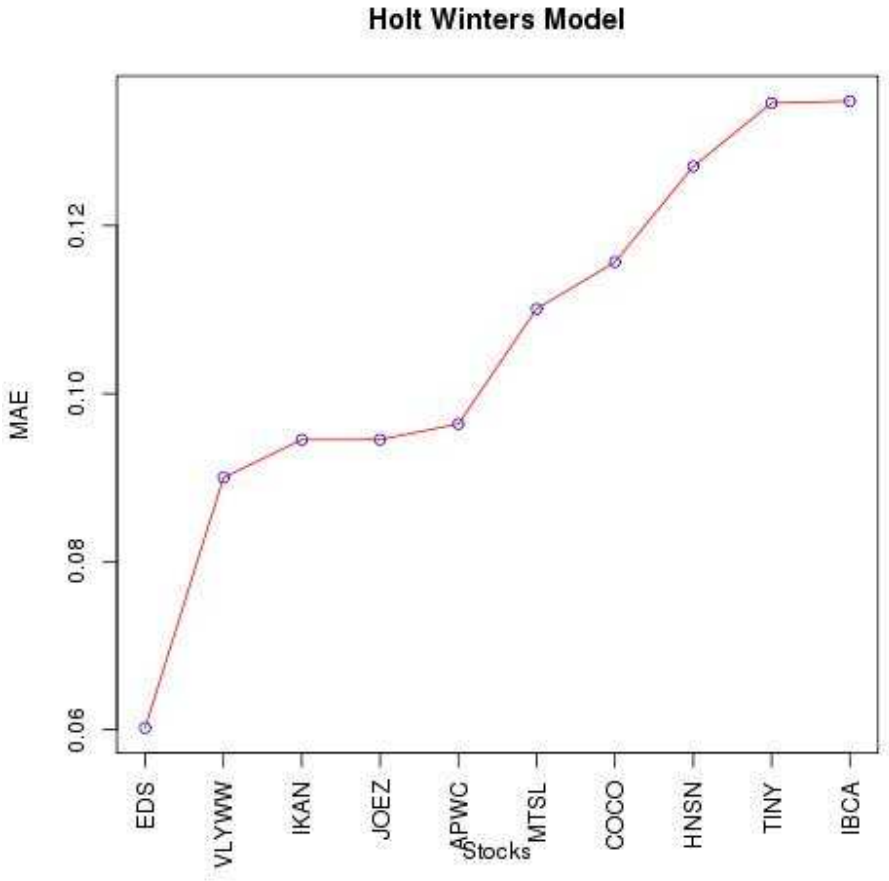
The top 10 minimum sum MAE using Holt Winters are:

	Stocks	MAE
1	EDS	0.06022709
2	VLYWW	0.09000000
3	IKAN	0.09451631
4	JOEZ	0.09452480
5	APWC	0.09639256
6	MTSL	0.11008672
7	COCO	0.11565898
8	HNSN	0.12703413
9	TINY	0.13458633
10	IBCA	0.13481835



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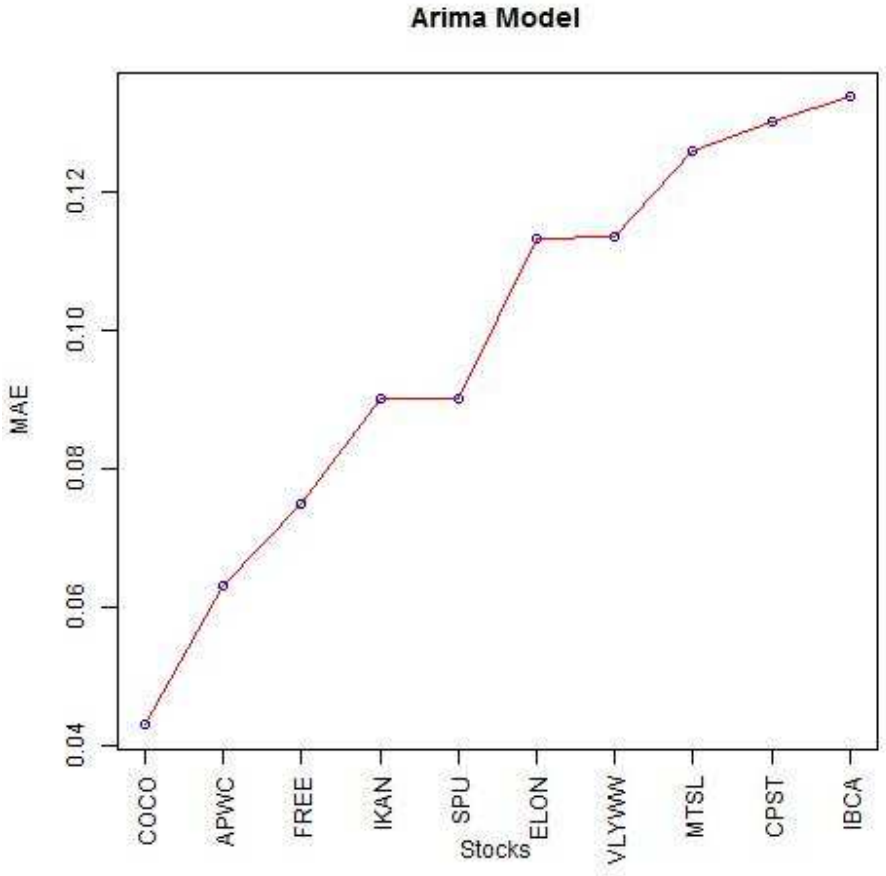
The top 10 minimum sum of MAE using Arima are:

	Stocks	**MAE**
1	COCO	0.04291029
2	APWC	0.06308866
3	FREE	0.07480337
4	IKAN	0.09000000
5	SPU	0.09000000
6	ELON	0.11315610
7	VLYWW	0.11343679
8	MTSL	0.12583623
9	CPST	0.13000000
10	IBCA	0. 13363392



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Problems Encountered and how I solved them:

1. Holt Winters model was throwing optimization error. I tried several combinations with the Holt Winters parameters. The one which worked was beta=FALSE and gamma=FALSE. But when I checked prediction vector it gave some NA values. But when I kept gamma parameter to FALSE there was a complete prediction set.

2. With the given code I was not able to plot the graph between stock names on the x axis and MAE values at the Y axis. So I optimized the code and made use of axis function which allowed me to plot the required graph.

3. The stocklist.txt file contained some bad entries for the data files like ULTA was given as ULTAInc. And JASO was given JASOLtd. This caused the execution to halt and an error was encountered. I put an if condition that when these values would be encountered they would be corrected and execution would carry on.

   Note-: As an observation auto.arima takes a lot of time for execution. It took about 22:30 hours for the complete job to execute. However when I restrict it to only non-seasonal models, i.e. set the parameter seasonal = FALSE, the job takes only 13-14 minutes to execute. However as it is mentioned in the code DO NOT EDIT in case of the auto.arima formula I am not keeping seasonal=FALSE.