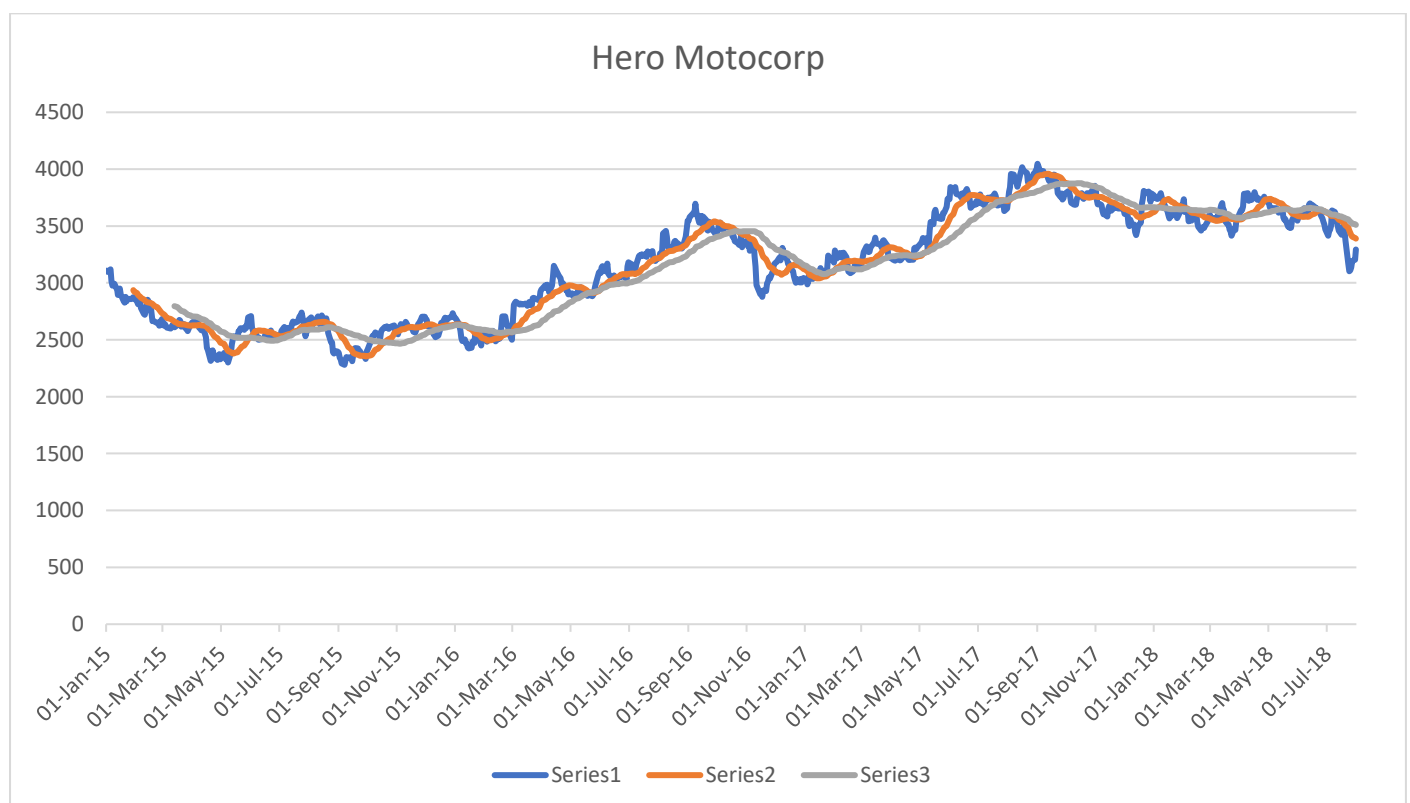
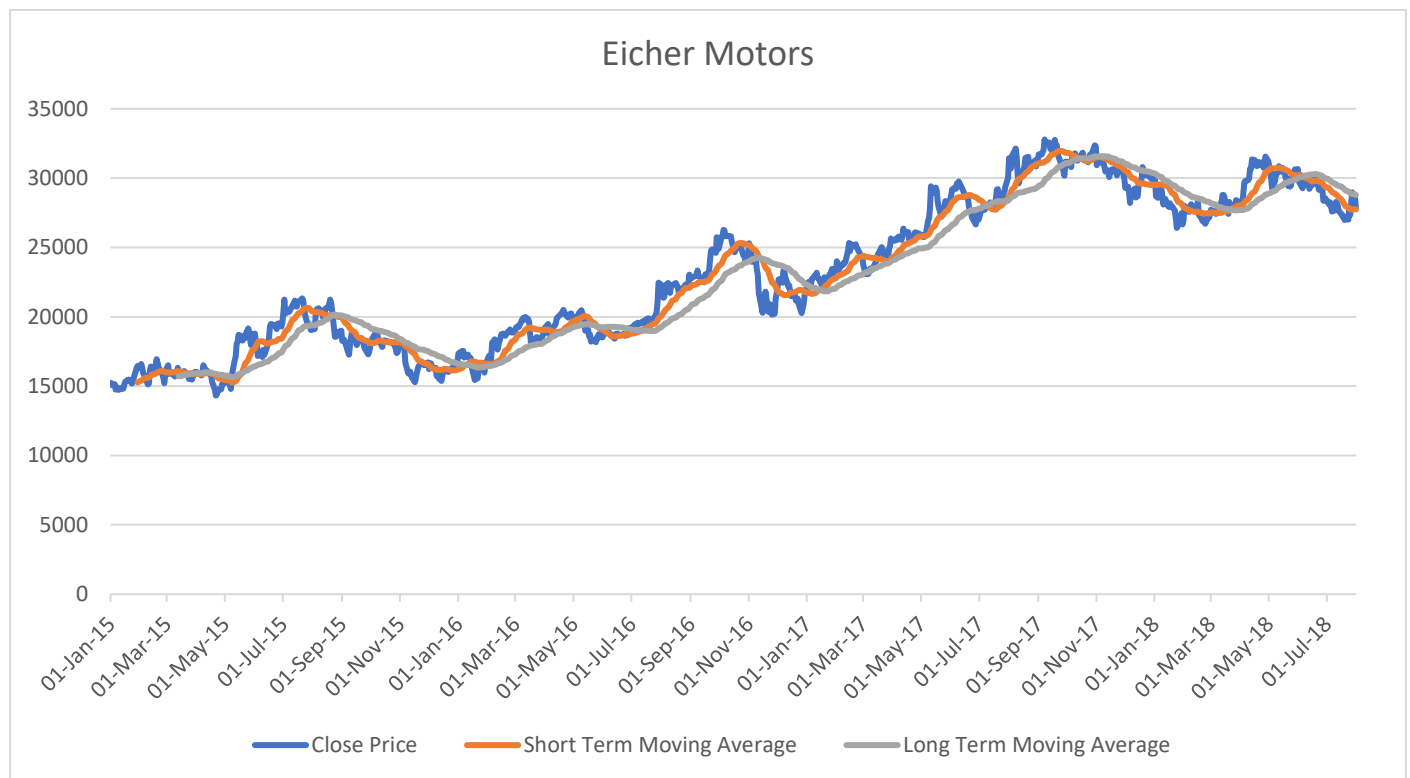
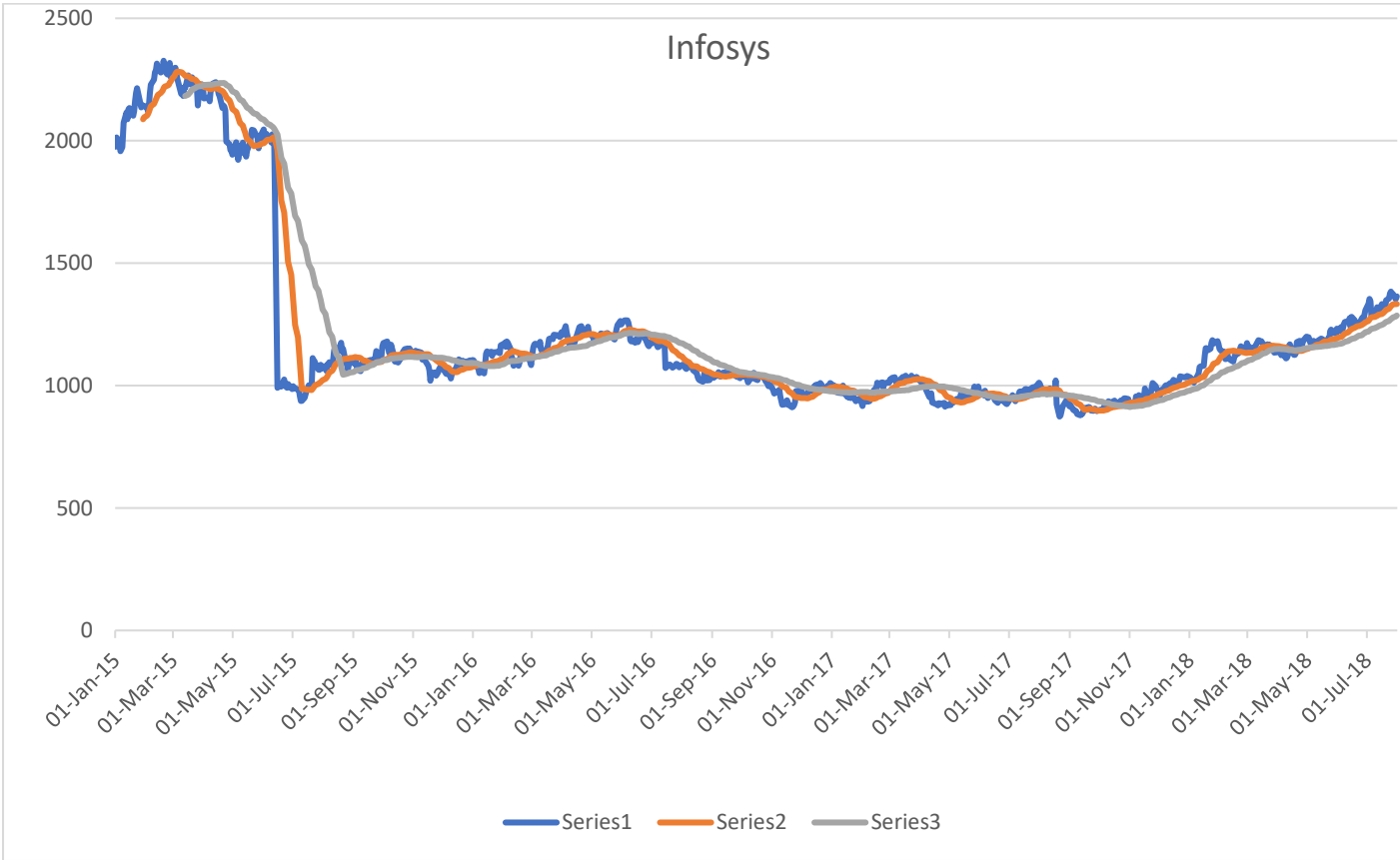
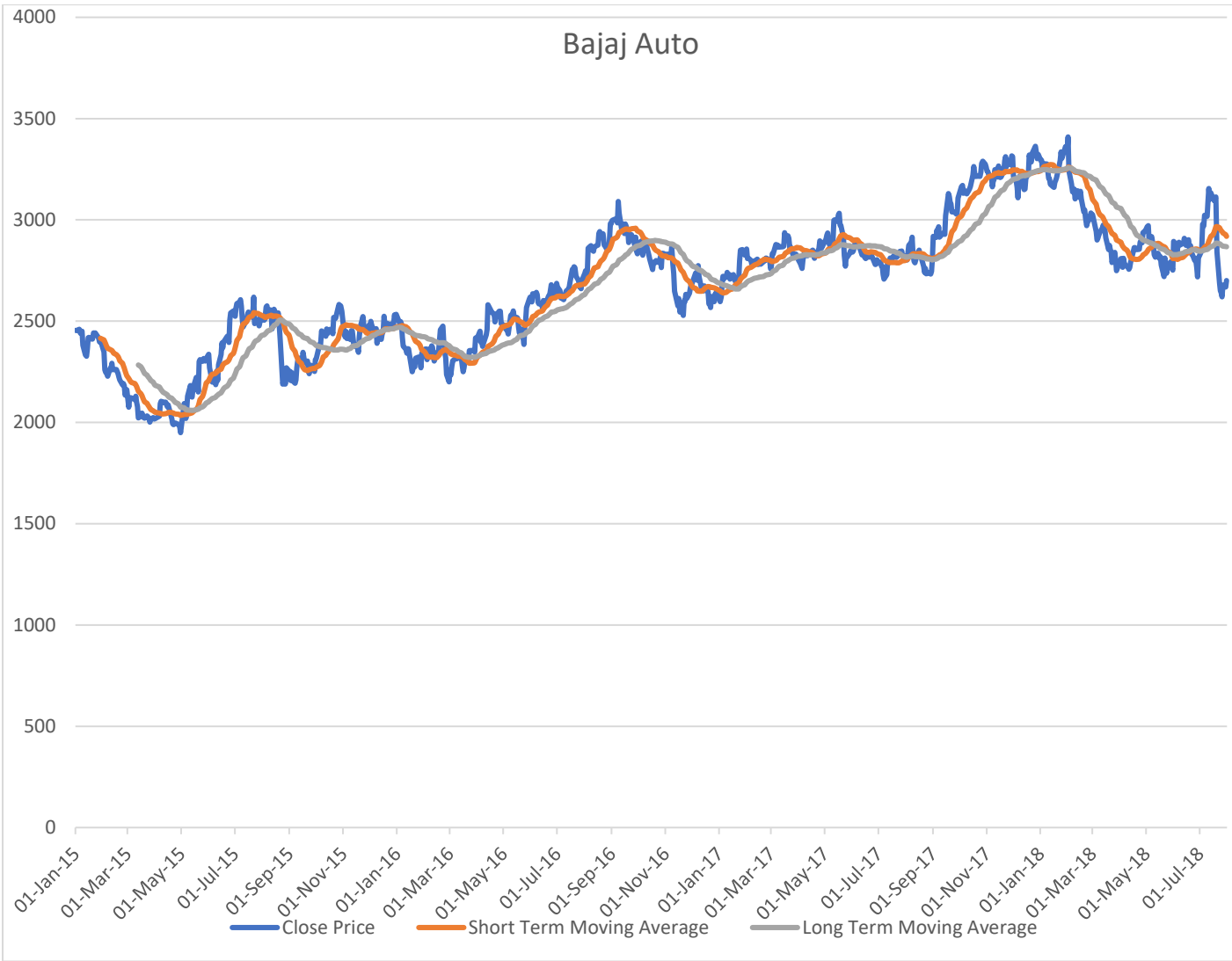


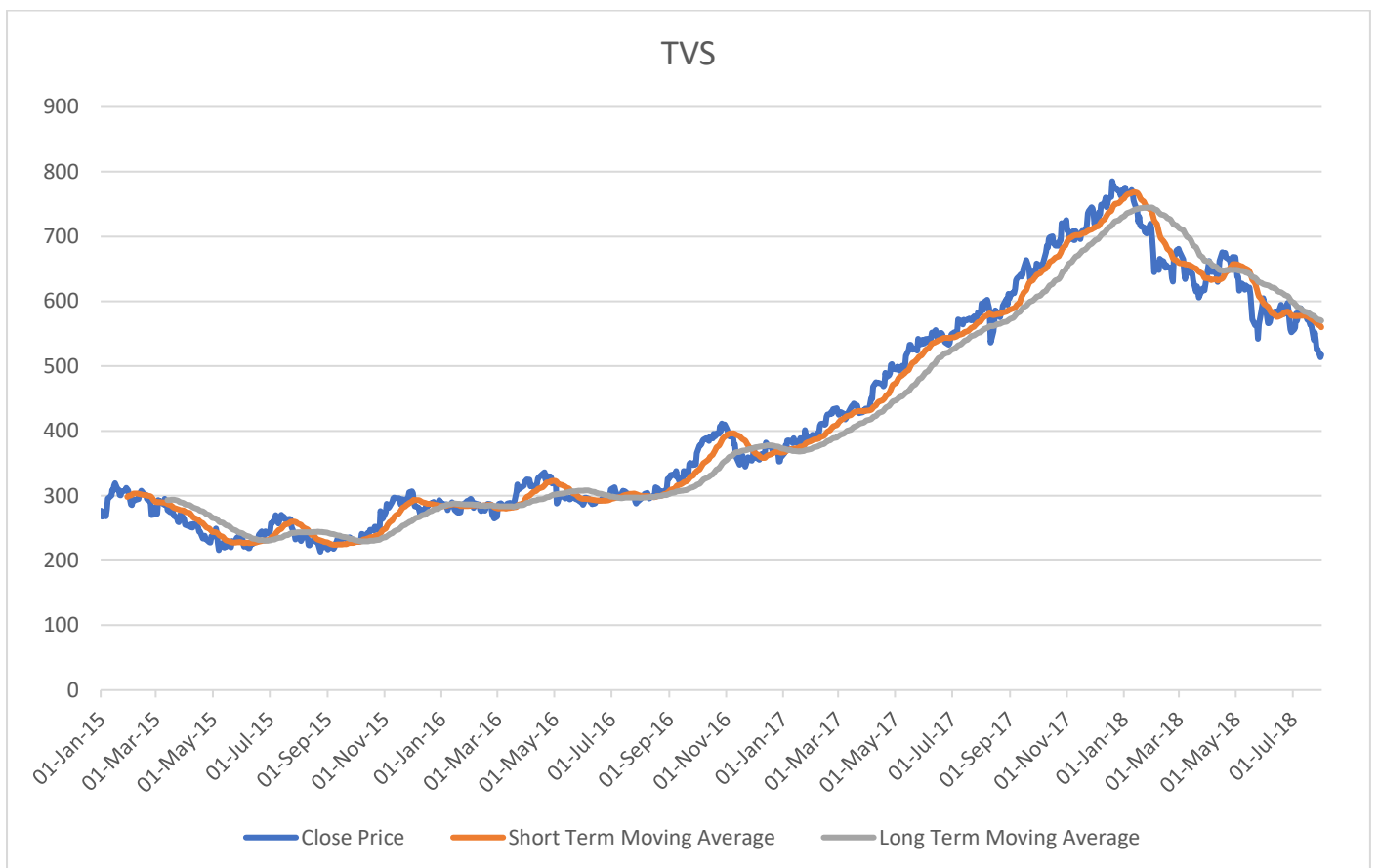
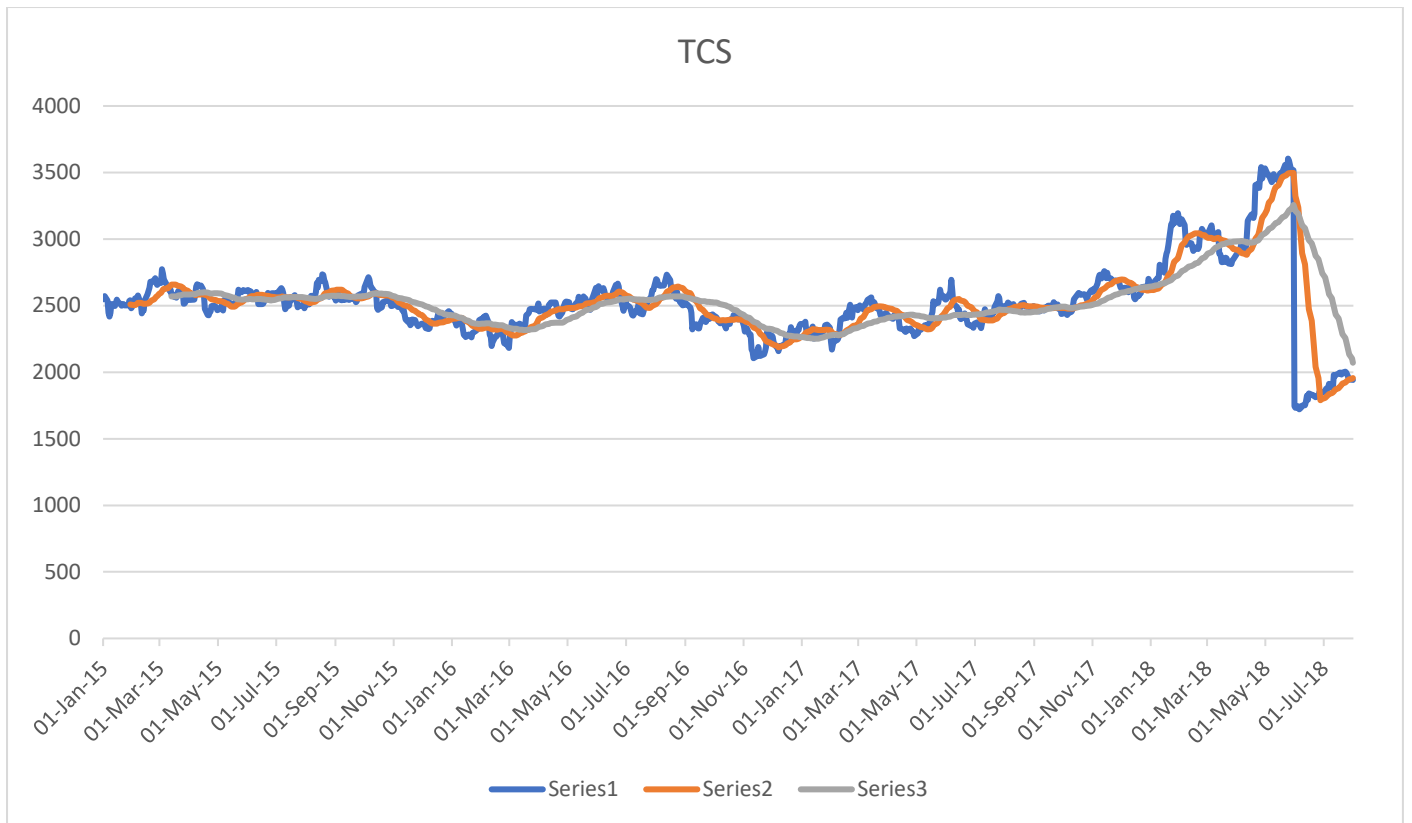
SQL Assignment- Stock Market Analysis

Dataset: The Stock price data provided is from 1-Jan-2015 to 31-July-2018 for six stocks Eicher Motors, Hero, Bajaj Auto, TVS Motors, Infosys and TCS.

Analysis: Simple Moving Analysis is used here to identify the signal i.e. Buy / Sell / Hold from the data provided. For our analysis we have considered **20 year moving average as short term** and **50 year moving average as long term**. Below are plots for Eicher Motors, Hero, Bajaj Auto, TVS Motors, Infosys and TCS showing the trend in their closing price marked in blue, Short term moving average marked in Orange and Grey as long term moving average.







When the shorter-term moving average crosses above the longer-term moving average, it is a signal to **BUY**, as it indicates that the trend is shifting up. This is known as a **Golden Cross**.

On the opposite when the shorter term moving average crosses below the longer term moving average, it is a signal to **SELL**, as it indicates the trend is shifting down referred to as the **Death Cross**.

Firstly, we need to ignore values till “2015-03-12” as we can’t calculate 50 day moving average before that and we can only consider those from 51st date

In order to identify the signal, we need to check the following conditions for each date.

- For **Buy** : If ‘20 Day MA’ – ‘50 Day MA’ > 0 AND ‘20 Day MA_Lag1’ – ‘50 Day MA_Lag1’ < 0, we need to find out the exact point where the short term average crosses over long term average and the sign is changed from previous date with Lag1.
- For **Sell** : If ‘20 Day MA’ – ‘50 Day MA’ < 0 AND ‘20 Day MA_Lag1’ – ‘50 Day MA_Lag1’ > 0, we need to find out the exact point where the short term average crosses below the long term average and the sign is changed from previous date with Lag1.
- Otherwise we need to **hold**.

For example :

Let’s consider an example from bajaj data, If we notice short term moving average is more than long term average and the just the previous is vice versa we can mention it as “**Buy**”, which means there is cross can also be referred as golden cross.

Result Grid					
Filter Rows:			Export:	Wrap Cell Content:	
	Date	Close Price	20 Day MA	50 Day MA	Signal
	2015-04-29	1978.1	2038.2375000000004	2081.9	Hold
	2015-04-30	1949.4	2034.5200000000004	2075.6530000000002	Hold
	2015-05-04	2093.7	2038.3375	2072.293	Hold
	2015-05-05	2063.35	2040.5724999999998	2068.7470000000003	Hold
	2015-05-06	2020.25	2040.0174999999995	2064.684	Hold
	2015-05-07	2067	2038.7175	2061.838	Hold
	2015-05-08	2129.35	2039.9474999999998	2060.7300000000005	Hold
	2015-05-11	2182.1	2044.1899999999998	2060.5330000000004	Hold
	2015-05-12	2128.95	2045.6074999999996	2059.496	Hold
	2015-05-13	2125.2	2046.8449999999998	2059.3010000000004	Hold
	2015-05-14	2165	2051.2049999999995	2059.592	Hold
	2015-05-15	2181.85	2055.9624999999996	2059.9930000000004	Hold
	2015-05-18	2221.95	2063.7749999999996	2062.9370000000004	Buy
	2015-05-19	2199.25	2072.8124999999995	2064.599	Hold
	2015-05-20	2150.5	2080.6899999999996	2065.167	Hold
	2015-05-21	2299.75	2096.2524999999996	2068.755	Hold
	2015-05-22	2310.5	2112.2074999999995	2072.703	Hold
	2015-05-25	2301.85	2127.4575	2076.161	Hold

Rest will be mentioned as “**Hold**”.

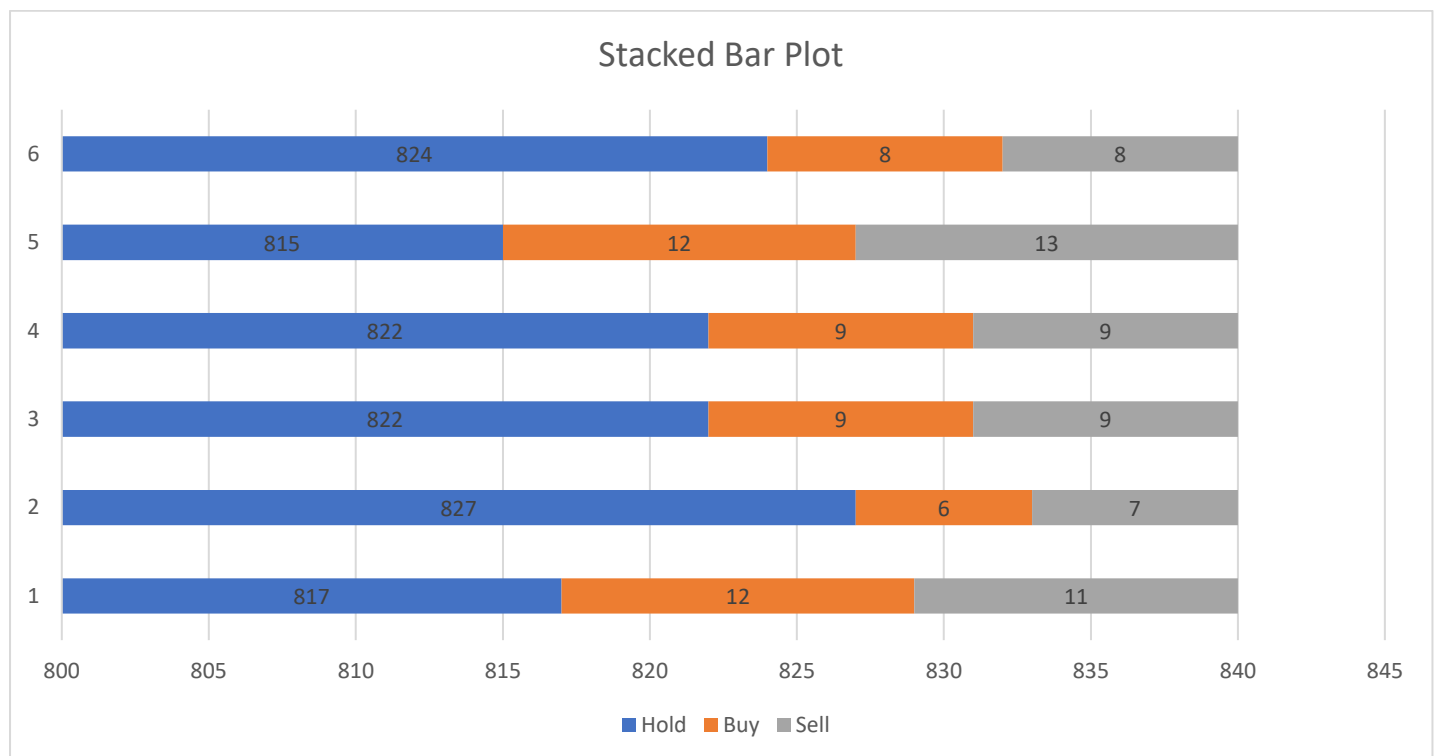
Similarly for “**Sell**”, if short term average is less than long term average and it’s previous date value are opposite which also means there is a cross also referred to as death cross.

2015-08-18	2522	2527.2020000000003	2491.6380000000006	Hold
2015-08-19	2541.25	2520.3100000000004	2497.6210000000005	Hold
2015-08-20	2492.1	2520.5275	2503.3120000000004	Hold
2015-08-21	2407.35	2516.0225	2505.7480000000005	Hold
2015-08-24	2188.45	2500.0599999999995	2502.831	Sell
2015-08-25	2204.65	2486.4899999999993	2499.097	Hold
2015-08-26	2244.15	2473.9399999999996	2496.619	Hold
2015-08-27	2189.3	2457.215	2492.458	Hold

Summary :

We found the following counts of Signal for different companies.

Sl. No.	Company	Hold	Buy	Sell	Total
1	Bajaj Auto	817	12	11	840
2	Eicher Motors	827	6	7	840
3	Hero Moto Corp	822	9	9	840
4	Infosys	822	9	9	840
5	TCS	815	12	13	840
6	TVS Motors	824	8	8	840



Inferences

- We can see Bajaj Auto and TCS has most golden cross and can be invested upon.
- Eicher Motors stocks has to be held up for most of the time which doesn't give much profit for holding.
- Infosys and Hero Motor Corp performed similar.