Finding All Golden and Death crosses

1. We record the points of 50DMA > 200DMA for each row in each file.
2. Recorded [50DMA > 200DMA] as Yes and No
3. The record when [50DMA > 200DMA] = Yes from No: Golden cross.
4. The record when [50DMA > 200DMA] = No from Yes: Golden cross.
5. Take all golden crosses records in one data frame (Golden Data Frame) and death crosses in another data frame (Death Data Frame).
6. Export them to excel for further analysis
7. Record the 1week to 24th week (6 months) returns in percent from the golden cross and death cross and add those as a column in Golden and Death cross data frame for further analysis.
8. We found the total of 71792 golden crosses and 74076 death crosses for all the stocks through the given time period.

   Data frame would look as below:

Golden cross points for all stocks are as follows:

	date	close	symbol	50DMA	200DMA	50DMA > 200DMA	W1%change	W2%change	W3%change	W4%change	W8%change	W12%chang
0	2002-02-05	19.427753	A.csv	20.819027	20.813233	Yes	-3.68	-4.09	9.39	28.50	31.44	10.(
1	2003-05-27	12.267525	A.csv	10.876395	10.832940	Yes	11.08	9.62	12.19	9.33	25.25	41.(

Observation:

1. From each change percent column (Week1 to Week24) of golden data frame and Death data frame find the stock returns and maintained in the different data frame to check the total percent return over the 1st week to 24th week (6 months)

   Golden cross return percent for all stocks are as below:

Golden cross percent returns are as follows:

Week	-10	-5	-4	-3	-2	-1	1	2	3	4	5	10	15	20
1	7.66	3.41	4.62	6.35	8.88	30.95	9.20	6.35	4.39	3.01	6.72	1.89	0.80	1.09
2	9.64	3.47	4.60	5.86	7.11	24.02	7.91	5.92	4.55	3.55	9.15	3.19	1.44	2.15
3	10.55	3.40	4.09	5.16	6.07	20.79	6.61	5.51	4.62	3.59	10.32	4.27	1.93	3.24
4	10.56	3.25	3.76	4.52	5.24	18.65	5.97	5.09	4.44	3.59	11.30	4.88	2.52	4.21
8	10.46	2.75	2.98	3.48	3.91	14.27	4.37	4.08	3.44	3.17	11.90	6.73	3.76	7.99
12	9.51	2.30	2.56	2.80	3.02	12.57	3.49	3.36	3.26	2.99	11.06	7.22	4.45	11.40
16	8.92	2.17	2.26	2.57	2.65	11.54	2.96	2.77	2.67	2.45	10.43	7.29	5.07	14.31
20	8.32	2.00	2.15	2.25	2.41	10.69	2.75	2.51	2.43	2.35	9.91	7.19	5.05	16.68
24	7.69	1.84	1.91	2.19	2.27	10.67	2.38	2.42	2.23	2.14	9.23	6.99	5.15	18.77

Analysis of the stocks over a period:

Surprisingly, if we see the overall percentage of stocks return during the golden cross and the death cross period, we do not find much difference on the first go.

So, to study it more, we calculated the negative returns also.

When stock achieved golden cross or death cross, many stocks gave the - 2% to +2% return for the next following days.

But over the long run (after 4 months) many stocks gives approximately 15 to 20% returns once the cross occurs.

If we look at both positive and negative returns, once the golden cross occurs percentage of stocks those give the positive return is marginally higher than stocks which returns negative. Vice versa is true when the death cross happens.

We can say that golden and death cross theory persists over a short time period. But at every cross (whether it's golden or death), the sudden price movement exists for most of the stocks for sure. But over the long run, stocks tend to give positive returns after the cross.

So, the cross theory is significant in the stock market to notify the trend change in the stock price for a shorter period. Moreover, it is a convincing theory for those, who trade daily/ for short term.

Correlation between 50 day moving average vs 200 days moving average:

- ❑ We calculated the correlation on the frames of 50DMA > 200DMA and 50DMA < 200DMA
- ❑ Result is as below:

50DMA > 200DMA	Correlation	correlation range	Stock trend
Yes	Positive correlation	0.5-0.8	Bullish
No	Negative correlation	(-0.8)-0.4	Unpredicted
At cross	Golden / Death cross	-1	Reversal Trend

- We observed one pattern when 50 DMA > 200 DMA.

closing price movement	Trend	Signal
50DMA> close>200DMA	Bullish Trend-steady improvement	Buy
close> 50DMA>200DMA	Peak point of bullish trend	Hold or Sell

The data used for this case study was not clean data. If we take all the stocks for the same period, the result could be clearer.