

Problem Introduction

Two of India's biggest stock exchanges BSE and NSE, collectively clear trades combining to greater than 40,000 crores every day. As you might already be aware, a lot of trading happens on the basis of technical and fundamental analysis.

One of the most basic technical analysis used by a lot of stock traders is the Moving Average Method. Consider the following price trend of a particular stock.

Week 1: 13,14,11,17,19

Week 2: 26,23,22,22,14

Week 3: 17,19,13,16,17

Day	Price	10 Day	Value used for 10 Day MA	5 Day	Value used for 5 Day MA
1	13				
2	14				
3	11				
4	17				
5	19			14.8	Average of Day 1 Through 5
6	26			17.4	Average of Day 2 Through 6
7	23			19.2	Average of Day 3 Through 7
8	22			21.4	Average of Day 4 Through 8
9	22			22.4	Average of Day 5 Through 9
10	14	18.1	Average of Day 1 Through 10	21.4	Average of Day 6 Through 10
11	17	18.5	Average of Day 2 Through 11	19.6	Average of Day 7 Through 11
12	19	19	Average of Day 3 Through 12	18.8	Average of Day 8 Through 12
13	13	19.2	Average of Day 4 Through 13	17	Average of Day 9 Through 13
14	16	19.1	Average of Day 5 Through 14	15.8	Average of Day 10 Through 14
15	17	18.9	Average of Day 6 Through 15	16.4	Average of Day 11 Through 15

Moving Average

As you can see, Moving average use the past data to smoothen the price curve. For the purpose of this assignment, we will be using 20 Day and 50 Day moving averages.

Now that you know about the concept of Moving average, you shall be wondering how to use it to determine whether to buy or sell a stock.

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. It is sometimes referred to as the Death Cross.

Please note that it is important that the Moving Averages Cross each other in order to generate a signal. Merely being above or below is not sufficient to generate a signal.

When the signal is neither buy nor sell, it is classified as hold. If you already own the stock, keep it and if you don't then don't buy it now.