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# The Quick Trend Trading Strategy.

Creating a Trend-Following Strategy Using the Hull Moving Average.





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Trend-following strategies come in all shapes and forms. This article proposes an algorithmic way of confirming a change in trend using the Hull moving average as an example.

I have just released a new book after the success of my previous one “*The Book of Trading Strategies*”. It features advanced trend-following indicators and strategies with a **GitHub** page dedicated to the continuously updated code. Also, this book features the original colors after having optimized for printing costs. If you feel that this interests you, feel free to visit the below Amazon link, or if you prefer to buy the PDF version, you could contact me on **LinkedIn**.

### **Trend Following Strategies in Python: How to Use Indicators to Follow the Trend.**

Amazon.com: Trend Following Strategies in Python: How to Use Indicators to Follow the Trend.: 9798756939620: Kaabar...

[www.amazon.com](https://www.amazon.com)

## **The Hull Moving Average**

Moving averages help us confirm and ride the trend. They are the most known technical indicator and this is because of their simplicity and their proven track record of adding value to the analyses. We can use them to find support and resistance levels, stops and targets, and to understand the underlying trend. This versatility makes them an indispensable tool in our trading arsenal.

What interests us to build the Hull moving average is the linear-weighted moving average. The most recent observation has the biggest weight and each one prior to it has a progressively decreasing weight. Intuitively, it has less lag than the other moving averages but it is also the least used, and hence, what it gains in lag reduction, it loses in popularity.



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Basically, if we have a dataset composed of two numbers [1, 2] and we want to calculate a linear weighted average, then we will do the following:

- $(2 \times 2) + (1 \times 1) = 5$
- $5 / 3 = 1.66$

This assumes a time series with the number 2 as being the most recent observation. Now that we have understood what a weighted moving average is, we can proceed by presenting the Hull moving average, a powerful trend-following early system.

The Hull moving average uses the weighted moving average as a building block and it is calculated following the below steps:

- **Choose a lookback period such as 20 or 100 and calculate the weighted moving average of the closing price.**
- **Divide the lookback period found in the first step and calculate the weighted moving average of the closing price using this new lookback period. If the number cannot be divided by two, then take the closest number before the comma (e.g. a lookback of 15 can be 7 or 8 as the second lookback).**
- **Multiply the second weighted moving average by two and subtract from it the first weighted moving average.**
- **As a final step, take the square root of the first lookback (e.g. if you have chosen a lookback of 100, then the third lookback period is 10) and calculate the weighted moving average on the latest result we have had in the third step. Be careful not to calculate it on market prices.**

Therefore, if we choose a lookback period of 100, we will calculate on 100 lookback period, then on 50, and finally, on 10 applied to the latest result.



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**Daily EURUSD values with the 50-period Hull moving average.**

Now, it is time to discuss the strategy on the Hull moving average.

If you want to see more articles, consider subscribing to my DAILY Newsletter (A **Free** Plan is Available) via the below link. It features **my Medium articles, more trading strategies, coding lessons related to research and analysis, also, subscribers get a free PDF copy of my first book.** You can expect **5–7** articles per week with your paid subscription and **1–2** articles per week with the free plan. This would help me continue sharing my research. Thank you!

### **All About Trading!**

Sharing Trading Strategies, Knowledge, and Technical Tools in Detail.

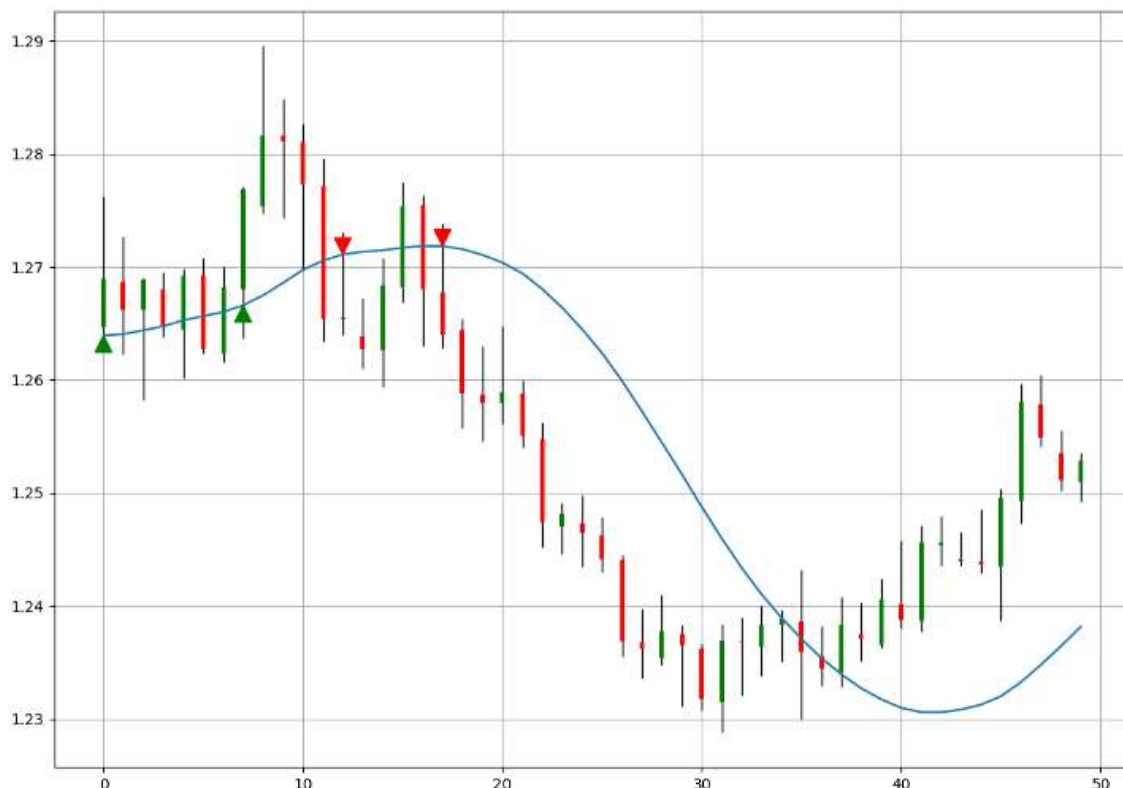


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## Creating the Strategy

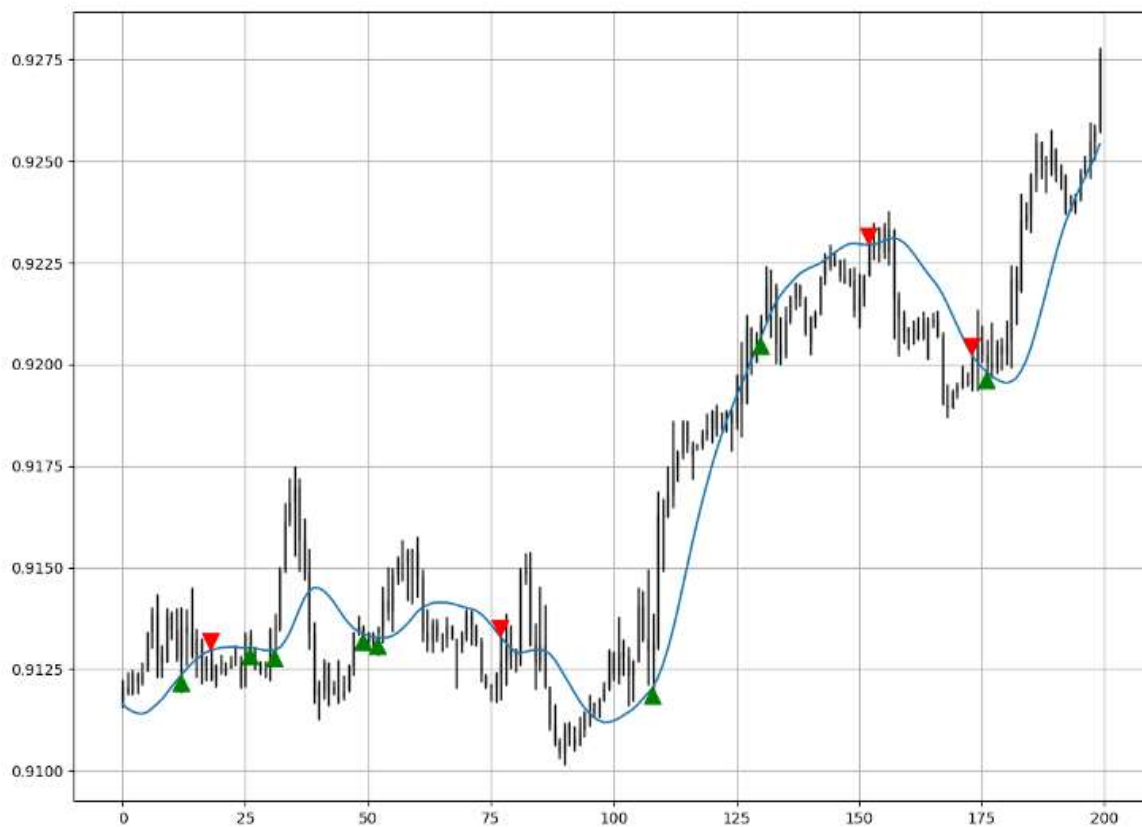
The strategy is not the usual moving average cross as its idea is that whenever the market crosses over or under its moving average, we must wait for the pull-back before riding the new implied trend, therefore, we will be coding the following conditions:

- A long (Buy) signal is generated whenever the market surpasses the 50-period Hull moving average and then shapes a pull-back towards the moving average through at least its low.
- A short (Sell) signal is generated whenever the market breaks the 50-period Hull moving average and then shapes a pull-back towards the moving average through at least its high.




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Take a look at the above chart on the USDCAD. Notice the first bearish signal where after a big red candle the market pulled-back to the moving average from where a bearish signal was generated. The next bearish signal is the same and has performed significantly well. Take a look at around point 37 in time, we see that the market has surpassed the moving average but no bullish signal was generated, why is this? Notice how the first bullish candle that closes above the moving average was never followed by one that pulls-back towards the moving average. This does not constitute a valid bullish signal.



**Signal chart on USDCHF.**

```
def signal(Data, high_column, low_column, close_column, ma_column,
buy_column, sell_column):
```



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```

        if Data[i, close_column] > Data[i, ma_column] and Data[i - 1,
close_column] < Data[i - 1, ma_column]:

            for a in range(i + 1, len(Data)):

                if Data[a, low_column] <= Data[a, ma_column] and
Data[a, close_column] > Data[a, ma_column] and \
                    Data[a - 1, close_column] > Data[a - 1, ma_column]:

                    Data[a, buy_column] = 1
                    break

                elif Data[a, sell_column] != 0:
                    break

            elif Data[a - 1, sell_column] != 0:
                break

            else:
                continue

        # Bearish Signal
        elif Data[i, close_column] < Data[i, ma_column] and Data[i -
1, close_column] > Data[i - 1, ma_column]:

            for a in range(i + 1, len(Data)):

                if Data[a, high_column] >= Data[a, ma_column] and
Data[a, close_column] < Data[a, ma_column] and \
                    Data[a - 1, close_column] < Data[a - 1, ma_column]:

                    Data[a, sell_column] = -1
                    break

            elif Data[a, buy_column] != 0:
                break

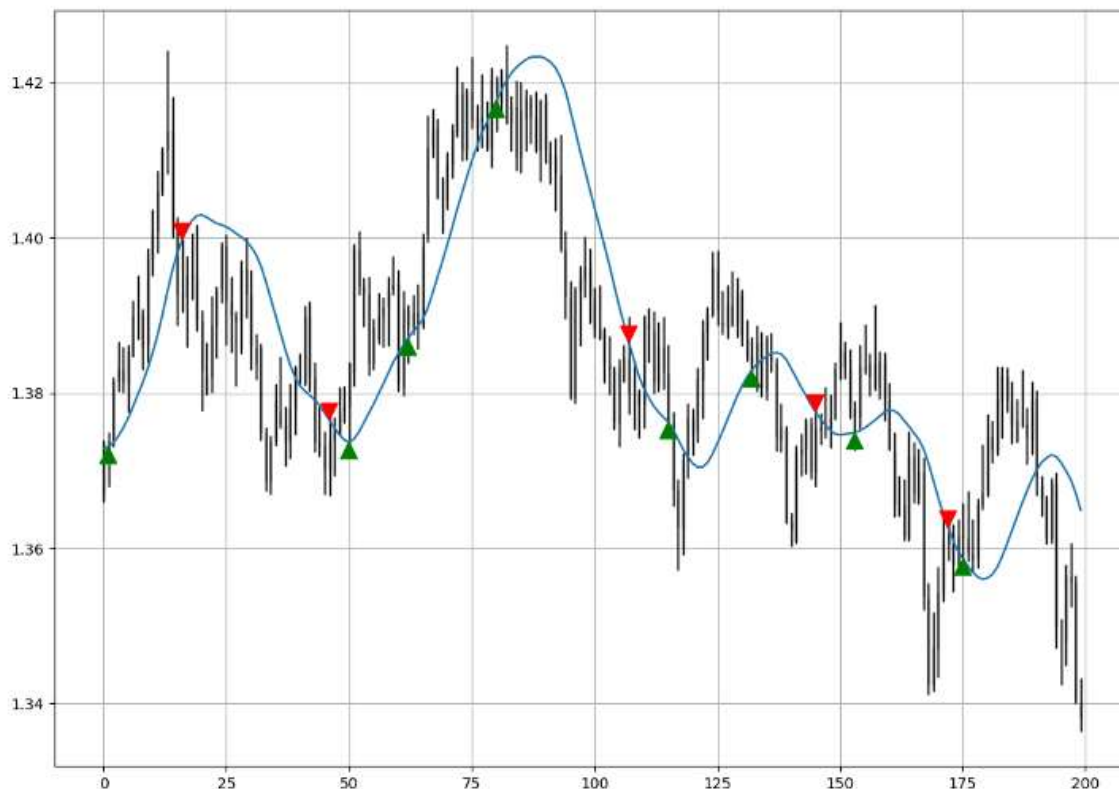
            elif Data[a - 1, buy_column] != 0:
                break

            else:
                continue

    return Data

```



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**Signal chart on GBPUSD.**

If you are also interested by more technical indicators and strategies, then my book might interest you:

### **The Book of Trading Strategies**

Amazon.com: The Book of Trading Strategies: 9798532885707: Kaabar, Sofien: Books

[www.amazon.com](https://www.amazon.com)





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I am a firm believer of not spoon-feeding. I have learnt by doing and not by copying. You should get the idea, the function, the intuition, the conditions of the strategy, and then elaborate (an even better) one yourself so that you back-test and improve it before deciding to take it live or to eliminate it. My choice of not providing specific Back-testing results should lead the reader to explore more herself the strategy and work on it more.

Medium is a hub to many interesting reads. I read a lot of articles before I decided to start writing. Consider joining Medium using my referral link!

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To sum up, are the strategies I provide realistic? *Yes*, but only by optimizing the environment (robust algorithm, low costs, honest broker, proper risk management, and order management). Are the strategies provided only for the sole use of trading? *No*, *it is to stimulate brainstorming and getting more trading ideas as we are all sick of hearing about an oversold RSI as a reason to go short or a resistance being surpassed as a reason to go long. I am trying to introduce a new field called Objective Technical Analysis where we use hard data to judge our techniques rather than rely on outdated classical methods.*

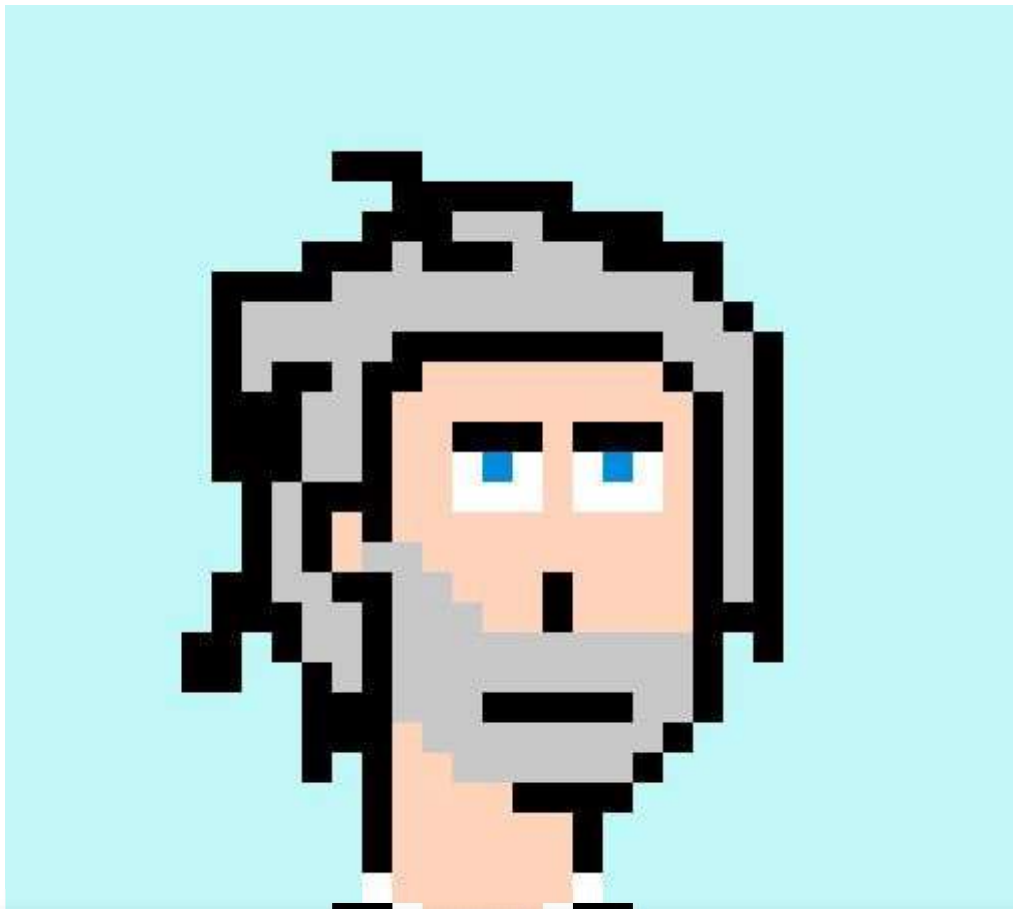
## One Last Word

I have recently started an NFT collection that aims to support different humanitarian and medical causes. **The Society of Light** is a set of limited collectibles which will help make the world slightly better as each sale will see a percentage of it sent directly to the charity attributed to the creator. As I always say, nothing better than a bullet list to outline the



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- **High-potential gain:** By concentrating the remaining sales proceedings on marketing and promoting **The Society of Light**, I am aiming to maximize their value as much as possible in the secondary market. Remember that trading in the secondary market also means that a portion of royalties will be donated to the same charity.
- **Art collection and portfolio diversification:** Having a collection of avatars that symbolize good deeds is truly satisfying. Investing does not need to only have selfish needs even though there is nothing wrong with investing to make money. But what about investing to *make money, help others, and collect art*?
- **Donating to your preferred cause(s):** This is a flexible way of allocating different funds to your charities.
- **A free copy of my book in PDF:** Any buyer of any NFT will receive a free copy of my latest book shown in the link of the article.



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