

## Why MetaTrader 4?

There are many software that you can use to build and implement Trading Robots. For our course, we choose MetaTrader 4. We considered a few other software to use for this course. However, we decided that MT4 is the most suitable for someone new to algorithmic trading.

### Advantages

#### Free

This is the most important reason.

#### Free data

This is the second most important reason. We can get free live data from the Broker and historical data is available from Metaquotes and online sources like Dukascopy. Many other trading software require us to buy past and live data from either the broker or external vendors. This is not only costly, but it is inconvenient (especially when starting out).

#### Access to different markets

We can test and trade Forex, Equities Indices, Equities (Stock), Commodities, Fixed Income and Cryptocurrencies. (Other than FX, the rest are CFDs<sup>1</sup>)

#### Ease of learning the coding language

The MQL4 language is similar to C++. There are many libraries and resources available online to guide new coders.

#### Convenient software infrastructure

The entire backtesting, optimisation, live trading and data management system is done up for you. You can focus on coding your strategy and not spend time with setting up your technical software systems.

### Disadvantages

#### Cannot backtest strategy that trades multiple instruments

If your strategy requires you to fire trades on multiple instruments, it cannot be **backtested** on one EA. However, it can be run **live** using one EA.

#### Difficulty doing statistical analysis

It is difficult to incorporate statistical elements in the EA. However, we can carry out statistical analysis on the data using excel or other statistical software and import trading signals in. Performance analysis can be done using 3<sup>rd</sup> party software, more on that in the later chapters.

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<sup>1</sup> [https://en.wikipedia.org/wiki/Contract\\_for\\_difference](https://en.wikipedia.org/wiki/Contract_for_difference)

## Other possible software

Amibroker  
Multicharts  
Ninja Trader  
TT X Trader  
CQG  
Trade Station  
Quantopian  
MATLAB  
Excel

Reasons we didn't use these software include, but are not limited to:

- 1) Cost
- 2) Difficulty of learning the coding language
- 3) Complicated user interface
- 4) Backtester and optimiser not included. Only running of live robots allowed.
- 5) Software not designed for building and trading robots. Need to build the backtester from scratch
- 6) Limited access to markets
- 7) Poor community support and documentation

When you have "graduated" from this course, do check out the other software and make a decision on software infrastructure based on your trading goals. Cheers!

## Why not MT5?

The main reason we use Metatrader 4 over Metatrader 5 is because MQL4 (the coding language of MT4) has a lower learning curve and that Metatrader 4 allows us to have control over our data.

Some differences between MT4 and MT5:

- 1) Different coding language (MQL4 vs MQL5). MQL5 is more difficult to pick up for beginners
- 2) MT4 has been around longer and has greater online coding support. There are many code libraries, templates and examples for MT4
- 3) MT5 has a more powerful optimisation engine
- 4) MT5 allows peer-to-peer bandwidth sharing for optimisation (meaning you can use other user's PC computing capacity for your optimisation)
- 5) MT5 allows trading of stocks, futures and options
- 6) MT5 does not allow external data import (This is deal breaker as data management is a huge component of backtesting)

## MT4 vs Python

MT4 and Python are complementary. MT4 is strong in areas where Python is weak in and vice versa.

### 1) Learning Curve (MQL4 wins)

Learning MQL4 is much easier for beginners. As mentioned, the infrastructure - backtester, optimiser, data management and live trading systems are all set up for you (you'll only appreciate this after you finish the AT101 course and move on to the PT101 course). You'll take days to set up your first robot on MQL4 as opposed to weeks if you use Python.

### 2) Integrating with brokers (MQL4 wins)

MQL4 integrates directly with your brokers. Brokers are companies that give you trading access to the markets. For Python, you need to design stable software systems to reliably connect to your brokers.

### 3) Access to products (Python wins)

MT4 only allows trading of FX and CFDs. For Python, you can trade all asset classes, including futures and options, across different markets around the world.

### 4) More functionalities (Python wins)

Python allows you to test and run any kind of strategies, including complex ones. You can run statistical analysis (including machine learning). Python is much faster than MT4, but this not an important factor as you are just starting out.

*Long story short: We prefer MT4 for beginners due to speed and ease of learning. You might take 1 week to code, backtest and launch your first (simple) robot on MT4. That would take months on Python.*

## Appendix: Why Forex<sup>2</sup> (FX)?

Most of our first examples will be based on Forex.

### Convenient

Forex data isn't affected by market variables such as stock splits, futures roll, expiries and dividends etc. These factors will greatly complicate our testing and data cleaning process.

### Data is available

Free data everywhere! Data on other instruments is much harder to obtain.

### Can modify to fit other instruments

Once we build our robots. We can modify it easily to fit CFDs on other asset classes.

### Main component traded on MT4

Since it is the main asset traded on MT4, I guess we don't have much of a choice, do we?

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<sup>2</sup> <https://www.babypips.com/learn/forex/what-is-forex>

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*End note: Don't be too obsessed over Forex. Forex is an efficient market. This means there are few opportunities if you trade it on its own. Opportunities lie in less popular markets, as you will learn as the course goes on.*