https://www.garot.com/trading/

Introduction

This is the informal video blog.

This VLOG series will show you how to build an MQL5 Expert Advisor from scratch.

By “informal” I mean that a lot of time and attention won’t be put into video production. I’d rather just get down to the code.

While creating the EA, I will verbally describe some programming tips and pitfalls.

The final code for each VLOG series segment will be available on my website.

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I call this the Rapid Doji EA.

EA, of course, stands for Expert Advisor.

I term this “Rapid” because I am just going to do something down and dirty—I won’t be putting full error checking or writing unit tests. I normally do this, and you should do this too; but this is beyond the scope of this video series.

The EA is designed for the Daily time frame because technical analysis of candlesticks works best at higher time frames.

The entry will consist of two STOP orders, one BUY and one SELL, around each Doji bar.

Risk adjustment is handled by a trailing stop loss, and exits occur when the SL is hit.

Opening MetaEditor

We first start by opening the meta editor on MT5.

This is the Rapid EA code.

Start with general comments toward the top.

In the next section you will see the program properties. These are compiler directives that specify information about the EA, such as the copyright, a link to my website, the version number, and description.

The description will be shown when the EA first runs on the popup window. So, if you are writing an EA to sell, you will want to put some time and attention toward that.

The includes reference the MQL5 standard libraries for trading.

I have defined a few **Global Variables**. You can access and change a global variable anywhere in the code.

Be careful with Global Variables! They make code hard to read and hard to fix, especially with lengthy code.

In this case, I have a global variable that instantiates an object to the CTrade class. Because that object will be used from anywhere in the code, I am OK with it being global.

Similarly, I have a global variable to point to the symbol point size, which will never change for the

duration of this particular EA. If this EA was multi-currency, I would never have a short-hand global variable like this.

Note the comment where I initialize the variable to a “ludicrous value.” If somehow this variable isn’t later set to an appropriate or meaningful value, I want to be alerted quickly. I should be able to trace back problems more quickly to a decidedly wrong value. Perhaps even -1 would be better here.

As a final note, I put g_ in front of all global variables. You don’t have to do it this way, but for me, it makes code easier to read when I know the scope of a variable at a glance.

Here is where I define global **constants**. These are like variables, but they never change. That makes them safe. Note that I generally make constants all upper case.

The magic number is a unique number used by the EA to differentiate it from any other running EA's. I define this as a constant because I never want it to change while the EA is running. It would take recompiling the code to change it, and I prefer that level of safety here. You can have multiple EA's running in any single MT5 instance as long as they are attached to separate charts, but that's easily done. We will talk more about the magic number later.

Now we get to the OnInit() event. This is first run when the EA starts. It returns an integer value describing if it has failed or not. Typical values are INIT_SUCCEEDED and INIT_FAILED, but there are others. We can take a look at the documentation to see these.

Now let’s take a look inside. The first thing I do is check if the broker runs with netting or hedging. This is important in the United States (USA) because hedging is not allowed by law.

Next we set the magic number. This is fairly straightforward. We used a method from the globally defined CTrade object.

Next I initialize the global “point size” variable. For any non-JPY currencies, the value is depicted in 5 digits, and for JPY currencies, in 2 digits. Other instruments can have other values.

Finally, if we get this far, I want to print to the log that the EA has successfully initialized, and we are good to go.

Looking at the Documentation

https://www.mql5.com/en/docs/event_handlers/oninit

Before I run the EA in MT5, I want to touch on the MQL5.com website resources. These are invaluable resources for coding your own EA.

The CodeBase has tons of user supplied code examples including EAs, Scripts, and Indicators.

There are tons of articles that go in-depth into specific topics.

The Freelance section allows you to contact developers who will create your EA for you for a nominal price.

And the Forum is a great place to ask a question if you simply cannot get something to work. However, I recommend you search for your answer first, and if you cannot find anything, be sure to give a complete description of the problem.

The API documentation is all online. (You can also download a local PDF copy for offline usage.) I generally go right through Google by prefacing any search with MQL5.

Generally the first search result for documentation is the correct one. If you are searching for an issue, you may need to read a few threads in the forum to find the answer—but this is part of your education in writing MQL5 code—even if a post isn't directly related to your issue, you may learn something useful for later.

Here you see the OnInit() event.

As mentioned earlier, it returns an integer value, and we can see what those possibilities are by scrolling down.

Finally, scrolling to the bottom, we see a sample snippet of code showing how the function or event is used. This can be helpful to see it in context.

Running the EA

Now we will run the EA in MT5. Before running, open the [Experts] tab.

Here in the Navigator you will see the Expert Advisors listed. Here is RAPID EA v. 01.

When I double click, the initialization popup box displays. Here we see the name of the EA and the version number.

The copyright information and author name is actually a link to my website.

Finally, I have the description of the EA.

I won't worry about the check boxes for now.

Note in the upper right hand corner that the EA has been attached to the chart. Only one EA can be attached to any given chart.

At this point I press the OK button.

Immediately two lines are printed to the [Experts] tab.

We see that the point size for GBPUSD is 0.00001. This is to be expected.

Now right-click anywhere in the [Experts] tab, then choose "open folder," and open the log file for MT5 that was created.

I have set up my favorite editor, VIM, with color coded syntax to show me certain important features at a glance. You will see that all TIMES are dark green, and all numbers in brackets are dark blue. Additionally, any errors would show up in red.

Wrapping up

(read from slide)

Final Notes (not in video)

- Because I never have two trades on the same symbol open simultaneously, the check that ensures Netting Mode (non-Hedging Mode) is unnecessary. It was a leftover from a previous piece of code.
- If you have any suggestions for improvement to this script or this video series, do let me know.

Programming is a bit of an art form, and each programmer will do it their own way.