

MQL4 COURSE

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SYNTAX

I hope you enjoyed the “Welcome” lesson which tried to answer the very basic questions; **what** MQL4 is, **why** MQL4 and **where** (to write) MQL4?

Always the biggest and the most important question(s) are **how**, and the entire coming lessons are the answer.

Now, I want you to empty your mind from any confusion and read carefully the next few concepts.

We are talking today about the SYNTAX rules of MQL4.

And as I told you before, *If you are programming in C (or its superset C++) then you know a lot of MQL4 before even I start my lessons.*

That's because the syntax of MQL4 is very like of the syntax of C.

The dictionary means of the word SYNTAX of a programming language is:

“The set of allowed reserved words and their parameters and the correct word order in the expression is called the syntax of language”. “Wikipedia”

So, when we are studying the syntax of the language we are studying its grammar and writing rules which consist of:

- Format
- Comments
- Identifiers
- Reserved words

Let's slice the cake.

1- Format:

When you write your code, you can freely use any set of spaces, tabs and empty lines you want to separate your code and your line of code to make them readable and eyes pleasing.

For example all of these lines are valid in MQL4:

```
double MacdCurrent, MacdPrevious, SignalCurrent;
```

```
double  
MacdCurrent,  
MacdPrevious,  
SignalCurrent;
```

```
double           MacdCurrent,           MacdPrevious,           SignalCurrent;
```

But, as you see, the first line is more readable and easy to understand.

And as everything in the world there are exceptions to the rule:

1- You can't use new line in the "Controlling compilation"

You will know more about "Controlling compilation" in next lesson but just remember this is an exception.

For example the next line of code is invalid and the MQL4 compiler will complain:

```
#property  
copyright "Copyright © 2004, MetaQuotes Software Corp."
```

This is the valid "Controlling compilation":

```
#property copyright "Copyright © 2004, MetaQuotes Software Corp."
```

2- You can't use new line or space in the middle of Constant values, Identifiers or Keywords.

For example this line is valid:

```
extern int MA_Period=13;
```

“extren” and “int” here are Keywords , “MA_Period” is an Identifier and “13” is a Constant value..

You will know more in the next lessons.

For example the next lines are invalids:

```
extern int MA_Period=1
3;
```

```
extern int MA_Period=1    3;
```

Notice the tab between 1 and 3.

```
ex
tern int MA_Period=13;
```

2- Comments:

To make the programming world easier, any programming language has its style of writing comments.

You use Comments to write lines in your code which the compiler will ignore then but it clears your code and makes it understandable.

Assume that you write a program in the summer and in the winter you want to read it.

Without comments -even you are the code's creator- you can't understand all these puzzled lines.

MQL4 (& C/C++) uses two kinds of comments styles:

1- Single line comments

The Single line comment starts with “//” and ends with the new line.

For example:

```
//This is a comment
extern int MA_Period=13;
```

```
extern int MA_Period=13; //This is another comment
```

2- Multi-line comments

The multi-line comment start with “/*” and ends with “*/”.
And you can comment more than line or more by putting “/*” at the start of the first line, and “*/” at the end of the last line.
For example:

```
/* this  
is  
multi  
line  
comment*/
```

You can also nest single line comment inside multi lines comment like that:

```
/* this  
is  
multi //another comment nested here.  
line  
comment*/
```

This is a valid comment too:

```
extern int /*HELLO! I'm a comment*/ MA_Period=13;
```

But this is invalid comment:

```
extern int //test MA_Period=13;
```

3- Identifiers:

An identifier is the name you choose to your variables, constants and functions.

For example MA_Period here is an identifier:

```
extern int MA_Period=13;
```

There are few rules and restrictions for choosing those names:

- 1- The length of the Identifier must not exceed **31** characters.
- 2- The Identifier must begin with a letter (capital or small) or the underlining symbol .
So, it can't be started with a number or another symbol except the underlining symbol.
- 3- You can't use any reserved words as an Identifier.
You will see the list of the reserved words too soon.
- 4- The identifiers' names are case sensitive.
So, **MA_PERIOD** not the same as **ma_period** or **MA_Period**

Let's take some examples:

Name1	Valid
_Name1	Valid
1Name	Invalid (don't start with number)
~Name1	Invalid (you can only use underline symbol)
N~ame1	Invalid (you can only use underline symbol)
i_love_my_country_and_my_country_loves_all_the_world	Invalid (you can't exceed the 31 characters length)
Color	Valid
color	Invalid (you can't use reversed word, and color is one of them)

4- Reserved words:

There are "words" which the language uses them for specific actions.

So, they are reserved to the language usage and you can't use them as an identifier name or for any other purpose.

This is the list of the reserved words (*from the MQL4 guide*):

Data types	Memory classes	Operators	Other
bool	extern	break	false
color	static	case	true
datetime		continue	
double		default	

int		else	
string		for	
void		if	
		return	
		switch	
		while	

For example the next lines of code are invalid:

```
extern int datetime =13;  
int extern =20;  
double continue = 0;
```

I hope you enjoyed the lesson.
The next lesson will be about the “**Data Types**”.
So, Be Ready, the real hard work is coming!

I welcome very much the questions and the suggestions.

See you
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