

BullCharts charting software

BullScript — worked example
Simple custom MA indicator ribbon

Overview

In this worked example we will show step-by-step how to create a ribbon indicator related to the Moving Average Cross-over chart indicator. An example of this is shown in Figure 1 below.



Figure 1: Showing the new ribbon indicator

Note the following features of this price chart:

1. Daily candlestick price chart of the All Ordinaries (XAO) index.
2. The two curved lines cross the chart are Exponential Moving Average (EMA) — one is a 7-period, and the other is a 12-period.
3. The two EMA curves cross each other three times across this chart, indicated with the dashed, vertical red lines.
4. When the 7-period EMA is above the 12-period EMA, it implies the price is tending to rise (this is one way to indicate a rising trend).
5. When the 7-period EMA is below the 12-period EMA, it implies the price is tending to fall (a downtrend).
6. Across the bottom of the chart is a ribbon indicator which is shaded either green or red, with indicative text “Good 7 on 12”, or “Bad 7 on 12”.

The notes on the following pages explain the steps to use to create this ribbon indicator in BullCharts. The step-by-step process that is explained here provides good insights into the BullScript language that is inherent in the BullCharts software system.

Robert Brain

BullCharts User Group convenor

Indicator Ribbons — introduction

The following information is provided In the BullScript help:-

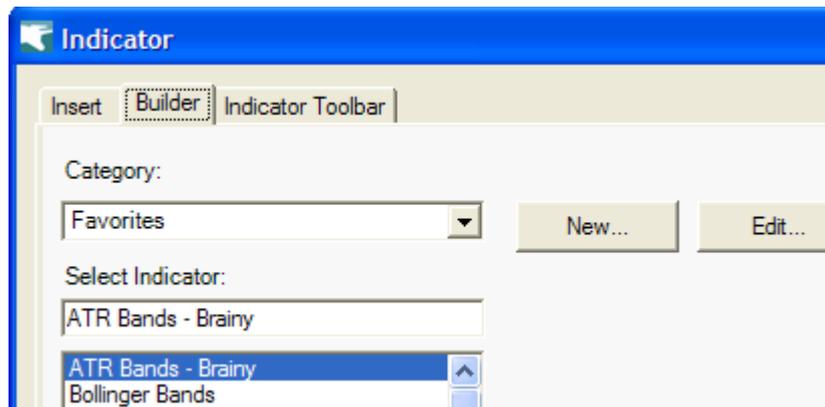
A ribbon is displayed as a thick coloured bar at the bottom of the chart. The ribbon show different colours, or modes, to represent the current condition of the stock being analysed.

To create a ribbon, first use the [TARGET=Ribbon] ATTRIBUTE. Then define several calculations that evaluate to true or false, similar to the way MARKERS work. Each result is evaluated in turn from top to bottom. The first calculation that is true is selected as the ribbon mode for the current bar.

Typically a name, colour and FILLSTYLE ATTRIBUTE is given for each ribbon mode, and is defined before the calculation they relate to. A final colour can also be specified at the end of the indicator. This will be used if no conditions are matched.

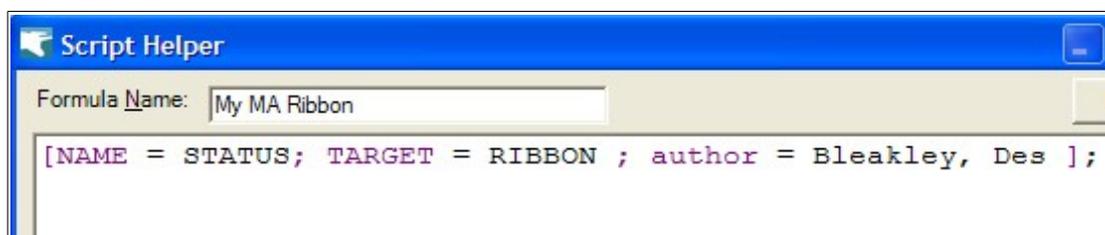
STEP 1 — Create a new indicator

In BullCharts, use the menu option: **Insert > Indicator**, and click on the “Builder” tab, then click on the “New...” button.



STEP 2 — Enter basic information

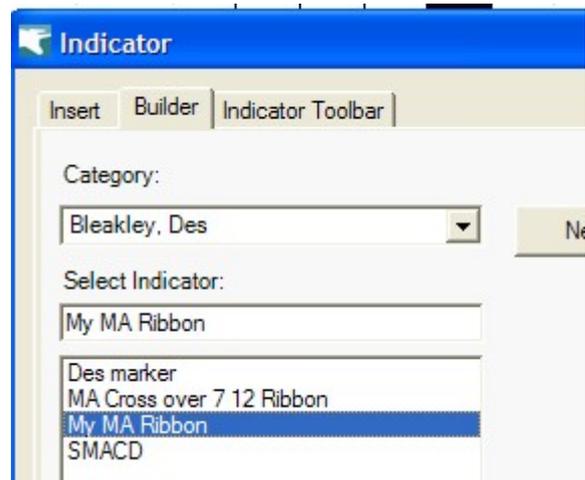
- Firstly, type a useful name into the “Formula Name” box, such as My MA Ribbon.
- Then type some useful defining text into the large blank area.



In this example we have entered the following:

- NAME = STATUS ;** — Just some useful text.
- TARGET = RIBBON ;** — This specifies that the plot that we are going to specify is to be an indicator ribbon.

- **author = Bleakley, Des** — This text specifies the “author” of this indicator. The text here will result in the indicator appearing in the list of indicators in the “Insert Indicator” dialogue box, as shown in the following graphic.



STEP 3 — About the Moving Average indicator

We are going to compare the values for two Moving Averages (MA) to see if the 7-period MA is above or below the 12-period MA. The BullCharts FORMULA for the Moving Average is:

MA(C,7,E)

This BullScript statement specifies:

- The MA is based on Close prices.
- It is a 7-period MA.
- The type of MA is Exponential.

STEP 4 — Compare two MAs

Enter the following BullScript statement

MA(C,7,E) > MA(C,12,E) ;

Note:

- The greater-than symbol “>” performs the comparison of the two Moving Averages.
- The semi-colon on the end of the statement is required.
- This comparison results in a value that is either “True” or “False”
That is, If the first MA specified is greater than the second one, the result is “True”.
- In BullScript, the result is actually stored internally as the number one or zero.

STEP 5 — Store the result in a VARIABLE

Revise the line we just entered by inserting some text at the start of the line as follows:

is7GT12 := MA(C,7,E) > MA(C,12,E) ;

- The initial text “is7GT12” is a VARIABLE which we are creating. In this case it is an abbreviation of the question: “is the 7-period greater than the 12-period”?
- And the special characters “:=” are the ASSIGNMENT OPERATOR, which is basically an equals sign.
- So the complete statement says:
Evaluate the expression on the right side of the equals sign, and store the answer in the VARIABLE named on the left hand side (this is just like in conventional computer programming language).

STEP 6 — Specify a colour, and some text, and background

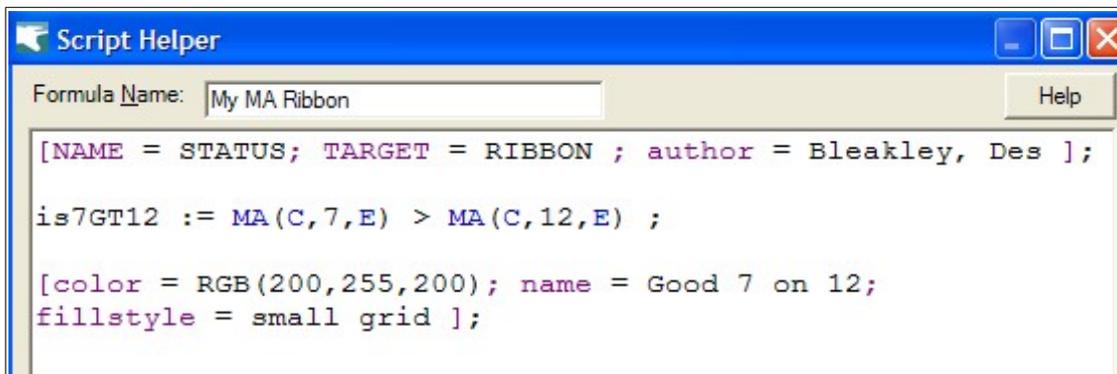
The following statement can be added:

```
[color = RGB(200,255,200); name = Good 7 on 12;  
fillstyle = small grid ];
```

Note:

- The ATTRIBUTE “color” specifies the basic colour for the ribbon. The text “RGB(200,255,200)” specifies the amount of red, green and blue to be included in the colour (this is a standard arrangement in computer systems).
- The ATTRIBUTE “name = “ specifies the text to appear on the ribbon itself.
- The ATTRIBUTE “fillstyle” specifies the type of background pattern to include.

The BullScript to date might be as in the following screen shot;



STEP 7 — Specify the plot

Now enter the following code:

```
is7GT12;
```

This is the VARIABLE described earlier (above), with a semi-colon character which now prompts this “plot” to be generated. Within the ribbon, this will indicate when this condition is “true”. We have not yet specified what to put in the ribbon when this condition is “false”. We already said it is a “ribbon”, so it appears across the bottom of the chart.

STEP 8 — Specify the alternate condition

Firstly, specify the plot characteristics for the alternate condition:

```
[color = RGB(255,200,160); name = Bad 7 on 12;  
fillstyle = small grid];
```

Compare this to the similar statement above, noting some subtle differences.

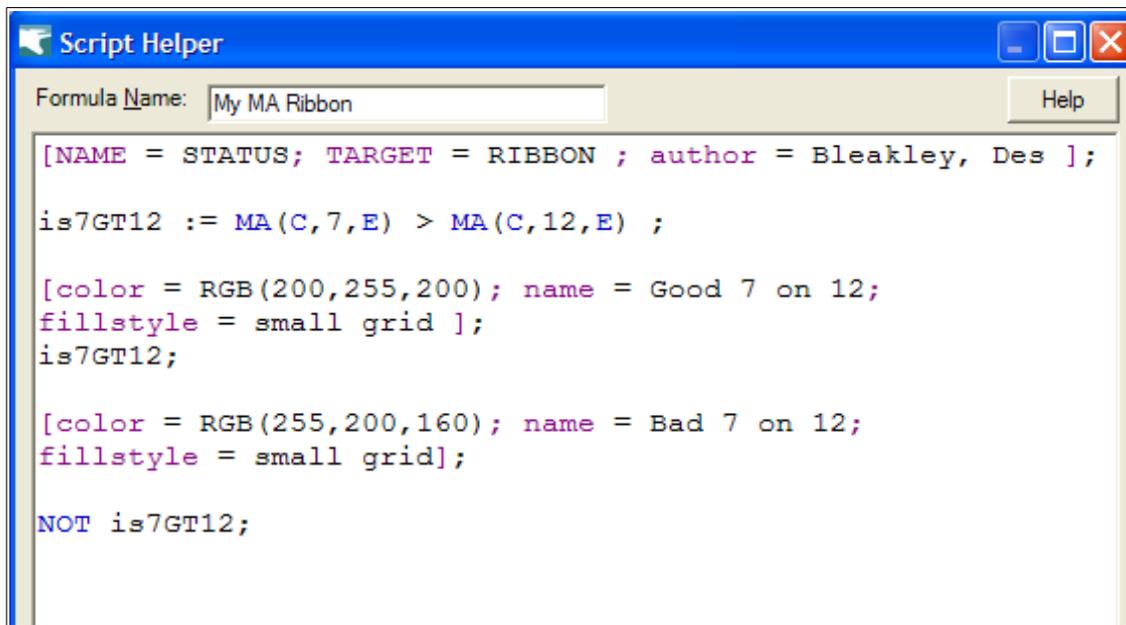
Now enter the statement to plot the false condition:

```
NOT is7GT12;
```

This is very similar to the statement above for the “true” condition, except that the word “NOT” appears in front of it. Don’t forget that the VARIABLE `is7GT12`; is a LOGICAL variable and has the value of either “TRUE” or “FALSE”. By using the word “NOT” in front of this, it will add information to the ribbon for the alternate condition — ie. when the 7-period MA is NOT greater than the 12-period MA.

STEP 9 — The final BullScript code

The final script might now look like that in the figure below.

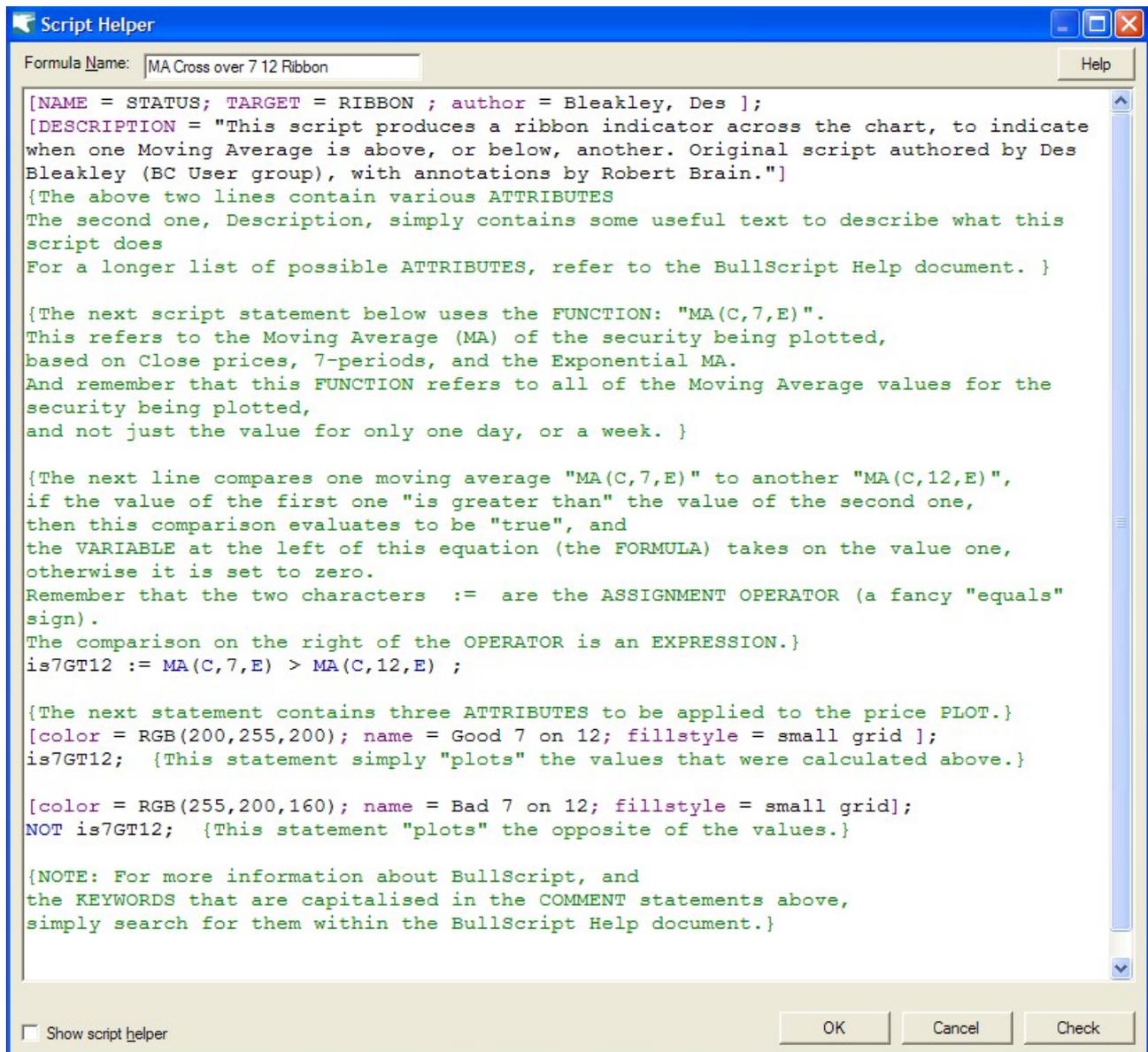


The image shows a window titled "Script Helper" with a blue title bar. Inside the window, there is a text input field labeled "Formula Name:" containing the text "My MA Ribbon". To the right of the input field is a "Help" button. Below the input field is a large text area containing the following BullScript code:

```
[NAME = STATUS; TARGET = RIBBON ; author = Bleakley, Des ];  
  
is7GT12 := MA(C,7,E) > MA(C,12,E) ;  
  
[color = RGB(200,255,200); name = Good 7 on 12;  
fillstyle = small grid ];  
is7GT12;  
  
[color = RGB(255,200,160); name = Bad 7 on 12;  
fillstyle = small grid];  
  
NOT is7GT12;
```

FINAL RESULT

To help yourself and others to interpret the BullScript at a later time, you could insert some Comment statements and your BullScript might end up like the following screen shot.



The screenshot shows a 'Script Helper' dialog box with a title bar containing a minimize, maximize, and close button. The 'Formula Name' field is set to 'MA Cross over 7 12 Ribbon' and there is a 'Help' button. The main text area contains the following BullScript code with explanatory comments:

```
[NAME = STATUS; TARGET = RIBBON ; author = Bleakley, Des ];
[DESCRIPTION = "This script produces a ribbon indicator across the chart, to indicate
when one Moving Average is above, or below, another. Original script authored by Des
Bleakley (BC User group), with annotations by Robert Brain." ]
{The above two lines contain various ATTRIBUTES
The second one, Description, simply contains some useful text to describe what this
script does
For a longer list of possible ATTRIBUTES, refer to the BullScript Help document. }

{The next script statement below uses the FUNCTION: "MA(C,7,E)".
This refers to the Moving Average (MA) of the security being plotted,
based on Close prices, 7-periods, and the Exponential MA.
And remember that this FUNCTION refers to all of the Moving Average values for the
security being plotted,
and not just the value for only one day, or a week. }

{The next line compares one moving average "MA(C,7,E)" to another "MA(C,12,E)",
if the value of the first one "is greater than" the value of the second one,
then this comparison evaluates to be "true", and
the VARIABLE at the left of this equation (the FORMULA) takes on the value one,
otherwise it is set to zero.
Remember that the two characters := are the ASSIGNMENT OPERATOR (a fancy "equals"
sign).
The comparison on the right of the OPERATOR is an EXPRESSION.}
is7GT12 := MA(C,7,E) > MA(C,12,E) ;

{The next statement contains three ATTRIBUTES to be applied to the price PLOT.}
[color = RGB(200,255,200); name = Good 7 on 12; fillstyle = small grid ];
is7GT12; {This statement simply "plots" the values that were calculated above.}

[color = RGB(255,200,160); name = Bad 7 on 12; fillstyle = small grid];
NOT is7GT12; {This statement "plots" the opposite of the values.}

{NOTE: For more information about BullScript, and
the KEYWORDS that are capitalised in the COMMENT statements above,
simply search for them within the BullScript Help document.}
```

At the bottom left, there is a checkbox labeled 'Show script helper'. At the bottom right, there are three buttons: 'OK', 'Cancel', and 'Check'.

APPENDIX

The BullScript

Following is the BullScript that is used for this particular ribbon. Refer to the explanatory comments below, referring to each "Line No."

The list of BullScript statements

Line No.	script statements
1	<code>[NAME = STATUS; TARGET = RIBBON ; author = Bleakley, Des];</code>
2	<code>is7GT12 := MA(C,7,E) > MA(C,12,E) ;</code>
3	<code>{The next statement contains three ATTRIBUTES to be applied to the price PLOT.}</code>
4	<code>[color = RGB(200,255,200); name = Good 7 on 12; fillstyle = small grid];</code>
5	<code>is7GT12;</code>
6	<code>{This statement "plots" the values that were calculated above.}</code>
7	<code>[color = RGB(255,200,160); name = Bad 7 on 12; fillstyle = small grid];</code>
8	<code>NOT is7GT12;</code>
9	<code>{This statement "plots" the opposite of the values.}</code>

1. The line number 1 is simply a statement containing three ATTRIBUTES (more detail later).
2. Line 2 is very important. It uses the FUNCTION: "MA(C,7,E)". This refers to the Moving Average (MA) of the security being plotted, based on Close prices, 7-periods, and the Exponential MA. And remember that this FUNCTION refers to all of the Moving Average values for the security being plotted, and not just the value for only one day, or a week. It compares one moving average "MA(C,7,E)" to another "MA(C,12,E)", if the value of the first one "is greater than" the value of the second one, then this comparison evaluates to be "true", and the VARIABLE at the left of this equation (the FORMULA) takes on the value one, otherwise it is set to zero. Remember that the two characters := are the ASSIGNMENT OPERATOR (a fancy "equals" sign). The comparison on the right of the OPERATOR is an EXPRESSION.
3. {Anything inside curly braces is a COMMENT.}
4. Line 4 specifies some ATTRIBUTES for the plot which is about to be generated.
5. This statement simply "plots" the values that were calculated using the FORMULA above.
6. { (another comment) }
7. Line 7 specifies some ATTRIBUTES for the second part of the plot which is about to be generated.
8. This statement specifies what is to be plotted when the values are zero.