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Subject: Re: Most significant digit and formatting floating point output

Posted by [Craig Markwardt](#) on Tue, 07 Aug 2012 15:37:31 GMT

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On Tuesday, August 7, 2012 9:33:13 AM UTC-4, Helder wrote:

> Dear all,

>

> well, I'm tangled up with something quite stupid, but I don't want to reinvent the wheel (for the 10th time today...).

>

> Here are two versions of the same question:

>

> 1) Short version: given a number such as 0.003456789 how do I get the most significant digit position? I need this number to produce formatted output that would convert the number to simply 0.003. In general I can figure this out with some IFs and stuff like that, but I'm hoping there is a more "elegant" way for this.

>

>

>

> 2) Long version: I'm analyzing some images and I get results with errors. These numbers are floating point and I would like to format the output so that it looks something like this: 'My results are (0.123 +/- 0.003) units' and the source data is:

>

> Result = 0.123456789

>

> Error = 0.003456789

>

> The point is that I need to find the first non-zero element in Error. Then I would use this number in the FORMAT parameter like this: MyFormat =

'(f0'+STRTRIM(FirstNonZeroElement+2,2)+'.'+STRTRIM(FirstNonZeroElement,2)+'')

>

> and use "MyFormat" as formatting for the string conversion of both.

>

> (in the above example FirstNonZeroElement should be 3 and MyFormat would be '(f05.3)').

ALOG10(ABS(X)) should give you this information. But to be general, you need to handle ABS(X) LT 1 and ABS(X) GT 1 separately. And also, the X LT 0 case demands one extra digit for the '-' symbol.

Some extra rounding logic may be needed.

Craig

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