

# Re: Bug in Delphi SimpleRoundTo function?

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*Source:*

<http://coding.derkeiler.com/Archive/Delphi/borland.public.delphi.non-technical/2007-08/msg00368.html>

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  - *Date:* Mon, 6 Aug 2007 16:49 +0100 (BST)
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In article <46b37e47\$1@xxxxxxxxxxxxxxxxxxxxxxxxxx>, herb-sci1\_AT\_sbcglobal.net (John Herbster) wrote:

A good programmer should know that there is no such thing as "simple rounding"

I disagree.

Ask any mathematician and you'll get the same answer: 0.5 rounds up. Check it on your calculator too.

Mathematically, this is:

$0 \leq x < 0.5 \Rightarrow 0$  (or  $[0, 0.5[ \Rightarrow 0$ )

$0.5 \leq x < 1.0 \Rightarrow 1$  (or  $[0.5, 1.0[ \Rightarrow 1$ )

The only area of debate is whether negative values round towards or away from zero.

Banker's Rounding is a convenience to avoid either party (buyer or seller) gaining a financial advantage from fractional values.

That aside, when ordinary programmers get caught in the trap of using floating \*binary\* point numbers, to represent (fixed or floating) decimal fraction numbers and have to do any kind of rounding, then they stumble all over themselves.

This isn't a trap that can always be avoided. You may be given a database populated with floating point values that are not 100% accurate. Any reasonable programmer should be able to work around this without recourse to scaled integer values or BCD representation, armed only with the knowledge of the required precision and values that conform to that precision.

## Re: Bug in Delphi SimpleRoundTo function?

Of course, using scaled integers or BCD does make it easier, but don't yourself fall into the trap of believing that this is the only solution.

I am really disappointed that I am still reading such ill informed discussion of this problem

Not ill-informed at all – and rather superior of you to suggest so. My original post (if you refer back) was noting a failure of SimpleRoundTo() to conform to its specification. The fact that it is being used to handle currency is neither a mistake nor necessarily bad practice. Your library routines may well make life easier for some, and indeed maybe for me too. However, there are times and circumstances which do make and will continue to make situations such as mine unavoidable. Read Kurt Godel's hypothesis for a better understanding of why this is so.

Trevor

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