Subject: Re: bizarre number transformation
Posted by James Kuyper on Thu, 25 Jul 2002 19:58:59 GMT
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Paul van Delst wrote:
>
> Michael Ganzer wrote:
>>
>> As plenty postings already were dealing about how to use a double precision
>> number i wanted to ask u something different...
>>
>> Whatever you do with 443496.984 in multiplication or something else.....
>> does it really matter at that number size if there is more than one digit
>> exact after the digit separator???
>
> My goodness. 443496.984 is not a "big" number. What if you have to add it to 0.004657?

The point is, that it's pretty rare to need that many significant
digits. There aren't many real-world numbers that can be measured to
within one part in a billion. Precision needs like that can come up in
intermediate steps of a calculation, (for instance, if you need to
calculate "sin(theta)-theta" for small values of theta), but that's
merely an indication that the calculation is badly organised (for small
theta, you can get more accurate results with the equivalent series
expansion: "-(theta^3)/6+(theta^5)/120-...")

However, having written a lot of such code, I've found that loss of
precision due to roundoff can sneak up on you far too easily. It's
almost always a lot faster (considering CPU time + developer time) to
use double precision. I save such tricks for the somewhat rarer cases
where double precision is inadequate.