

## Re: Numbers and calculations and strange things

**Source:**

<http://www.tech-archive.net/Archive/PocketPC/microsoft.public.pocketpc.developer/2004-11/1443.html>

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Manuel Meitinger schrieb:

> *Have you checked if `_controlfp(0,0)` returns the same value?*

> *If not, the floating-point handling is different.*

If this is the reason for different results, he uses an instable algorithm. This means that the output data of some part of his CALCULATE function has a big difference while the input data has small one. This means that his algorithm is bad and that he should not use it for his purposes.

Claus

>

> *"Mateusz Łoskot" <check@my.signature.net> schrieb im Newsbeitrag*

> *news:JJuqd.54170\$ha.48890@news.chello.at...*

>

>>*Hi,*

>>

>>*I have a real problem and I'm seriously confused having no idea what is*

>>*going on. I believe someone is able to explain me that.*

>>

>>*I'm doing some spherical trigonometry calculations in my application and I*

>>*use one function, let say it is called CALCULATE, which implements some*

>>*algorithm and returns double number as a result. For better understanding*

>>*of my later explanations I can say that the CALCULATE computes area in*

>>*square/area units (m2, km2, spherical degrees, etc.).*

>>

>>*I test this function on both eVC++ 4.0 and my iPAQ 2210 and MS VC++ 2003*

>>*on my Windows 2000 (Intel PIII).*

>>

>>*The problem is that the CALCULATE function gives me very different results*

>>*on both machines, for the same input data !!!*

>>

>>*Here are sample results which I get from my CALCULATE:*

>>

>>*First, I get the result in sperical degrees:*

>>

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>>VC++ 2003:  $3.9536637543773154e-009$   
>>eVC++ 4.0:  $2.8474172550380e-009$   
>>  
>>NOTE: Here you can see how different are those results (?)  
>>  
>>Second, I convert it (spherical degrees) to more readable units:  
>>  
>>1) multiply it by constant 707632.4 to get square kilometers (km<sup>2</sup>):  
>>  
>>VC++ 2003: 0.0027977405713030304  
>>eVC++ 4.0: 0.0020149247059840  
>>  
>>2) multiply it by constant 710010963049.73752482656869140624 to get square  
>>meters (m<sup>2</sup>):  
>>  
>>VC++ 2003: 2807.1446098202787  
>>eVC++ 4.0: 2021.6974674540  
>>  
>>So, you can see how big differences I get in every case.  
>>  
>>I'm sure for 99.9% that my CALCULATE function is working well, I'm testing  
>>it for 3 days and on Windows 2000 (on desktop) I get very stable results,  
>>I even can say I get real results (i.e. real area of my car park ;-)  
>>  
>>I debuged it step by step on both: evc++ and vc++ simultaneously and I  
>>checked every number and results of my CALCULATE internalls.  
>>  
>>I can't believe there are such big differences between iPAQ's CPU  
>>implementation and PIII implementation  
>>to give me so different results of my computations.  
>>  
>>Any explanation is welcome.  
>>  
>>--  
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