Subject: Re: machine precision
Posted by jeffnettles4870 on Tue, 19 May 2009 15:16:34 GMT
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On May 18, 9:44 pm, James Kuyper <jameskuy...@verizon.net> wrote:
> Wox wrote:
>> On Mon, 18 May 2009 13:33:48 GMT, James Kuyper
>> <jameskuy...@verizon.net> wrote:
>
>>> At a minimum, you should use pres*(f1^2+f2^2)^0.5 instead of pres for
>>> the following comparison. eps gives you the relative precision, not the
>>> absolute precision; it needs to be scaled by the numbers you're working
>>> with.
>
>> Now this I didn't realize! So it's the precision of the mantisse or
>> something?
>
> Yes. If you don't understand why, I recommend re-reading the "The Sky is
> Falling!" website that David referred you to, and in particular the
> paper it refers to titled "What Every Computer Scientist Should Know
> about Floating Point Arithmetic".

I think I have the beginnings of an understanding of this problem after having seen the topic pop up so much here in the newsgroup and after having read David's article several times. But now i'm wondering how other languages handle this situation? I've tried two other languages now, perl and VB, and they both seem to not give the "correct-but-not-expected" results that trip so many people up. For example, this snippet of perl code:

```
$i = int(4.70*100);
print "$i\n";
```

prints 470 whereas the equivalent IDL code: print, fix(4.70*100) prints 469.

Does anyone have any idea how other languages deal with the "sky is falling" problem?

Jeff