Subject: Re: x*x versus x^2
Posted by Conor on Wed, 09 Jul 2008 17:10:49 GMT

View Forum Message <> Reply to Message

On Jul 9, 12:57 pm, Bruce Bowler <bbow...@bigelow.org> wrote:
> On Wed, 09 Jul 2008 09:43:27 -0700, Conor wrote:
>> On Jul 9, 12:32 pm, Conor <cmanc...@gmail.com> wrote:
>>> So I've been looking at execution time for various algorithms, and I
>>> found this interesting result:
>
>>> bigarr = fltarr(1000,1000)
>
>>> t1 = systime(/seconds)
>>> t = bigarr^2.0
>>> t2 = systime(/seconds)
>>> t = bigarr*bigarr
>>> t3 = systime(/seconds)
>
>>> print,t2-t1
>>> print,t3-t2
>
>>> IDL prints:
>
>>>   0.024163008
>>>   0.010262012
>
>>> Apparently multiplying an array by itself is twice as fast as using the
>>> carat operator! Anyone know why this is? Is it a memory issue or
>>> something?
>
>> This also holds true for array's smaller than the multi-threading
>> minimum size, so it isn't because multi-threading is being used in one
>> case but not the other...
>
> Digging into the deep dark recesses of my brain...
>
> exponentiation with a real exponent generally uses the log function to do
> it's thing. *some* language implementations are smart enough that if the
> exponent is an integer, they decompose the exponentiation into
> multiplication.
>
> It might be worth trying your experiment with t=bigarr^2 and see how the
> results change.
>
> Bruce

Interesting... I tried your suggestion and got this result:

```
       0.018048048
       0.010533094
```

So it is still slower, but the difference is smaller. A calculation like this is rarely the bottleneck for speed in a program, so I probably won't worry about it too much, but it is an interesting fact to be aware of...