Subject: Re: Wow. exp() difficulties...
Posted by Amara Graps on Fri, 01 Aug 1997 07:00:00 GMT
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Thanks for your comments. I realize that my essay may have been a
little bit dated since I wrote it a few years ago.

William Clodius wrote:
>
> I have a few comments on Amara Graps post, mostly related to efficiency:
>
> Amara Graps wrote:
>>
>> <snip>
>>
>> The primary advantages of using integer and fixed point numbers are that
>> they take up less storage disk space and calculations with these numbers
>> are fast.
>
> Because of their simplicity it is in principle possible to make integer
> and fixed point number arithmetic faster than floating point arithmetic.
> However, in practice nowadays floating point arithmetic is as fast as
> integer arithmetic for addition and subtraction and often faster than
> integer arithmetic for multiplication and division.
[...]
>> Double Precision Floating Numbers
>> [...]
>> determine the largest and smallest *negative* number.) Even though the
>> speed of performing double precision computations is twice as slow as
>> performing single precision computations, the computation speed on
>> today's computers is still fast.
>
> In recent years this speed ratio is no longer valid. Some floating point
> processing units perform all their calculations in double or extended
> precision. As a result single precision can have the additional overhead
> of conversion to and from the double precision format. Whether single or
> double precision is more efficient in such cases depends on the
> magnitude of this overhead vs. increased cache misses due to the larger
> memory requirements for double.

Yes.. It's true. I discovered this on my Macintosh 5 years ago
running my thesis simulations for my variables in extended precision.
(I wrote my simulations in Pascal) It was faster to run it that way,
than change the variables to double precision, or even, single
precision.
I didn't know if the concept was true for other platforms though.
Thanks for the update.

Amara

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"Never fight an inanimate object." - P. J. O'Rourke
