
Subject: IDL random number generator
Posted by [krijger](#) on Fri, 09 May 2003 11:47:02 GMT
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Hi,
I know that randomn is pseudo-random, how many numbers can you generate before the non-randomness kicks in?

Thijs Krijger

Subject: Re: IDL random number generator
Posted by [jeyadev](#) on Tue, 13 May 2003 18:54:20 GMT
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In article <tandp-1205031112540001@dialup-63.211.240.1.dial1.denver1.level3.net>, Mike <tandp@mediaone.net> wrote:

>
> A faulty memory led me to describe teh seed as needing to be the largets
> prime number available on the given system. Actually it is the modulus
> value that should be chosen this way. The choice of seed, multiplier and
> modulus numbers is discussed a bit in Numerical Recipes which refers to
> Knuth's book. If you need reliable details readup on it there. Don;t trust

^^^^^^^^^^

> the internet.
^^^^^^^^^^

Now, *that* is logical conundrum!

What is the poor reader supposed to do?!

--

Surendar Jeyadev jeyadev@wrc.xerox.bounceback.com

Remove 'bounceback' for email address

Subject: Re: IDL random number generator
Posted by [David Fanning](#) on Wed, 14 May 2003 23:28:57 GMT
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Folks,

You guys might want to check out this Quantum Random Number Generator. This one takes a LONG time to repeat! :-)

<http://www.idquantique.com/qrng.html>

Cheers,

David

--

David W. Fanning, Ph.D.

Fanning Software Consulting, Inc.

Phone: 970-221-0438, E-mail: david@dfanning.com

Coyote's Guide to IDL Programming: <http://www.dfanning.com/>

Toll-Free IDL Book Orders: 1-888-461-0155

Subject: Re: IDL random number generator

Posted by [rmoss4](#) on Thu, 15 May 2003 15:19:54 GMT

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That is pretty cool. However, it would not appear to be very useful if you need the ability to replicate your results (e.g. in cases where you would use a known seed value to reproduce a pseudo-random series of numbers). Nevertheless, it's probably as close as one can get to "true" randomness. Ain't physics great?

--

Robert M. Moss, PhD

rmoss4@houston.rr.com

281-856-2017

David Fanning wrote:

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> Cheers,

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> David

>

Subject: Re: IDL random number generator

Posted by [condor](#) on Mon, 19 May 2003 23:51:10 GMT

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David Fanning <david@dfanning.com> wrote in message
news:<MPG.192c7f24abbae652989b96@news.frii.com>...

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>
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>
> <http://www.idquantique.com/qrng.html>
>
> Cheers,
>
> David

I would mistrust this for the following reasons.

The website states:

> Being deterministic devices, computers are not capable of producing random
> number generators.

That statement is false: any odd soundcard has a noise-generator
(essentially a glorified resistor with a big amplifier attached to it)
that is capable of producing perfectly fine thermal random noise. I've
used that for creating random numbers since back in the days of the
Atari-800 (OK, so I'm dating myself here).

Even if a piece of external hardware was desirable for this process it
could be cobbled together for \$5 from a couple resistors, an opAmp for
amplification and an RC high-pass filter (to get rid of slow drifting
in the opAmp). Potentially another opAmp driven open-loop as a
Schmitt-trigger. Gives you clock-free(!) bit-noise.

Anybody who tries to sell a quantum-ANYTHING to make noise(!!) is
direputable from the word 'go' in my eyes.

Subject: Re: IDL random number generator
Posted by [rmoss4](#) on Tue, 20 May 2003 04:18:07 GMT
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Big Bird wrote:

> David Fanning <david@dfanning.com> wrote in message
news:<MPG.192c7f24abbae652989b96@news.frii.com>...
>
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Thermal random noise is itself quantum in nature. Though not stated very precisely, I think the web site is referring to computer software (as opposed to hardware) as being deterministic and therefore non-random. I agree with you though that there are less expensive ways of making noise :)

--
Robert M. Moss, PhD

Subject: Re: IDL random number generator
Posted by [James Kuyper](#) on Tue, 20 May 2003 14:30:43 GMT
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Big Bird wrote:
>
> David Fanning <david@dfanning.com> wrote in message

news:<MPG.192c7f24abbae652989b96@news.frii.com>...

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> used that for creating random numbers since back in the days of the

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It's an exaggeration, rather than being false. Their real point was that the standard random number generators are not truly random, and can't be truly random as long as they are entirely based in software.

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> disreputable from the word 'go' in my eyes.

Thermal noise is not as fundamentally random as the quantum fluctuations that determine radioactive decay. Among other things, your circuit will pick up and therefore be influenced by EM radiation, which is not random, and since it's thermal noise you're looking at, it will be influenced by the temperature. I'll admit, it's a subtle difference, but if you were doing serious scientific work using those random numbers, it's one you should worry about when designing the program.

Subject: Re: IDL random number generator
Posted by [tandp](#) on Wed, 21 May 2003 02:54:23 GMT
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- > influenced by the temperature. I'll admit, it's a subtle difference, but
- > if you were doing serious scientific work using those random numbers,
- > it's one you should worry about when designing the program.

For scientific work a pseudorandom number generator should be sufficient as long as it is well designed, i.e. has cycle longer than the number of values it will be required to generate and generates data that has a prescribed mean (usually zero). It should conform to the probability distribution it is designed for. A random number generator of values from a uniform distribution should be verifiable as generating data with a zero mean and have a frequency spectrum indistinguishable from white noise.
