Subject: Re: Random Numbers
Posted by Yngvar Larsen on Thu, 25 Oct 2012 07:14:15 GMT
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On Wednesday, 24 October 2012 23:38:34 UTC+2, John O'Neill wrote:
> Hello Everyone,
>
> I am trying to create a set of random numbers using an Inverse Gaussian Distribution (Wald distribution) but randomu doesn't seem able to do this. Is there anything more general then randomu, or something where I can define what function I want to use to create random numbers?

Google and Wikipedia are your friends.

http://en.wikipedia.org/wiki/Inverse_Gaussian_distribution#G
enerating_random_variates_from_an_inverse-Gaussian_distribut ion

```
IDL> N = 100
IDL> mu = 1d0 & lambda = 1d0
IDL> nu = randomn(seed, N)
IDL> z = randomu(seed, N)
IDL> igvariates = dblarr(N)
IDL> y = nu^2
IDL> x = mu + mu^2*y/(2*lambda) - mu/2/lambda*sqrt(4*mu*lambda*y + mu^2*y^2)
IDL> ind = where(z le mu/(mu+x), complement=cind)
IDL> igvariates[ind] = x[ind]
IDL> igvariates[cind] = mu^2/x[cind]
```

Include checking for empty index arrays IND and/or CIND if you use IDL version < 8.0.

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Yngvar