

---

Subject: Re: Help needed!!

Posted by [Gray](#) on Fri, 16 Apr 2010 17:47:55 GMT

[View Forum Message](#) <> [Reply to Message](#)

---

On Apr 16, 12:40 pm, bala murugan <bala2...@gmail.com> wrote:

> On Apr 16, 10:33 am, pp <pp.pente...@gmail.com> wrote:

>

>

>

>

>

>> On Apr 16, 1:18 pm, bala murugan <bala2...@gmail.com> wrote:

>

>>> My aim is to do the following,

>

>>> To write an IDL routine that takes as input the mean of a Poisson  
>>> distribution (fLambda = a floating point number >= 0.0) and a number  
>>> of realizations (N), and generates N samples from the Poisson  
>>> distribution with mean fLambda. The output samples should be provided  
>>> as a vector (list) of integers (each >= 0). I will also want to plot  
>>> a histogram of the samples (IDL probably has a built-in histogramming  
>>> routine).

>

>>> My subroutine/program will look something like this...

>

>>> piSamples = PoissonDist(fLambda, N)

>>>     piSamples = vector of N integer samples returned by the routine

>>>     fLambda = mean of the Poisson distribution

>>>     N = number of samples to generate

>

>>> This routine will need to loop n = 1..N Each time through the loop,  
>>> it will need to call RANDOMU to get a random number between 0.0 and  
>>> 1.0. It will then need to call IMSL\_POISSONCDF (probably repeatedly)  
>>> to determine which integer in the Poisson distribution corresponds to  
>>> the random number gotten from RANDOMU. This integer is then placed in  
>>> the output vector, etc.

>

>>> I am not using IMSL\_POISSONCDF. Rather I am calculating the poisson  
>>> probability myself.

>

>>> Can you please help me with this?

>

>> Better now, but you still did not say what the problem is. One problem  
>> that is obvious is the line

>

>> if (x EQ r) THEN a[i]=j

>

>> since neither a or i exist at that point. And that condition is

>> probably never going to be true.  
>  
> @pp  
>  
> Can you please go through the summary of what I want to accomplish and  
> suggest me some method to do it?

Well, one thing you should do is vectorize your code, otherwise there's no point in writing it in IDL. Take a look at <http://www.dfanning.com/documents/tips.html> and read about the horrors of FOR loops.

Your code can be written very simply, particularly since nothing is stopping your "poisson" routine from working on arrays.

Probably what you are looking for is something like this:

```
FUNCTION poissondist,fLambda,N
  RETURN, POISSON(RANDOMU(SEED,N),fLambda)
END
```

Or... if you don't need the "POISSON" routine elsewhere, then:

```
FUNCTION poissondist,fLambda,N
  r = RANDOMU(SEED,N)
  RETURN, (fLambda^r)/(exp(fLambda)*factorial(r))
END
```

---