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Subject: Re: Help needed!!

Posted by [penteado](#) on Fri, 16 Apr 2010 16:10:31 GMT

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On Apr 16, 12:49 pm, bala murugan <bala2...@gmail.com> wrote:

> I am new to IDL. This is my first program in IDL. Can somebody point  
> out the errors in my code. I have been struggling to get it right.

If you do not say what you want to do, and what the problem is, we are unlikely to guess it.

```
> FUNCTION poissondist,fLambda,N
>     r = RANDOMU(SEED,1)
>     FOR j=1,N,1 DO BEGIN
>         x=poisson(j,fLambda)
>         if (x EQ r) THEN a[i]=j
>     ENDFOR
> RETURN,a
> END
```

a is never defined, which would cause an error when you try to do a[i]=j. However, you seem to avoid this occurring with a condition that looks like may never happen (x eq r).

---

---

Subject: Re: Help needed!!

Posted by [bala murugan](#) on Fri, 16 Apr 2010 16:18:59 GMT

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---

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

> On Apr 16, 12:49 pm, bala murugan <bala2...@gmail.com> wrote:

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> a is never defined, which would cause an error when you try to do  
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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?

---

Subject: Re: Help needed!!

Posted by [Craig Markwardt](#) on Fri, 16 Apr 2010 16:23:45 GMT

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---

On Apr 16, 12:18 pm, bala murugan <bala2...@gmail.com> wrote:

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

>

>

>

>> On Apr 16, 12:49 pm, bala murugan <bala2...@gmail.com> wrote:

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```
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>>>     FOR j=1,N,1 DO BEGIN  
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>>>         if (x EQ r) THEN a[i]=j  
>>>     ENDFOR  
>>> RETURN,a  
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>  
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```
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>     N = number of samples to generate
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> the output vector, etc.

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> I am not using IMSL\_POISSONCDF. Rather I am calculating the poisson  
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>  
> Can you please help me with this?

You might also want to check out an existing and well-tested Poisson  
deviate generator in the IDL Astronomy Library, called POIDEV.

Craig

---

---

Subject: Re: Help needed!!

Posted by [penteado](#) on Fri, 16 Apr 2010 16:33:34 GMT

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---

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
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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.

---

---

Subject: Re: Help needed!!

Posted by [bala murugan](#) on Fri, 16 Apr 2010 16:39:15 GMT

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On Apr 16, 10:23 am, Craig Markwardt <craig.markwa...@gmail.com> wrote:

> On Apr 16, 12:18 pm, bala murugan <bala2...@gmail.com> wrote:

>

>

>

>

>

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

>

>>> On Apr 16, 12:49 pm, bala murugan <bala2...@gmail.com> wrote:

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>

>>>> FUNCTION poissondist,fLambda,N

>>>>     r = RANDOMU(SEED,1)

>>>>     FOR j=1,N,1 DO BEGIN

>>>>         x=poisson(j,fLambda)

>>>>         if (x EQ r) THEN a[i]=j

>>>>     ENDFOR

>>>> RETURN,a

>>>> END

>

>>> a is never defined, which would cause an error when you try to do

>>> a[i]=j. However, you seem to avoid this occurring with a condition

>>> that looks like may never happen (x eq r).

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>> My aim is to do the following,

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>> distribution (fLambda = a floating point number >= 0.0) and a number

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>> a histogram of the samples (IDL probably has a built-in histogramming

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>> This routine will need to loop n = 1..N Each time through the loop,  
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>> Can you please help me with this?  
>  
> You might also want to check out an existing and well-tested Poisson  
> deviate generator in the IDL Astronomy Library, called POIDEV.  
>  
> <http://idlastro.gsfc.nasa.gov/ftp/pro/math/poidev.pro>  
>  
> Craig

Does the poidev do the same thing as what I want to accomplish?

---

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Subject: Re: Help needed!!

Posted by [bala murugan](#) on Fri, 16 Apr 2010 16:40:15 GMT

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

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

>

>

>

>

>

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>> Can you please help me with this?  
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> 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?

---

---

Subject: Re: Help needed!!

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

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---

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:

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>>> distribution (fLambda = a floating point number >= 0.0) and a number

```

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> 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
```

---

Subject: Re: Help needed!!

Posted by [R.G.Stockwell](#) on Fri, 16 Apr 2010 17:48:41 GMT

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---

"bala murugan" <bala2305@gmail.com> wrote in message  
news:29ee4ec6-4803-44fd-aa5c-00fc0d2c9376@u21g2000yqc.google groups.com...

> Hi people,

>

> I am new to IDL. This is my first program in IDL. Can somebody point  
> out the errors in my code. I have been struggling to get it right.

>

> CODE:

>

```
> FUNCTION poissondist,fLambda,N
> r = RANDOMU(SEED,1)
> FOR j=1,N,1 DO BEGIN
```

arrays are indexed from 0... N-1

```
> x=poisson(j,fLambda)
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floating point numbers may never be exactly equal.

Use a "if abs(x-r) lt 0.0001 then" type of statement

as others have pointed out, 'a' and 'i' do not exist here.

i have no idea what you think "i" should be.

For a you will need to allocate an array inside that function, like so:

```
FUNCTION poissondist,fLambda,N
a = fltarr(N)
r = RANDOMU(SEED,1)
FOR j=0,N-1 DO BEGIN
.... etc....
```

```
> ENDFOR
> RETURN,a
> END
>
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> In the above code, the function "poisson" was written by me. It is as
> follows,
>
> CODE:
>
> FUNCTION poisson,a,b
> x = (b^a)/(exp(b)*factorial(a))
> RETURN,x
> END
```

in the future, you may want to make sure a and b are passed in before executing that statement. for example:

```
if n_elements(a) eq 0 then message,'missing a'
if n_elements(b) eq 0 then message,'missing b'
```

cheers,  
bob

PS bonus info.

Make sure that the code for  
FUNCTION poissondist,fLambda,N  
is in a file called poissondist.pro, and that it is in your IDL path.

Also, make sure your function:  
FUNCTION poisson,a,b  
is in a file called poisson.pro, and that it is in your IDL path.

---

Subject: Re: Help needed!!  
Posted by [Gray](#) on Fri, 16 Apr 2010 17:53:33 GMT  
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---

On Apr 16, 1:47 pm, Gray <grayliketheco...@gmail.com> wrote:  
> On Apr 16, 12:40 pm, bala murugan <bala2...@gmail.com> wrote:  
>  
>  
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 >>> since neither a or i exist at that point. And that condition is  
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> 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  
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> Your code can be written very simply, particularly since nothing is  
> stopping your "poisson" routine from working on arrays.  
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> Probably what you are looking for is something like this:  
>  
> FUNCTION poissondist,fLambda,N  
>     RETURN, POISSON(RANDOMU(SEED,N),fLambda)  
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> 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

Then, if you want, you can plot a histogram of an array "y" with:  
h = histogram(y,binsize=<some binsize>,locations=loc)  
PLOT, loc, h, psym=10  
(or alternatively you can use PLOTHIST from NASA's astrolib, linked  
above.)

---

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Subject: Re: Help needed!!

Posted by [bala murugan](#) on Fri, 16 Apr 2010 18:06:52 GMT

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---

On Apr 16, 11:48 am, "R.G. Stockwell" <noem...@please.com> wrote:

> "bala murugan" <bala2...@gmail.com> wrote in message  
>  
> news:29ee4ec6-4803-44fd-aa5c-00fc0d2c9376@u21g2000yqc.google groups.com...  
>  
>> Hi people,  
>  
>> I am new to IDL. This is my first program in IDL. Can somebody point  
>> out the errors in my code. I have been struggling to get it right.  
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>> CODE:  
>  
>> FUNCTION poissondist,fLambda,N  
>> r = RANDOMU(SEED,1)  
>> FOR j=1,N,1 DO BEGIN  
>  
> arrays are indexed from 0... N-1

```

>
>> x=poisson(j,fLambda)
>> if (x EQ r) THEN a[i]=j
>
> floating point numbers may never be exactly equal.
> Use a "if abs(x-r) lt 0.0001 then" type of statement
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> as others have pointed out, 'a' and 'i' do not exist here.
> i have no idea what you think "i" should be.
> For a you will need to allocate an array inside that function, like so:
> FUNCTION poissondist,fLambda,N
> a = fltarr(N)
> r = RANDOMU(SEED,1)
> FOR j=0,N-1 DO BEGIN
> .... etc....
>
>> ENDFOR
>> RETURN,a
>> END
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>> In the above code, the function "poisson" was written by me. It is as
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>> CODE:
>
>> FUNCTION poisson,a,b
>> x = (b^a)/(exp(b)*factorial(a))
>> RETURN,x
>> END
>
> in the future, you may want to make sure a and b are passed in
> before executing that statement. for example:
>
> if n_elements(a) eq 0 then message,'missing a'
> if n_elements(b) eq 0 then message,'missing b'
>
> cheers,
> bob
>
> PS bonus info.
>
> Make sure that the code for
> FUNCTION poissondist,fLambda,N
> is in a file called poissondist.pro, and that it is in your IDL path.
>
> Also, make sure your function:
> FUNCTION poisson,a,b
> is in a file called poisson.pro, and that it is in your IDL path.

```

Guys, thanks a lot for the info.

Sorry, I made a mistake while copying the code and pasting it:

CODE:

```
FUNCTION poissondist,fLambda,N
FOR i=1,N,1 DO BEGIN
a = FLTARR(N)
r = RANDOMU(SEED,1)
FOR j=1,N,1 DO BEGIN
x=poisson(j,fLambda)
if abs(x-r) lt 0.0001 THEN a[j]=j
ENDFOR
ENDFOR
RETURN,a
END
```

I also came across another method. But am not sure if it does the same thing as mentioned in the summary that I made.

The thing that I came across is as follows,

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

Can you please clarify if the second method does the same thing as the first?

Thanks,  
B

---

Subject: Re: Help needed!!  
Posted by [R.G.Stockwell](#) on Fri, 16 Apr 2010 18:59:34 GMT  
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---

"bala murugan" <bala2305@gmail.com> wrote in message  
news:63998232-09c5-4bf3-a795-b85c5c03b954@r27g2000yqn.google groups.com...

...  
CODE:

```
FUNCTION poissondist,fLambda,N
FOR i=1,N,1 DO BEGIN
```

```

a = FLTARR(N)
r = RANDOMU(SEED,1)
FOR j=1,N,1 DO BEGIN
  x=poisson(j,fLambda)
  if abs(x-r) lt 0.0001 THEN a[j]=j
ENDFOR
ENDFOR
RETURN,a
END
*****

```

when i becomes equal to N you will get an error trying to access a[i].  
Also, your a[0] is equal to zero.

And, your function is  
FUNCTION poissondist, fLambda, N  
and you call it like:  
x=poisson(j,fLambda)

Note that flambda is in the wrong position.

Subject: Re: Help needed!!  
Posted by [bala murugan](#) on Fri, 16 Apr 2010 19:11:08 GMT  
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On Apr 16, 12:59 pm, "R.G. Stockwell" <noem...@please.com> wrote:  
> "bala murugan" <bala2...@gmail.com> wrote in message  
>  
> news:63998232-09c5-4bf3-a795-b85c5c03b954@r27g2000yqn.google groups.com...  
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> FOR i=1,N,1 DO BEGIN  
> a = FLTARR(N)  
> r = RANDOMU(SEED,1)  
> FOR j=1,N,1 DO BEGIN  
> x=poisson(j,fLambda)  
> if abs(x-r) lt 0.0001 THEN a[i]=j  
> ENDFOR  
> ENDFOR  
> RETURN,a  
> END  
> \*\*\*\*\*  
>

> when i becomes equal to N you will get an error  
> trying to access a[i].  
> Also, your a[0] is equal to zero.  
>  
> And, your function is  
> FUNCTION poissondist, fLambda, N  
> and you call it like:  
> x=poisson(j,fLambda)  
>  
> Note that flambda is in the wrong position.

FIRST:

This function "x=poisson(j,fLambda)" is different from the poissondist.

Say I use " x = (fLambda^j)/(exp(fLambda)\*factorial(j)) " instead of the function poisson.

So this problem is now solved.

SECOND:

```
FUNCTION poissondist,fLambda,N
FOR i=0,N-1,1 DO BEGIN
  a = FLTARR(N)
  r = RANDOMU(SEED,1)
  FOR j=0,N-1,1 DO BEGIN
    x = (fLambda^j)/(exp(fLambda)*factorial(j))
    if abs(x-r) lt 0.0001 THEN a[j]=j
  ENDFOR
ENDFOR
RETURN,a
END
```

Hope its fine now....

---

Subject: Re: Help needed!!

Posted by [Gray](#) on Fri, 16 Apr 2010 19:13:34 GMT

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---

On Apr 16, 2:06 pm, bala murugan <bala2...@gmail.com> wrote:

> On Apr 16, 11:48 am, "R.G. Stockwell" <noem...@please.com> wrote:

>  
>  
>  
>  
>

```

>> "bala murugan" <bala2...@gmail.com> wrote in message
>
>> news:29ee4ec6-4803-44fd-aa5c-00fc0d2c9376@u21g2000yqc.google groups.com...
>
>>> Hi people,
>
>>> I am new to IDL. This is my first program in IDL. Can somebody point
>>> out the errors in my code. I have been struggling to get it right.
>
>>> CODE:
>
>>> FUNCTION poissondist,fLambda,N
>>> r = RANDOMU(SEED,1)
>>> FOR j=1,N,1 DO BEGIN
>
>> arrays are indexed from 0... N-1
>
>>> x=poisson(j,fLambda)
>>> if (x EQ r) THEN a[i]=j
>
>> floating point numbers may never be exactly equal.
>> Use a "if abs(x-r) lt 0.0001 then" type of statement
>
>> as others have pointed out, 'a' and 'i' do not exist here.
>> i have no idea what you think "i" should be.
>> For a you will need to allocate an array inside that function, like so:
>> FUNCTION poissondist,fLambda,N
>> a = fltarr(N)
>> r = RANDOMU(SEED,1)
>> FOR j=0,N-1 DO BEGIN
>> .... etc....
>
>>> ENDFOR
>>> RETURN,a
>>> END
>
>>> In the above code, the function "poisson" was written by me. It is as
>>> follows,
>
>>> CODE:
>
>>> FUNCTION poisson,a,b
>>> x = (b^a)/(exp(b)*factorial(a))
>>> RETURN,x
>>> END
>
>> in the future, you may want to make sure a and b are passed in
>> before executing that statement. for example:

```

```

>
>> if n_elements(a) eq 0 then message,'missing a'
>> if n_elements(b) eq 0 then message,'missing b'
>
>> cheers,
>> bob
>
>> PS bonus info.
>
>> Make sure that the code for
>> FUNCTION poissondist,fLambda,N
>> is in a file called poissondist.pro, and that it is in your IDL path.
>
>> Also, make sure your function:
>> FUNCTION poisson,a,b
>> is in a file called poisson.pro, and that it is in your IDL path.
>
> Guys, thanks a lot for the info.
>
> Sorry, I made a mistake while copying the code and pasting it:
>
> CODE:
>
> FUNCTION poissondist,fLambda,N
> FOR i=1,N,1 DO BEGIN
>     a = FLTARR(N)
>     r = RANDOMU(SEED,1)
>     FOR j=1,N,1 DO BEGIN
>         x=poisson(j,fLambda)
>         if abs(x-r) lt 0.0001 THEN a[i]=j
>     ENDFOR
> ENDFOR
> RETURN,a
> END
>
> I also came across another method. But am not sure if it does the same
> thing as mentioned in the summary that I made.
>
> The thing that I came across is as follows,
>
> FUNCTION poissondist, fLambda, N
> data = RANDOMU(SEED,N,POISSON=fLambda)
> RETURN,data
> END
>
> Can you please clarify if the second method does the same thing as the
> first?
>

```

> Thanks,  
> B

The second method does what you're looking for, the first may or may not but is overly complicated.

---

---

Subject: Re: Help needed!!

Posted by [bala murugan](#) on Fri, 16 Apr 2010 19:19:59 GMT

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---

On Apr 16, 1:13 pm, Gray <grayliketheco...@gmail.com> wrote:

> On Apr 16, 2:06 pm, bala murugan <bala2...@gmail.com> wrote:

>  
>  
>  
>  
>  
>

>> On Apr 16, 11:48 am, "R.G. Stockwell" <noem...@please.com> wrote:

>  
>>> "bala murugan" <bala2...@gmail.com> wrote in message  
>

>>> [news:29ee4ec6-4803-44fd-aa5c-00fc0d2c9376@u21g2000yqc.google.com](mailto:news:29ee4ec6-4803-44fd-aa5c-00fc0d2c9376@u21g2000yqc.google.com)...

>  
>>>> Hi people,  
>

>>>> I am new to IDL. This is my first program in IDL. Can somebody point  
>>>> out the errors in my code. I have been struggling to get it right.

>  
>>>> CODE:  
>

>>>> FUNCTION poissondist,fLambda,N

>>>> r = RANDOMU(SEED,1)

>>>> FOR j=1,N,1 DO BEGIN

>  
>>> arrays are indexed from 0... N-1  
>

>>>> x=poisson(j,fLambda)

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

>  
>>> floating point numbers may never be exactly equal.  
>>> Use a "if abs(x-r) lt 0.0001 then" type of statement  
>

>>> as others have pointed out, 'a' and 'i' do not exist here.  
>>> i have no idea what you think "i" should be.

>>> For a you will need to allocate an array inside that function, like so:  
>>> FUNCTION poissondist,fLambda,N

>>> a = fltarr(N)

```

>>> r = RANDOMU(SEED,1)
>>> FOR j=0,N-1 DO BEGIN
>>> .... etc....
>
>>>> ENDFOR
>>>> RETURN,a
>>>> END
>
>>>> In the above code, the function "poisson" was written by me. It is as
>>>> follows,
>
>>>> CODE:
>
>>>> FUNCTION poisson,a,b
>>>> x = (b^a)/(exp(b)*factorial(a))
>>>> RETURN,x
>>>> END
>
>>> in the future, you may want to make sure a and b are passed in
>>> before executing that statement. for example:
>
>>> if n_elements(a) eq 0 then message,'missing a'
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>
>>> cheers,
>>> bob
>
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>
>>> Also, make sure your function:
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>
>> Guys, thanks a lot for the info.
>
>> Sorry, I made a mistake while copying the code and pasting it:
>
>> CODE:
>
>> FUNCTION poissondist,fLambda,N
>> FOR i=1,N,1 DO BEGIN
>>     a = FLTARR(N)
>>     r = RANDOMU(SEED,1)
>>     FOR j=1,N,1 DO BEGIN

```

```
>>         x=poisson(j,fLambda)
>>         if abs(x-r) lt 0.0001 THEN a[i]=j
>>     ENDFOR
>> ENDFOR
>> RETURN,a
>> END
>
>> I also came across another method. But am not sure if it does the same
>> thing as mentioned in the summary that I made.
>
>> The thing that I came across is as follows,
>
>> FUNCTION poissondist, fLambda, N
>> data = RANDOMU(SEED,N,POISSON=fLambda)
>> RETURN,data
>> END
>
>> Can you please clarify if the second method does the same thing as the
>> first?
>
>> Thanks,
>> B
>
> The second method does what you're looking for, the first may or may
> not but is overly complicated.
```

Thanks Gray....

But I would be glad if I can make the first method work....

If you have any suggestions of doing the first method in a different way, please let me know...

By the way, thanks a lot!!!

---

Subject: Re: Help needed!!

Posted by [bala murugan](#) on Fri, 16 Apr 2010 19:46:02 GMT

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---

On Apr 16, 1:13 pm, Gray <grayliketheco...@gmail.com> wrote:

> On Apr 16, 2:06 pm, bala murugan <bala2...@gmail.com> wrote:

>

>

>

>

>

>> On Apr 16, 11:48 am, "R.G. Stockwell" <noem...@please.com> wrote:

```

>
>>> "bala murugan" <bala2...@gmail.com> wrote in message
>
>>> news:29ee4ec6-4803-44fd-aa5c-00fc0d2c9376@u21g2000yqc.google groups.com...
>
>>>> Hi people,
>
>>>> I am new to IDL. This is my first program in IDL. Can somebody point
>>>> out the errors in my code. I have been struggling to get it right.
>
>>>> CODE:
>
>>>> FUNCTION poissondist,fLambda,N
>>>> r = RANDOMU(SEED,1)
>>>> FOR j=1,N,1 DO BEGIN
>
>>> arrays are indexed from 0... N-1
>
>>>> x=poisson(j,fLambda)
>>>> if (x EQ r) THEN a[j]=j
>
>>> floating point numbers may never be exactly equal.
>>> Use a "if abs(x-r) lt 0.0001 then" type of statement
>
>>> as others have pointed out, 'a' and 'i' do not exist here.
>>> i have no idea what you think "i" should be.
>>> For a you will need to allocate an array inside that function, like so:
>>> FUNCTION poissondist,fLambda,N
>>> a = fltarr(N)
>>> r = RANDOMU(SEED,1)
>>> FOR j=0,N-1 DO BEGIN
>>> .... etc....
>
>>>> ENDFOR
>>>> RETURN,a
>>>> END
>
>>>> In the above code, the function "poisson" was written by me. It is as
>>>> follows,
>
>>>> CODE:
>
>>>> FUNCTION poisson,a,b
>>>> x = (b^a)/(exp(b)*factorial(a))
>>>> RETURN,x
>>>> END
>
>>> in the future, you may want to make sure a and b are passed in

```

```

>>> before executing that statement. for example:
>
>>> if n_elements(a) eq 0 then message,'missing a'
>>> if n_elements(b) eq 0 then message,'missing b'
>
>>> cheers,
>>> bob
>
>>> PS bonus info.
>
>>> Make sure that the code for
>>> FUNCTION poissondist,fLambda,N
>>> is in a file called poissondist.pro, and that it is in your IDL path.
>
>>> Also, make sure your function:
>>> FUNCTION poisson,a,b
>>> is in a file called poisson.pro, and that it is in your IDL path.
>
>> Guys, thanks a lot for the info.
>
>> Sorry, I made a mistake while copying the code and pasting it:
>
>> CODE:
>
>> FUNCTION poissondist,fLambda,N
>> FOR i=1,N,1 DO BEGIN
>>     a = FLTARR(N)
>>     r = RANDOMU(SEED,1)
>>     FOR j=1,N,1 DO BEGIN
>>         x=poisson(j,fLambda)
>>         if abs(x-r) lt 0.0001 THEN a[i]=j
>>     ENDFOR
>> ENDFOR
>> RETURN,a
>> END
>
>> I also came across another method. But am not sure if it does the same
>> thing as mentioned in the summary that I made.
>
>> The thing that I came across is as follows,
>
>> FUNCTION poissondist, fLambda, N
>> data = RANDOMU(SEED,N,POISSON=fLambda)
>> RETURN,data
>> END
>
>> Can you please clarify if the second method does the same thing as the
>> first?

```

>  
>> Thanks,  
>> B  
>  
> The second method does what you're looking for, the first may or may  
> not but is overly complicated.

I also have a question in the second method in the following statement.

```
data = RANDOMU(SEED,N,POISSON=fLambda)
```

Ordinarily RANDOMU generates floating point pseudo random numbers in the range  $0.0 < X < 1.0$

Can you explain in detail what happens in the above statement of the code.???

---

Subject: Re: Help needed!!  
Posted by [Craig Markwardt](#) on Sat, 17 Apr 2010 03:59:26 GMT  
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On Apr 16, 12:39 pm, bala murugan <bala2...@gmail.com> wrote:  
> On Apr 16, 10:23 am, Craig Markwardt <craig.markwa...@gmail.com>  
> wrote:  
>  
>  
>  
>> On Apr 16, 12:18 pm, bala murugan <bala2...@gmail.com> wrote:  
>  
>>> On Apr 16, 10:10 am, pp <pp.pente...@gmail.com> wrote:  
>  
>>>> On Apr 16, 12:49 pm, bala murugan <bala2...@gmail.com> wrote:  
>  
>>>> > I am new to IDL. This is my first program in IDL. Can somebody point  
>>>> > out the errors in my code. I have been struggling to get it right.  
>  
>>>> If you do not say what you want to do, and what the problem is, we are  
>>>> unlikely to guess it.  
>  
>>>> > FUNCTION poissondist,fLambda,N  
>>>> > r = RANDOMU(SEED,1)  
>>>> > FOR j=1,N,1 DO BEGIN  
>>>> > x=poisson(j,fLambda)  
>>>> > if (x EQ r) THEN a[i]=j  
>>>> > ENDFOR  
>>>> > RETURN,a  
>>>> > END

>  
 >>> a is never defined, which would cause an error when you try to do  
 >>> a[i]=j. However, you seem to avoid this occurring with a condition  
 >>> that looks like may never happen (x eq r).  
 >  
 >>> 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?  
 >  
 >> You might also want to check out an existing and well-tested Poisson  
 >> deviate generator in the IDL Astronomy Library, called POIDEV.  
 >  
 >> <http://idlastro.gsfc.nasa.gov/ftp/pro/math/poidev.pro>  
 >  
 >> Craig  
 >  
 > Does the poidev do the same thing as what I want to accomplish?

Yes of course.

meanval = dblarr(N) + fLambda ;; Desired mean value

;; Poisson deviates with mean value fLambda

piSamples = poidev(meanval, seed=seed)

Craig

---

---

Subject: Re: Help needed!!

Posted by [jeanh](#) on Sat, 17 Apr 2010 14:57:15 GMT

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---

On 16/04/2010 2:06 PM, bala murugan wrote:

```
> FUNCTION poissondist,fLambda,N
> FOR i=1,N,1 DO BEGIN
>   a = FLTARR(N)
>   r = RANDOMU(SEED,1)
>   FOR j=1,N,1 DO BEGIN
>     x=poisson(j,fLambda)
>     if abs(x-r) lt 0.0001 THEN a[i]=j
>   ENDFOR
> ENDFOR
> RETURN,a
> END
```

Hi,

you have two more errors here.

First, as you overwrite the array "a" in each "i" loop, you will only have results for i=N, not for all i. You need to declare "a" before the first loop.

Second, a[j] will not work when i=N. As you start i at 1, not 0, you would need to do a[i-1]=j (or a[i-1]=j-1, to be on the same base)

Jean

---

---

Subject: Re: Help needed!!

Posted by [R.G.Stockwell](#) on Sat, 17 Apr 2010 17:04:13 GMT

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---

"bala murugan" <bala2305@gmail.com> wrote in message  
news:154cecd6-4a5f-4840-bc0d-ccc120806c38@u22g2000yqf.google groups.com...

```
....
> FIRST:
> This function "x=poisson(j,fLambda)" is different from the
> poissondist.
```

well, nevermind then. :)

---

---

Subject: Re: Help needed!!

Posted by [R.G.Stockwell](#) on Sat, 17 Apr 2010 17:07:19 GMT

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---

"bala murugan" <bala2305@gmail.com> wrote in message  
news:29ee4ec6-4803-44fd-aa5c-00fc0d2c9376@u21g2000yqc.google groups.com...

one general piece of advice, if you plan on doing a fair bit of IDL  
programming  
in the future, is to get David Fannings book and read it completely  
(then read it again).

<http://www.dfanning.com/documents/books.html>

Also, many questions have already been answered on his website.  
<http://www.dfanning.com/>

cheers,  
bob

---

Subject: Re: Help needed!!

Posted by [bala murugan](#) on Mon, 19 Apr 2010 17:16:44 GMT

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---

On Apr 17, 11:07 am, "R.G. Stockwell" <noem...@please.com> wrote:

> "bala murugan" <bala2...@gmail.com> wrote in message  
>  
> news:29ee4ec6-4803-44fd-aa5c-00fc0d2c9376@u21g2000yqc.google groups.com...  
>  
> one general piece of advice, if you plan on doing a fair bit of IDL  
> programming  
> in the future, is to get David Fannings book and read it completely  
> (then read it again).  
>  
> <http://www.dfanning.com/documents/books.html>  
>  
> Also, many questions have already been answered on his website.<http://www.dfanning.com/>  
>  
> cheers,  
> bob

Thanks for the advice :).

I have a question in statistics.

What is a poisson deviate ?

Is it a point in the poisson distribution curve?

Can anybody explain it?

---