
Subject: Re: endless loop problem
Posted by [penteado](#) on Sun, 06 Dec 2009 23:28:43 GMT
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On Dec 6, 9:11 pm, Elkunn <wasit.weat...@gmail.com> wrote:

```
> Hi All,  
> I would like to run iterations until a condition is met. But it runs  
> non-stop. What is the problem with the following code? The problem is  
> L reaches the value 1.2840277, but the loop still loops and gives  
> 1.2840277 over and over. How to I stop it when it reaches to  
> 1.2840277?  
> Thanks  
>  
> ;E1 = Unit vector, known  
> ; Z is known matrix  
> REPEAT BEGIN  
>   C = Z##E1  
>   L = sqrt(EC[0]+EC[1])  
>   E1 = EC/L  
>   print,L  
>   ;Keep going until nothing is moved.  
> ENDREP UNTIL L LT 1.2840277  
>
```

L does not change because you are calculating the same thing over and over again. L only depends on EC[0] and EC[1], and neither changes when you go through the loop. So if L does not happen to be <1.2840277, the loop will never end.

Subject: Re: endless loop problem
Posted by [David Fanning](#) on Sun, 06 Dec 2009 23:52:50 GMT
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pp writes:

```
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And it is not likely that it will *ever* be 1.2840277!

http://www.dfanning.com/math_tips/sky_is_falling.html

Cheers,

David

--

David Fanning, Ph.D.

Fanning Software Consulting, Inc.

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

Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: endless loop problem

Posted by [Wasit.Weather](#) on Mon, 07 Dec 2009 01:20:54 GMT

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On Dec 6, 5:52 pm, David Fanning <n...@dfanning.com> wrote:

> pp writes:

>

> .

>

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>

> --

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I should have given more explanations on this. L changes over each iteration. There is no problem. I missed one letter, here is the corrected one.

```
;E1 = Unit vector, known
```

```
; Z is known matrix
```

```
REPEAT BEGIN
```

```
  EC = Z##E1
```

```
  L = sqrt(EC[0]+EC[1])
```

```
  E1 = EC/L
```

```
  print,L
```

```
;Keep going until nothing is moved.
```

```
ENDREP UNTIL L LT 1.2840277
```

I am struggling to find eigenvalues and eigenvectors manually, instead of IDL routines.

I think it might be a problem as David pointed out. But there should be a value less than or greater than that value, right?

Thanks

Subject: Re: endless loop problem

Posted by [penteado](#) on Mon, 07 Dec 2009 02:21:33 GMT

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On Dec 6, 11:20 pm, Elkunn <wasit.weat...@gmail.com> wrote:

> On Dec 6, 5:52 pm, David Fanning <n...@dfanning.com> wrote:

>

>

>

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>

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> I think it might be a problem as David pointed out. But there should
> be a value less than or greater than that value, right?
> Thanks

```

In that case, your problem is either that L never gets smaller than that value, or it varies slowly enough that it only seems it will never get there. If in fact it never gets smaller than that limit, it is either a problem with the algorithm (meaning that iterating that way, with that starting point, L will never get below that value), or it is a precision problem (meaning that at some point the steps become too small to change the big value L has).

To diagnose it, what is probably more useful than just printing L at each step would be to also print its variation, since it may just be smaller than is visible with the default number of digits print uses. Something like:

```

L=0d0
REPEAT BEGIN
  EC = Z##E1
  old_L=L
  L = sqrt(EC[0]+EC[1])
  E1 = EC/L
  print,L,L-old_L
  ;Keep going until nothing is moved.
ENDREP UNTIL L LT 1.2840277

```
