Subject: Re: Mean and NaNs
Posted by Craig Markwardt on Wed, 06 Feb 2013 17:38:08 GMT
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On Wednesday, February 6, 2013 8:16:35 AM UTC-8, Fab wrote:
> Hi IDLers,
>
>
>
> I know I have been annoying with NaNs lately, but is the following
> "Floating illegal operand" supposed to happen???
>
>
>
> IDL> print, !VERSION
> { x86_64 linux unix linux 8.2.2 Jan 23 2013 64 64}
> IDL> data = FINDGEN(10,10,10)
> IDL> data[5,5,*] = !VALUES.F_NAN
>
> IDL> help, mean(data, /NAN)
> <Expression> FLOAT = 499.444
> IDL> help, mean(data, DIMENSION=3, /NAN)
> <Expression> FLOAT = Array[10, 10]
> % Program caused arithmetic error: Floating illegal operand
>
> Which is related to:
> IDL> print, mean(!VALUES.F_NAN)
> NaN
> IDL> print, mean(!VALUES.F_NAN, /NAN)
> -NaN
> % Program caused arithmetic error: Floating illegal operand
>
> Is it my job to catch those cases or is something wrong?

The behavior of MEAN(x,/NAN) is to exclude NAN values from the mean calculation.

What do you expect to happen when *all* of the values are NAN?

Actually this is kind of a failure of the IDL documentation to say what happens in these cases.

CM

Subject: Re: Mean and NaNs
Posted by Fabzi on Wed, 06 Feb 2013 19:06:08 GMT
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Hi Craig,

On 02/06/2013 06:38 PM, Craig Markwardt wrote:
> What do you expect to happen when*all* of the values are NAN?

I expect a NaN.

So the result of mean() is consistent to me, but the "Floating illegal operand" is annoying.

For example, I have a 3D array of geopotential heights at a certain pressure level, some of the pixels are always NaNs because of topography. I compute means on the third dimension which is time. When I Plot the results, I can go along automatically with NaNs in my data image. I just find it awkward and inefficient to have to write a case for these pixels, just to remove the "Floating illegal operand" warning...

But it seems quite useless to argue in this direction, my precious posts on the inconsistency in value_locate() results with NaNs also found not much interest

Anyway, thanks for your answer!

Fab
