Subject: Re: NAN Problem
Posted by penteado on Wed, 13 Jan 2010 20:59:11 GMT
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On Jan 13, 6:23 pm, David Fanning <n...@dfanning.com> wrote:
> Folks,
>
> Consider this sequence of commands on my IDL 7.0.1
> LINUX version.
>
> IDL> a = Findgen(11)
> IDL> a[0] = !Values.F_NAN
> IDL> Print, Min(a), Max(a)
> NaN NaN
> IDL> b = Findgen(11)
> IDL> b[1] = !Values.F_NAN
> IDL> Print, Min(b), Max(b)
> 0.00000 10.00000
>
> What do you make of that? This is giving me a great
> deal of touble today while trying to elminate bad
> values from an image. :-(
>
> I have the same results with my Windows IDL 7.1.2
> version, except I do get a warning about a floating
> illegal operand with variable b, which I don't get
> on LINUX.

Interesting. I found the same here, with 7.1.1 in Linux. I had never noticed this behavior before.

I do not know how the min and max functions were implemented, but this would be the result of one algorithms that could be used for it. Since NaN does not compare larger or smaller than anything, the following would produce the same result:

```
function min_test,a
res=a[0]
for i=1,n_elements(a)-1 do if a[i] lt res then res=a[i]
return,res
end
```

When the NaN is the first element, it will be set as the initial value for the minimum, and since nothing is smaller, it will be kept as the result. Conversely, if the first value is not NaN, no NaN value that comes after will be smaller than it, so an NaN would not replace the minimum.