Subject: BYTSCL and NAN keyword
Posted by K. Bowman on Tue, 02 Mar 2004 16:54:38 GMT
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Has anyone else noticed this problem with BYTSCL and the NAN keyword?

The BYTSCL function scales integers and floats into bytes between 0 and 255 (or the value set by the TOP keyword). If the NAN keyword is set, NANs in the input array are set to 0 in the output array. But 0 falls into the valid range for good values (0 to TOP)!

Because it is not possible to set NANs to a value outside the valid range (greater than TOP), it is not possible to distinguish missing from valid data.

As best I can tell, the only solution is to not use the NAN keyword and scale the valid data only by using WHERE to find all the valid values. Am I missing something obvious? (Quite possible, I admit.)

Ken Bowman

Subject: Re: BYTSCL and NAN keyword
Posted by David Fanning on Wed, 03 Mar 2004 02:15:44 GMT
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Kenneth P. Bowman writes:

> You can have the last word.

Here is the proof of Turing's theorem all over again.
If I respond, the theorem is true, if I don't the
theorem is false. But we can't decide the truth within
the system of our own newsgroup! :-)

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting
Coyote's Guide to IDL Programming: http://www.dfanning.com/

Subject: Re: BYTSCL and NAN keyword
Posted by David Fanning on Wed, 03 Mar 2004 02:18:36 GMT

David Fanning writes:

> Here is the proof of Turing's theorem all over again.
> If I respond, the theorem is true, if I don't the
> theorem is false. But we can't decide the truth within
> the system of our own newsgroup! :-)

Let's just say when Craig responds to tell me how
hopelessly I botched Turing's Theorem, I'm going to let
him have the last word!

Cheers,

David
--
David Fanning, Ph.D.
Fanning Software Consulting
Coyote's Guide to IDL Programming: http://www.dfanning.com/

Subject: Re: BYTSCL and NAN keyword
Posted by Craig Markwardt on Wed, 03 Mar 2004 08:10:03 GMT

David Fanning <david@dfanning.com> writes:
>
> Let's just say when Craig responds to tell me how
> hopelessly I botched Turing's Theorem, I'm going to let
> *him* have the last word!

Nope, I am currently away on travel and a robot post messages in my
place. All of the messages the robot posts are false.

Craig

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Craig B. Markwardt, Ph.D. EMAIL: craigmnet@REMOVEcow.physics.wisc.edu
Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response
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Subject: Re: BYTSCL and NAN keyword
Posted by Craig Markwardt on Wed, 03 Mar 2004 16:41:47 GMT

Kenneth Bowman <k-bowman@null.tamu.edu> writes:

> In article <ond67vf8sb.fsf@cow.physics.wisc.edu>,
> Craig Markwardt <craigmnet@REMOVEcow.physics.wisc.edu> wrote:
>
>> How about this non-WHERE approach?
>> bb = bytscl(x, ...) + (finite(x) EQ 0)*255b
>
> Clever idea (JD also)! The logical not operator (~) will work as well
>
> bb = BYTSCL(x, ..., /NAN) + BYTE(255*(~FINITE(co)))
>
> While not mandatory, the BYTE function ensures that the result bb is
> type BYTE (since FINITE returns a LONG).

No I disagree. FINITE should (and does) return a BYTE, just like all
the other conditional expressions in IDL.

Logical negation ("~" operator) also keeps the byte-ness of the
operand.

I think where you are going askew is the multiplication by 255. You
really need the "B" after 255b in order to force it to be a byte.

Craig

--
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Craig B. Markwardt, Ph.D. EMAIL: craigmnet@REMOVEcow.physics.wisc.edu
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Subject: Re: BYTSCL and NAN keyword
Posted by K. Bowman on Wed, 03 Mar 2004 21:35:00 GMT
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In article <onfzcpublg.fsf@cow.physics.wisc.edu>,
Craig Markwardt <craigmnet@REMOVEcow.physics.wisc.edu> wrote:

> No I disagree. FINITE should (and does) return a BYTE, just like all
> the other conditional expressions in IDL.

My mistake.

Ken
