Subject: Re: what is Floating illegal operand question?
Posted by Haje Korth on Mon, 18 Apr 2005 20:30:38 GMT
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The first element of sn is 0./0., which is not defined. Haje

"lixiaoyao" <lixiaoyao5880@yahoo.com> wrote in message
news:1113855953.629412.311210@f14g2000cwb.googlegroups.com.. .
> when I run this code in idl,it generated the following wrong
> information,what is
> wrong there?
> % Compiled module: $MAIN$.
> % Program caused arithmetic error: Floating illegal operand
> window,xs=640,ys=480
> x=10*!pi*findgen(1001)/1000
> sn=sin(x)/x
> plot,x,sn
> end
> thanks
>

Subject: Re: what is Floating illegal operand question?
Posted by Haje Korth on Mon, 18 Apr 2005 20:34:40 GMT
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AFAIK, IDL does not evaluate any limits. Haje

"lixiaoyao" <lixiaoyao5880@yahoo.com> wrote in message
news:1113855953.629412.311210@f14g2000cwb.googlegroups.com.. .
> when I run this code in idl,it generated the following wrong
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> thanks
>

Subject: Re: what is Floating illegal operand question?

Posted by David Fanning on Mon, 18 Apr 2005 20:39:13 GMT
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lixiaoyao writes:

> when I run this code in idl,it generated the following wrong
> information,what is
> wrong there?
> % Compiled module: $MAIN$.
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> window,xs=640,ys=480
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> sn=sin(x)/x
> plot,x,sn
> end

IDL> Print, Sin(0)/0
      -NaN
% Program caused arithmetic error: Floating illegal operand

Not sure you want to be dividing by zero. :-)

Cheers,

David

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

Subject: Re: what is Floating illegal operand question?
Posted by Michael Wallace on Mon, 18 Apr 2005 20:49:01 GMT
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lixiaoyao wrote:
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> thanks

>

You're getting it from a floating point divide by zero. When using
integers, IDL actually tells you that you tried to divide by zero. For
some reason, they have a different message for floating point.

IDL> x = 0 / 0
% Program caused arithmetic error: Integer divide by 0
IDL> x = 0.0 / 0.0
% Program caused arithmetic error: Floating illegal operand

-Mike

Subject: Re: what is Floating illegal operand question?
Posted by Haje Korth on Mon, 18 Apr 2005 21:02:51 GMT
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Well, if I understand this right, 0/0 is defined and the result is 0, so
that the division by zero message is only informational. On the other hand
0./0. is not defined for floating point numbers and results in an error (see
http://mathworld.wolfram.com/DivisionbyZero.html). Correct me if I am wrong.

Haje

"Michael Wallace" <mwallace.no.spam@no.spam.swri.edu.invalid> wrote in
message news:11687a01efaaa29@corp.supernews.com...
> lixiaoyao wrote:
>> when I run this code in idl,it generated the following wrong
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>> wrong there?
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>
> You're getting it from a floating point divide by zero. When using
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> some reason, they have a different message for floating point.
>
> IDL> x = 0 / 0

> % Program caused arithmetic error: Integer divide by 0
> IDL> x = 0.0 / 0.0
> % Program caused arithmetic error: Floating illegal operand
>
> -Mike

Subject: Re: what is Floating illegal operand question?
Posted by James Kuyper on Mon, 18 Apr 2005 21:24:12 GMT
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Haje Korth wrote:
> Well, if I understand this right, 0/0 is defined and the result is 0, so
> that the division by zero message is only informational. On the other hand
> 0./0. is not defined for floating point numbers and results in an error (see
> http://mathworld.wolfram.com/DivisionbyZero.html). Correct me if I am wrong.

0/0 is exactly as undefined for integers as 0.0/0.0 is for floating
point. To see why that is true, please try to identify a finite floating
point value for f that is NOT a solution to this equation:

0.0*f eq 0.0

Then try to find an integer value for i that is NOT a solution for

0*i eq 0

Is it any easier for the integer case than for the floating point case?

Subject: Re: what is Floating illegal operand question?
Posted by Michael Wallace on Mon, 18 Apr 2005 21:51:18 GMT
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(0 / 0) is just as undefined as (0.0 / 0.0) is. However, there is no
way to express NaN or Infinity when working with integers. The IEEE
floating point specification allows for NaN and Infinity, but the
integer spec does not. Without a NaN option, IDL (and other languages
as well), default to evaluating (0 / 0) as 0 even though this is
technically incorrect.

-Mike

Haje Korth wrote:
> Well, if I understand this right, 0/0 is defined and the result is 0, so
> that the division by zero message is only informational. On the other hand

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>
>
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>> IDL> x = 0 / 0
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>> IDL> x = 0.0 / 0.0
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>>
>> -Mike
>
>
>

Subject: Re: what is Floating illegal operand question?
Posted by lixiaoyao on Mon, 18 Apr 2005 23:08:00 GMT
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thanks a lot

Subject: Re: what is Floating illegal operand question?
Posted by m_schellens on Tue, 19 Apr 2005 08:43:16 GMT
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Note that in IDL *any* integer devided by 0 evaluates as divided by 1.
marc

Subject: Re: what is Floating illegal operand question?
Posted by peter.julyan on Tue, 19 Apr 2005 10:03:48 GMT
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This used to really bug me then I discovered that the manual says "In the vast majority of cases, floating-point underflow errors are harmless and can be ignored", and that they can be suppressed by setting:

!EXCEPT=0

If you dare...

Pete.

Subject: Re: what is Floating illegal operand question?
Posted by Haje Korth on Tue, 19 Apr 2005 11:51:54 GMT
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Mike and James,
Thanks for the clarification. I was thrown off by the emphasized on floating numbers on the mathworld web site. Deep inside it did not make any sense, so I blamed it on the lecture I mussed have missed in college. :-)
Mike's explanation makes perfect sense, so thanks for straightening me out...

Cheers,
Haje

"Michael Wallace" <mwallace.no.spam@no.spam.swri.edu.invalid> wrote in message news:1168aupboi2v87b@corp.supernews.com...
> (0 / 0) is just as undefined as (0.0 / 0.0) is. However, there is no way
> to express NaN or Infinity when working with integers. The IEEE floating
> point specification allows for NaN and Infinity, but the integer spec does
> not. Without a NaN option, IDL (and other languages as well), default to
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>
> -Mike
>
>
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>>
>>