Subject: Re: Need help with value_locate and interpolation
Posted by btt on Fri, 02 Apr 2004 17:00:54 GMT
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Leslie Welser wrote:

> I'm having some trouble with using the value_locate function. Let's
> say I have a vector with 10 elements, and I want to find the
> "interpolated" array index for a particular value. I know how to
> interpolate the vector, but I can't find a way to return the index as
> a float and not an integer. In other words, given a certain value of
> the array, I would like to find a way to return the information that
> that interpolated value is at an index of, say, 4.27. Is there a
> simple way to do this?
> Thanks,
> Leslie

Hello,

I can't understand what you are after, at least, I don't see how an interpolated value could have an "index" into the original. Could you take another swing at your question - maybe with pseudo-code of what you want to do.

Ben

Subject: Re: Need help with value_locate and interpolation
Posted by JD Smith on Fri, 02 Apr 2004 17:06:39 GMT
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On Fri, 02 Apr 2004 12:00:54 -0500, Ben Tupper wrote:

> Leslie Welser wrote:
>
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> want to do.

I think he probably means his data is monotonic, in which case
something like:

frac=interpol(findgen(n_elements(data)),data,value)

will work. Here `value' can be a vector (and should be, if you have
multiple values to search).

JD

Subject: Re: Need help with value_locate and interpolation
Posted by Wayne Landsman on Fri, 02 Apr 2004 17:20:09 GMT
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Leslie Welser wrote:
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> simple way to do this?

You might look at the function tabinv.pro at
ftp://idlastro.gsfc.nasa.gov/pub/pro/math/tabinv.pro

which first uses VALUE_LOCATE to find the two integer indicies which
bracket the supplied value, and then linear interpolates between the two
indicies to return a floating point value.

--Wayne Landsman

Subject: Re: Need help with value_locate and interpolation
Posted by James Kuyper on Fri, 02 Apr 2004 17:21:42 GMT
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Ben Tupper wrote:
>
> Leslie Welser wrote:

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> want to do.

I think that what he wants is a linear interpolation between the
discrete values that would be provided by a where(). Thus:

x = [0.5, 1.2, 3.6, 93.2]

where(x eq 1.2) gives 1, where(x eq 3.6) gives 2. Since 2.4 is exactly
1/2 way between 1.2 and 3.6, then interp_index(x,2.4) would give a value
exactly 1/2 way between 1 and 2: 1.5.

Subject: Re: Need help with value_locate and interpolation
Posted by Yunxiang Zhang on Fri, 02 Apr 2004 22:42:38 GMT
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check out the motley IDL library for MGH_LOCATE(). That might be what you
want.

Yunxiang

On 1 Apr 2004, Leslie Welser wrote:

> I'm having some trouble with using the value_locate function. Let's
> say I have a vector with 10 elements, and I want to find the
> "interpolated" array index for a particular value. I know how to
> interpolate the vector, but I can't find a way to return the index as
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