Subject: Re: Finding the index of the median
Posted by davidf on Tue, 29 Oct 1996 08:00:00 GMT
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Dean Schulze <schulze@cassini.lpl.arizona.edu> writes:

> David Fanning wrote:

>> Be aware that there can be multiple locations in your
>> array that are equal to the median value. The index that
>> is returned by the WHERE function will be an array of
>> all of those values.

>   That is exactly why the WHERE() function won't work.
> I need to know which one of those locations is returned
> by the MEDIAN() function.

I have apparently not made myself clear. Let me try again.

Suppose this is your array of values:

    array = [3, 2, 7, 8, 15, 1]

The median value is the number 7 located at the third
position in the array, i.e., at the index 2. We see this
by printing the value of the MEDIAN function.

    medianValue = MEDIAN(array)
    PRINT, medianValue

The number 7 is printed. What Dean wants is
the location in the array where the median value
is located.

I suggest he use the WHERE function, which returns
the index in the variable array where the medianValue
is located. Like this:

    PRINT, WHERE(array EQ medianValue)

The number 2 is printed. This is the *index* into
the array where the median value (7) is located.

My point is that the median value can occur multiple
times in the array. For example:

    array = [3, 2, 7, 8, 7, 15, 1]

So that what the WHERE function returns is a vector
of *all* the indices into the array where the median
value occurs. In this example, do this:

```
medianValue = MEDIAN(array)
PRINT, WHERE(array EQ medianValue)
```

The indices 2 and 4 are printed out.

This works, by the way, for multidimensional arrays.

Hope this clarifies.

David

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* Sometimes I go about pitying myself, and all along my
* soul is being blown by great winds across the sky.
*   -- Ojibway saying
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