Subject: Re: array problems
Posted by Jean H. on Fri, 11 Jul 2008 19:02:23 GMT
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David Sheerin wrote:
> Hi All
> I have a palindromic vector of floats, e.g. [a,b,c,b,a] , and I would like
> to expand it to include the mean between each value like [(0+a)/2, a,
> (a+b)/2, b, (b+c)/2, c, (c+b)/2, b, (b+a)/2, a, (a+0)/2]. Is there any
> elegant way of doing this without having to resort to clunky for loops?
>
> I also would like to repeat this action on the resulting vector.
>
> Thanks for any tips
>
> David
>
>

Hi,
1) get your "average".
nbEntries = n_elements(data)
avg = (data + shift(data,-1)) /2.0
2)add the 1st entry and correct the last entry:
avg = [data[0] / 2.0,avg]
avg[nbEntries] = data[nbEntries-1] / 2.0
3)create the new array by coping each original array, with a "step" of 2 cells betweens two values from the same original array
newData = fltarr(nbEntries*2+1)
nnewData[1:nbEntries*2:2] = data
newData[0:nbEntries*2:2] = avg

Jean

Subject: Re: array problems
Posted by Vince Hradil on Fri, 11 Jul 2008 19:03:43 GMT
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On Jul 11, 1:36 pm, "David Sheerin" <davidshee...@btinternet.com>
wrote:
> Hi All
> I have a palindromic vector of floats, e.g. [a,b,c,b,a] , and I would like
> to expand it to include the mean between each value like [(0+a)/2, a,
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> Thanks for any tips
>
> David

Sounds like you want to look into SHIFT()

Subject: Re: array problems
Posted by jschwab@gmail.com on Fri, 11 Jul 2008 19:20:58 GMT
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On Jul 11, 2:36 pm, "David Sheerin" <davidshee...@btinternet.com>
wrote:
> Hi All
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> to expand it to include the mean between each value like [(0+a)/2, a,
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> David

You can do this in a few lines with a combination of rebin and shift.

```
;; Take only the first section of the array
half = [a, b, c]

;; use rebin with the sample keyword to duplicate your values
;; this gives [a, a, b, b, c, c]
n = n_elements(half)
doubled = rebin(half, 2 * n, /sample)

;; now use shift to combine and average, and drop the last element
extended = ((doubled + shift(doubled, -1)) / 2.0)[0:2*n-2]

;; now you can use reverse() and array concatenation to do back
;; to the full palindromic array
```

Josiah

Subject: Re: array problems
Posted by jschwab@gmail.com on Fri, 11 Jul 2008 19:26:27 GMT

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On Jul 11, 2:36 pm, "David Sheerin" <davidshee...@btinternet.com>
wrote:
> Hi All
> I have a palindromic vector of floats, e.g. [a,b,c,b,a] , and I would like
> to expand it to include the mean between each value like [(0+a)/2, a,
> (a+b)/2, b, (b+c)/2, c, (c+b)/2, b, (b+a)/2, a, (a+0)/2]. Is there any
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>
> David

Or, even better, just use interpol.

if
array = [a, b, c, b, a]
then
output = interpol(array, 9)
is your desired result

Josiah

Subject: Re: array problems
Posted by pgrigis on Fri, 11 Jul 2008 19:59:36 GMT
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jschwab@gmail.com wrote:
> On Jul 11, 2:36 pm, "David Sheerin" <davidshee...@btinternet.com>
> wrote:
>> Hi All
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kudos for the oneliner!

Paolo

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>
> Josiah

Subject: Re: array problems
Posted by Bob[3] on Mon, 14 Jul 2008 15:16:58 GMT
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On Jul 11, 3:26 pm, "jsch...@gmail.com" <jsch...@gmail.com> wrote:
> On Jul 11, 2:36 pm, "David Sheerin" <davidshee...@btinternet.com>
> wrote:
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> Josiah

Don't forget to add in the first and last elements.
output2 = [output[0]/2, output, output[0]/2] - or similar.

Subject: Re: array problems
Posted by David Sheerin on Tue, 15 Jul 2008 19:24:13 GMT
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Great - this is an elegant solution...

Thanks!

"Bob Crawford" <Snowman42@gmail.com> wrote in message
news:8d9523e8-2690-4408-89fb-3f2caed198be@25g2000hsx.googleg roups.com...
On Jul 11, 3:26 pm, "jsch...@gmail.com" <jsch...@gmail.com> wrote:
> On Jul 11, 2:36 pm, "David Sheerin" <davidshee...@btinternet.com>
> wrote:
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