
Subject: Re: array problems

Posted by [Jean H.](#) on Fri, 11 Jul 2008 19:02:23 GMT

[View Forum Message](#) <> [Reply to Message](#)

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 between 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

[View Forum Message](#) <> [Reply to Message](#)

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,
> (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

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
[View Forum Message](#) <> [Reply to Message](#)

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
> 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

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

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
> 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

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

[View Forum Message](#) <> [Reply to Message](#)

jschwab@gmail.com wrote:

> 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
>> 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
>
> Or, even better, just use interpol.
>

```
> if
> array = [a, b, c, b, a]
> then
> output = interpol(array, 9)
```

kudos for the oneliner!

Paolo

```
> is your desired result
>
> Josiah
```

Subject: Re: array problems

Posted by [Bob\[3\]](#) on Mon, 14 Jul 2008 15:16:58 GMT

[View Forum Message](#) <> [Reply to Message](#)

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:
```

```
>
```

```
>> 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
```

```
>
```

```
> Or, even better, just use interpol.
```

```
>
```

```
> if
```

```
> array = [a, b, c, b, a]
```

```
> then
```

```
> output = interpol(array, 9)
```

```
> is your desired result
```

```
>
```

```
> 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

[View Forum Message](#) <> [Reply to Message](#)

Great - this is an elegant solution...

Thanks!

"Bob Crawford" <Snowman42@gmail.com> wrote in message
news:8d9523e8-2690-4408-89fb-3f2caed198be@25g2000hsx.google.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:

>

>> 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

>

> Or, even better, just use interpol.

>

> if

> array = [a, b, c, b, a]

> then

> output = interpol(array, 9)

> is your desired result

>

> Josiah

Don't forget to add in the first and last elements.

output2 = [output[0]/2, output, output[0]/2] - or similar.
