Subject: Re: help on creating a mean array of data
Posted by Benjamin Hornberger on Fri, 21 Oct 2005 18:11:41 GMT
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pimpk24@hotmail.com wrote:
> hello, iam very new to idl and would appreciate any help anyone could
> give on performing the following task:
>
> I have a large array of data which is meteorological data from multiple
> days. The data for each day is consistent (i.e. same amount) and i need
> a program that can average each kind of data
>
> For example, I have something like the following:
>
> day a :
> temp-1
> temp-2
> temp-3
>
> day b :
> temp-1
> temp-2
> temp-3
>
>
>
>
>
> and I need the following:
>
> day a+b:
> temp-1
> temp-2
> temp-3
>
>
> thanks for any feedback
>

If you have one array which looks like

t = [dayA_t1, dayA_t2, dayA_t3, dayB_t1, dayB_t2, dayB_t3]

you can do the following

;; turn array into a 2-dimensional array with one day per row
;; and one temperature per column
t = reform(t, n_temps, n_days, /overwrite)

;; calculate daily average for each temperature. total(.., 2)
;; will sum over the 2nd dimension (sum up all days),
;; then divide by the number of days.
t_avg = total(t, 2) / n_days

Good luck,
Benjamin

Subject: Re: help on creating a mean array of data
Posted by news.qwest.net on Fri, 21 Oct 2005 18:13:16 GMT
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<pimpk24@hotmail.com> wrote in message
news:1129917339.727669.218770@g49g2000cwa.googlegroups.com.. .
> hello, iam very new to idl and would appreciate any help anyone could
> give on performing the following task:
>
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> days. The data for each day is consistent (i.e. same amount) and i need
> a program that can average each kind of data

Simple case:
meanab = (daya+dayb)/2

Also a more general approach that you can apply to an arbitrary
amount of data is as follows: it uses total().

Arrays are rows in idl, so transpose them into columns,
and concatenate.
Make a matrix of data. Arrays are rows in idl, so transpose them
into columns, and concatenate.
IDL> matrix = [transpose(a),transpose(b)]
then total along the rows
IDL> sum = total(matrix,1)
then divide by the number of columns
IDL> ncol = (size(matrix,/dim))[0]
where I've taken the first element of the array returned by size()
IDL> meanab = sum/ncol

For more than 2 days, you can concatenate many rows into the array "matrix".
There are many other ways as well. You may want to look into the rebin()
function.

Cheers,
bob

Subject: Re: help on creating a mean array of data
Posted by Rick Towler on Mon, 24 Oct 2005 18:09:00 GMT
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pimpk24@hotmail.com wrote:
> perhaps my original post was a little misleading and oversimplified.
> but what iam dealing with are several large '.dat' file in which there
> are multiple columns and number of rows of data varies with each file.
> Also each 'day' of data is not physcially seperated. perhaps this is
> better this is a better representation:
>
> temp1a dewp1a pressure1a *where 1,2,3 etc represent data at
> different levels in
> temp2a dewp2a pressure2a the atmosphere and a,b,c etc
> represent different days
> temp3a dewp3a pressure 3a
> temp1b dewp2b pressure 1b
> temp2b dewp2b pressure 2b
> temp3b dewp3b pressure 3b

> the number of columns of data in each file is standard but the number
> of columns is not known and can vary.

Ummm. Did you mean the # of *rows* can vary? Or do you mean that there can be any number of columns between files, but within a file the # of columns is fixed? I'm assuming you mean rows...

> Hence would i still be able to
> use the matrix approach you described along with something like a
> 'while(eof)' loop? Or should i take an altogether different approach?

Both would work. You can use the FILE_LINES function to determine the # of rows and then use the matrix approach. Or you can used a while (not eof()) loop and process the file line by line. I generally do the former when my data is arranged logically in the file, or the latter when data is "mixed-up" and I want to re-arrange it in memory.

In your case, I would probably use the while loop and calculate the mean as I was reading in data.

-Rick