Subject: index arrays of structures
Posted by raghuram on Sat, 15 Mar 2008 20:53:47 GMT
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Hi,

With reference to my recent posting (IDL batch indexing), i understood that i could structures. However, i haven't been able to figure out one step.

Here is my code as of now:
; I want to search for all the images(files) in the directory trials, read them into the structure named data, and access each file within the structure.

```
pro strcutres
dir1='D:\trials'
cd,dir1
files=FILE_SEARCH('*[^\.{hdr}]', /QUOTE,count=numfiles)
i=0
while i lt numfiles do begin
named=files(i)
print,named
data={ID:'a',sizes:fltarr(2179,761)}
data=replicate(data,numfiles)
data.sizes=findgen(numfiles)
openr,1,named
readu,1,data[i].sizes
close,1
i=i+1
endwhile
end
```

ERROR message- READU: Expression must be named variable in this context: <FLOAT Array[2179, 761]>.

I am getting the error here because it seems like i am not able to read in the LUN 1 or named, into data[i].sizes.

Where am i going wrong ?

Raghu

Subject: Re: index arrays of structures
Posted by raghuram on Sun, 16 Mar 2008 19:19:00 GMT
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On Mar 16, 5:49 am, Vince Hradil <hrad...@yahoo.com> wrote:
> Raghu wrote:

>>> On Mar 15, 4:07 pm, Vince Hradil <hrad...@yahoo.com> wrote:
>
>>>> On Mar 15, 3:53 pm, Raghu <raghuram.narasim...@gmail.com> wrote:
>
>>>> > Hi,
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>>>> > that i could structures. However, i haven't been able to figure out
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>>>> > Where am i going wrong ?
>
>>>> > Raghu
>
>>>> Hoo boy - here you go.
>

>>>> 1-Yes, you need to use a named variable to readu
>>>> 2-You already defined "sizes" (weird name, by the way, how about
>>>> "values"), when you made the structure.
>
>>>> How about this:
>
>>>> pro strcutres
>>>> dir1='D:\trials'
>>>> cd,dir1
>>>> files=FILE_SEARCH('*[^\.{hdr}]', /QUOTE,count=numfiles)
>
>>>> data={ID:'a',values:fltarr(2179,761)}
>>>> data=replicate(data,numfiles)
>>>> tempval = fltarr(2179,761)
>
>>>> for i=0L, numfiles-1 do begin
>>>> named=files(i)
>>>> print,named
>
>>>> openr,1,named
>>>> readu,1,tempval
>>>> free_lun,1
>>>> data[i].values = tempval
>
>>>> endfor
>
>>>> return
>>>> end
>

>>> all the data.id's = 'a'.
>

>>> structure to contain the filename then add data[i].id = named inside
>>> the loop.- Hide quoted text -
>
>>> - Show quoted text -
>
>> Hi,
>
>> Are you asking why i'm using structures in the first place ?
>> If yes, my initial idea (from python lessons) was to create something
>> like an empty array and then read in each file into this empty array
>> by concatenation. That way each element would have a unique ID which i
>> could use to access them.
>> But it seems like i can't create an empty 2-d array of a certain size
>> and number of files to be read ('numfiles' in my case).
>> When you say create a matrix, is this what you meant ?

>
>> I got the idea of using structures only from responses in my previous
>> emails on 'batch indexing'.
>
>> -R
>
> I guess I'm still confused. I was suggesting just doing:
> data = fltarr(nx,ny,numfiles)
>
> then for each files[i] the image is data[*,*,i]
>
> It's unique simply by the index.- Hide quoted text -
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Hi Vince,

I combined the ideas and it seems to have worked.
The file_search method is storing the filenames in a string array. So,
if i read them all one by one into data[*,*,numfiles-1], it is
placing each files[i] into the corresponding location in data[*,*,i].
This way i am able to access each file, and then compute the mean, for
e.g.

Here's the code:

```
pro structures_simple

dir1='D:\trials'
cd,dir1
files=FILE_SEARCH('*[^\.{hdr}]', /QUOTE,count=numfiles)
print,files
print,numfiles

data=fltarr(2179,761,numfiles)

tempval = fltarr(2179,761)
for i=0L, numfiles-1 do begin
named=files(i)

openr,1,named
readu,1,tempval
close,1
data[*,*,i]=tempval
avg=mean(data[*,*,i],/nan)
print,avg
help,data[*,*,i]
endfor
```

return

end

What do you think ?

-Raghu

Subject: Re: index arrays of structures
Posted by Vince Hradil on Sun, 16 Mar 2008 19:29:43 GMT
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Raghu wrote:
> On Mar 16, 5:49 am, Vince Hradil <hrad...@yahoo.com> wrote:
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>>>> > print,named
>>
>>>> > openr,1,named
>>>> > readu,1,tempval
>>>> > free_lun,1
>>>> > data[i].values = tempval
>>
>>>> > endfor
>>
>>>> > return
>>>> > end
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> print,files
> print,numfiles

>
> data=fltarr(2179,761,numfiles)
>
> tempval = fltarr(2179,761)
> for i=0L, numfiles-1 do begin
> named=files(i)
>
> openr,1,named
> readu,1,tempval
> close,1
> data[*,*,i]=tempval
> avg=mean(data[*,*,i],/nan)
> print,avg
> help,data[*,*,i]
> endfor
>
> return
>
> end
>
> What do you think ?
>
> -Raghu

Yes. That's what kind of what I was thinking. Of course, if you just want the average, then there is no need to use the nx by ny by numfiles array, just the tempval.

```
tempval = fltarr(nx,ny,/nozero)
for i=0l, numfiles-1 do begin
openr, lun, files[i], /get_lun
readu, lun, tempval
free_lun, lun
print, files[i], ' ', mean(tempval,/nan)
endfor
```

Subject: Re: index arrays of structures
Posted by R.Bauer on Mon, 17 Mar 2008 14:44:07 GMT
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Raghu schrieb:
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>
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> that i could structures. However, i haven't been able to figure out
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> Here is my code as of now:
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> data.sizes=findgen(numfiles)
> openr,1,named
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> i=i+1
> endwhile
> end
>
> ERROR message- READU: Expression must be named variable in this
> context: <FLOAT Array[2179, 761]>.
>
> I am getting the error here because it seems like i am not able to
> read in the LUN 1 or named, into data[i].sizes.
>
> Where am i going wrong ?
>
> Raghu

Have to say first that is not a solution for your current problem. But
sometimes you like to know about this too

You can directly read into pointers
this examples assumes files of equal filesize (it reads now only one
file, but you can use [i] for [0])

```
a={data:replicate(ptr_new(bytarr(20996)),4)}
openr,lun,'example.bin',/get
readu,lun,*(a.data)[0]
free_lun,lun

print, (*(a.data)[0])[0:10] ; prints the first bytes
```

You can make the structure more complex if you have to read for example
records of byte, float and other types. Then you have to define a
structure with placeholders for these types. You can replicate this
structure to the number of records. And then the whole file could be
read at once.

cheers
Reimar

Subject: Re: index arrays of structures
Posted by David Fanning on Mon, 17 Mar 2008 15:03:48 GMT
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Reimar Bauer writes:

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>
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With all due respect to Reimar, this is NOT the kind
of thing you should be laying on a guy who is struggling
to understand the basics of programming! Give the
guy a break. Simple, simple, simple. He can learn the
rest later. :-)

Cheers,

David
--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.

Subject: Re: index arrays of structures
Posted by raghuram on Mon, 17 Mar 2008 16:29:55 GMT
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On Mar 17, 8:03 am, David Fanning <n...@dfanning.com> wrote:
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> to understand the basics of programming! Give the
> guy a break. Simple, simple, simple. He can learn the
> rest later. :-)
>
> Cheers,
>
> David
> --
> David Fanning, Ph.D.
> Fanning Software Consulting, Inc.
> Coyote's Guide to IDL Programming:http://www.dfanning.com/
> Sepore ma de ni thui. ("Perhaps thou speakest truth.")- Hide quoted text -
>
> - Show quoted text -

Well,

The only way i am going to look at this is that there are many possible solutions to a problem, some simple and some complicated. True. I am new to programming and am still learning. This is a good chance for me to learn about structures,pointers, automation etc. and relate them to my work. I would never learn to use these concepts unless i apply them somewhere. As long as i learn something new everyday, i'm adding something. Thats what matters. Thanks for all your replies and suggestions. I will try them all, understand them, and use them such that the code works.

Thanks,
Raghu

Subject: Re: index arrays of structures
Posted by R.G. Stockwell on Mon, 17 Mar 2008 17:57:03 GMT
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"Raghu" <raghuram.narasimhan@gmail.com> wrote in message
news:3db3001e-8c15-45a8-814c-9ffc92f43df8@e10g2000prf.google groups.com...
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> data=replicate(data,numfiles)
> data.sizes=findgen(numfiles)
> openr,1,named
> readu,1,data[i].sizes
> close,1
> i=i+1
> endwhile

> end
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> ERROR message- READU: Expression must be named variable in this
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> I am getting the error here because it seems like i am not able to
> read in the LUN 1 or named, into data[i].sizes.
>
> Where am i going wrong ?
>
> Raghu

I'm not sure if it has been explained, but your error message
is telling you that readu,1,data[i].sizes does now work,
because data[i].sizes is an expression. It is similar to
readu,1,x + 4
or
readu, 1, abs(array)

in that IDL executes the data[i].sizes almost like it was a
function, and it returns the array you request (i.e. the 'sizes'
field of the fourth element of the data array).

Just read it directly into an array, the assign the array to the
structure in a second line.

The fact that your filename is called "named" and the error message
says you need a "named array" is just a coincedence.

ALSO, look at the line:
data.sizes=findgen(numfiles)

I am not sure this is doing what you want it to do.

Cheers,
bob

Subject: Re: index arrays of structures
Posted by raghuram on Mon, 17 Mar 2008 20:31:53 GMT
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On Mar 17, 10:57 am, "R.G. Stockwell" <notha...@noemail.com> wrote:
> "Raghu" <raghuram.narasim...@gmail.com> wrote in message
>

> news:3db3001e-8c15-45a8-814c-9ffc92f43df8@e10g2000prf.google groups.com...
>
>
>
>
>
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>
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>> that i could structures. However, i haven't been able to figure out
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> data.sizes=findgen(numfiles)
>
> I am not sure this is doing what you want it to do.
>
> Cheers,
> bob- Hide quoted text -
>
> - Show quoted text -

Hi,

Yea, the findgen statement is not doing anything. Initially, i thought
i'd use that to generate an array of the number of files i need. But
it assigns values to it and i don't want that. I wanted something like
an empty list.
Thanks for the explaination of the named variable. I'm clear now.

Raghu
