Subject: Re: Passing variables
Posted by Conor on Thu, 23 Aug 2007 13:34:42 GMT
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On Aug 22, 4:07 pm, jeffw...@hotmail.com wrote:
> I am having an issue passing variables from one program to another.
>
> I have a main program with a gigantic for loop. Each time through the
> loop there is a different value from a "B" array. Inside the loop I
> use rk4 to create fieldlines, with the derivatives ("dydx") calculated
> in another program. rk4 only allows you to give it a vector (say
> Xo,Yo) and it gives you back another vector (say X1,Y1). But I need,
> somehow to pass the value from my "B" array to the second program (the
> one that returns the "dydx").
>
> I tried putting a procedure in the middle of my main program along the
> lines of:
>
> pro getb,dummy
> return, [B(n)]
> end
>
> and then in the dydx program had a line with:
>
> myB = getb(0)
>
> But that didn't seem to work. Does anyone know an easy way to pass
> this B variable into this second program?
>
> Thanks.

The easiest way is typically to use a common block. At the start of
everyone program that want to access some variables, put a line like
this:

common, block_name, variable1, variable2, ...

A couple rules about common blocks:

1) The names of the variables don't have to be the same in every
program.
2) The number of variables matter. All common blocks should have the
same number of variables.
3) The positions of the variables matter. Since names don't matter,
the first variable in one program will always be the same as the first
variable in another program, even if they have much different names
4) Common blocks last until you quit IDL. If you declare it once, it
stays declared.

5) Common blocks can't be extended. This means that if you create a common block and later realize you need to add more variables to it, you'll have to quit IDL (or type .reset) in order to "destroy" the common block.

For more on common blocks, see the online_help

Your getb program doesn't work for two reasons. First, you have a bug. I suspect you meant to say:

```
pro getb,n
return, [B(n)]
end
```

or:

```
pro getb,dummy
return, [B(dummy)]
end
```

Also, it doesn't work because of variable scope. A sub-routine automatically runs in it's own 'scope' which means that it can only access variables it has been passed directly, it has created itself, or that it retrieves from a common block. In the case above the 'B' variable meets none of those criteria and is inaccessible to your getb function. You could make this work anyway, using the scope_varfetch function, but you are much better off using a common block, especially since usage of scope_varfetch should be avoided.

Subject: Re: Passing variables
Posted by David Fanning on Thu, 23 Aug 2007 13:43:03 GMT
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Conor writes:

> You could make this work anyway, using the scope_varfetch
> function, but you are much better off using a common block, especially
> since usage of scope_varfetch should be avoided.

By amateurs, you mean. :-)

Cheers,

David
--
David Fanning, Ph.D.

Subject: Re: Passing variables
Posted by jeffwax1 on Thu, 23 Aug 2007 15:33:52 GMT
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> The easiest way is typically to use a common block. At the start of
> everyone program that want to access some variables, put a line like
> this:
>
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> stays declared.
> 5) Common blocks can't be extended. This means that if you create a
> common block and later realize you need to add more variables to it,
> you'll have to quit IDL (or type .reset) in order to "destroy" the
> common block.

In the help files the only examples I see of common blocks are inside procedures. Can I put them inside a function, or even my main program? I tried putting:

common, share, B

in both my main program and the program with the function I'm using, and both came back as syntax errors.

On second thought, after trying to answer my own program, I made a test program along the lines of:

pro test
common, share, A

...

end

IDL is insisting that the "common,share,A" is a syntax error.

Subject: Re: Passing variables
Posted by Conor on Thu, 23 Aug 2007 15:39:24 GMT
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On Aug 23, 11:33 am, jeffw...@hotmail.com wrote:
>> The easiest way is typically to use a common block. At the start of
>> everyone program that want to access some variables, put a line like
>> this:
>
>> common, block_name, variable1, variable2, ...
>
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>> common block and later realize you need to add more variables to it,
>> you'll have to quit IDL (or type .reset) in order to "destroy" the
>> common block.
>
> In the help files the only examples I see of common blocks are inside
> procedures. Can I put them inside a function, or even my main
> program? I tried putting:
>
> common, share, B
>
> in both my main program and the program with the function I'm using,
> and both came back as syntax errors.
>
> On second thought, after trying to answer my own program, I made a
> test program along the lines of:
>

> pro test
> common, share, A
>
> ...
>
> end
>
> IDL is insisting that the "common,share,A" is a syntax error.

Oops! Sorry, that's my mistake (I only use common blocks
occasionally). The exact syntax is:

common share,A

Subject: Re: Passing variables
Posted by jeffwax1 on Thu, 23 Aug 2007 15:55:22 GMT
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On Aug 23, 10:39 am, Conor <cmanc...@gmail.com> wrote:
> On Aug 23, 11:33 am, jeffw...@hotmail.com wrote:
>
>
>
>>> The easiest way is typically to use a common block. At the start of
>>> everyone program that want to access some variables, put a line like
>>> this:
>
>>> common, block_name, variable1, variable2, ...
>
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>> In the help files the only examples I see of common blocks are inside
>> procedures. Can I put them inside a function, or even my main

>> program? I tried putting:
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>
>> in both my main program and the program with the function I'm using,
>> and both came back as syntax errors.
>
>> On second thought, after trying to answer my own program, I made a
>> test program along the lines of:
>
>> pro test
>> common, share, A
>
>> ...
>
>> end
>
>> IDL is insisting that the "common,share,A" is a syntax error.
>
> Oops! Sorry, that's my mistake (I only use common blocks
> occasionally). The exact syntax is:
>
> common share,A

Yeah, just figured out it was a mistake with excess commas. With the
fix it did work. Thanks.

Subject: Re: Passing variables
Posted by David Fanning on Thu, 23 Aug 2007 15:59:29 GMT
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jeffwax1@hotmail.com writes:

> In the help files the only examples I see of common blocks are inside
> procedures. Can I put them inside a function, or even my main
> program?

You can put them wherever you like. A function in IDL
is just a procedure that returns a specific value. Other
than that, they are identical in functionality, including
how you pass data into and out of them, etc.

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/