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Subject: STATIC VARIABLES

Posted by [sims](#) on Thu, 18 Aug 1994 15:46:58 GMT

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I wanted to know if anyone has used static type variables in IDL functions and if so how.

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Subject: Re: static variables

Posted by [Eric Deutsch](#) on Mon, 30 Sep 1996 07:00:00 GMT

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Esfandiar Bandari wrote:

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> Hi:

> I am newcomer to idl and this news group! I was wondering if  
> there is any clean way of having static variables inside files or  
> functions (as in C or C++). These are variables that keep their value  
> from function call to function call and are local to the function.

I think your only option is to use common blocks. e.g.:

```
function calc1,var1,var2
  common COM_CALC1,var3,var4
  if (n_elements(var3) eq 0) then var3=0.0
  if (n_elements(var4) eq 0) then var4=50.0
  if (n_elements(var2) ne 0) then var4=var2
  print,var3
  var3=var3+1
  return,var1*var2*var3
end
```

If calc1 is the only function that ever uses the common block COM\_CALC1 then, var3,var4 work essentially like static variables. Note that there is

the option of other functions/procedures also using this common block which then makes var3,var4 a little bit more like C global variables.

Also, IDL won't let you stuff var1,var2 into a common block. In the needlessly-complicated example above, the function automatically starts counting the number of times it gets called in an IDL session, and var4 can be specified in the function call, or if left unspecified in the function call, takes on the value from the previous call (or the default of 50.0)

hope this helps,  
Eric



stuff.

(Programmers often store a structure of "state" variables in a parent widget's uvalue. It's a very convenient method as a widget's uvalue stays alive (and just the way you left it) as long as the widget is alive, and the ID of the parent widget is available in "event.top", where "event" is a scalar structure variable which is automatically passed to your event handler. You could even store your state in one of the "child widgets" of the parent - check out /CHILD and /SIBLING under WIDGET\_INFO(), and have a look at some of the "CW\_\*.PRO" programs in the IDL distribution. Handles work similarly, except that you have to keep track of handle IDs on your own.)

Just a last note on handles and widget uvalues:

These work similarly to C pointers (pointers to anything). The difference is that you can't reference things indirectly - you have to actually retrieve the stuff pointed to first, before you can work with it. There are two ways to retrieve. The standard way (no special switches) COPIES stuff from the pointer, leaving the pointer still pointing to a copy of its own; if you change the stuff then you have to put it back to "update" the pointer's copy. The efficient way involves the use of the /NO\_COPY keyword - it leaves the pointer pointing to nothing, and you always have to replace the stuff when you're finished working with it.

(The "efficient" way doesn't incur wastage of memory due to extra copies of variables - something which can become an issue in IDL programs.)

I hope this all makes sense to you.

Peter Mason

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Subject: Re: static variables

Posted by [peter](#) on Wed, 30 Apr 1997 07:00:00 GMT

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Jonathan Rogness (rogness@sg1.cr.usgs.gov) wrote:

: Sorry to answer my own question, but I had forgotten IDL supports global  
: variables using Common Blocks. All my training as a programmer tells me  
: not to use global vars, but if it works then I guess I can deal with it.  
: :-)

Well, you're in luck! Variables in common blocks are not global, merely static; they have scope only over the functions in which the common block is declared. This is true even for the main level, the common block has to be declared there for the variables to exist. In general, the same name can be reused inside different common blocks, provided they aren't both used in the same namespace.

Peter

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Subject: Re: static variables

Posted by [Jonathan Rogness](#) on Wed, 30 Apr 1997 07:00:00 GMT

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Sorry to answer my own question, but I had forgotten IDL supports global variables using Common Blocks. All my training as a programmer tells me not to use global vars, but if it works then I guess I can deal with it.  
:-)

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