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Subject: Re: Keyword discrimination

Posted by [davidf](#) on Wed, 12 Aug 1998 07:00:00 GMT

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Imanol Echave (ccaeccai@sc.ehu.es) writes:

> The question is: How to discriminate between a keyword not set and a keyword  
> set to an undefined variable? N\_ELEMENTS returns 0 in the two cases.

Don't even get me started about IDL routines with misleading names... :-)

You are correct. It is IMPOSSIBLE, using N\_ELEMENTS (or KEYWORD\_SET, for that matter), to distinguish between keywords that are unused and keywords that are set to an undefined variable.

But sometimes you clearly want to. For example, you would like an output keyword to contain the results of some time-consuming calculation, but you don't want to DO the calculation unless the caller of the routine requests the result. You would like to know if the caller of the function USED the keyword.

Neither N\_ELEMENTS or KEYWORD\_SET can furnish this information reliably. To address this issue, RSI introduced the ARG\_PRESENT function, which \*almost\* does what you want it to do. It can tell you if a "passed by reference" variable exists in a program.

To understand this, suppose I have a procedure defined like this:

```
PRO JUNK, DO_CALC=doit
IF ARG_PRESENT(doit) THEN doit = Big_Calculation()
END
```

This will work reliably if I call the function like this  
(where XX is an undefined variable):

```
IDL> JUNK, DO_CALC=xx
```

It will fail if I call the function like this:

```
IDL> JUNK, /DO_IT
```

Here the variable argument "doit" is certainly \*present\* in my procedure (it has the value of 1), but the ARG\_PRESENT function returns 0 because the variable exists in a "passed by value" form, not a "passed by reference" form.

Given the limitations of each of these functions, it is usually possible to work something out in your program, often by using plenty of IF statements. :-)

Cheers,

David

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