Subject: Re: Another IDL twist
Posted by Liam Gumley on Fri, 17 Dec 1999 08:00:00 GMT
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Ben Tupper wrote:
> I don't know why, but I do know it drove me bananas. I wrote the
> following as a wrapper for most of the READ_* procedures. It is in the
> form of a FUNCTION rather than PROCEDURE. I've only tried it on TIFF,
> JPEG and GIF so far. If you try and have suggestions, please send them
> along.

I'm guessing that most people who read TIFF, JPEG, and GIF images from disk actually want to *display* the images in IDL. Hence, I wrote a procedure which makes it rather easy.

SHOWIMAGE displays images in GIF, BMP, PICT, TIFF, or JPEG format (the format is detected automatically), e.g.

IDL> file = filepath('rose.jpg', subdir='examples/data')
IDL> showimage, file

Check it out at:
http://cimss.ssec.wisc.edu/~gumley/imagetools.html

Note that IDL 5.2 is required, to allow automatic detection of image format (i.e. the query_gif, query_bmp etc. functions in IDL 5.2 are used).

Cheers,
Liam.

--
Liam E. Gumley
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Subject: Re: Another IDL twist
Posted by Ben Tupper on Fri, 17 Dec 1999 08:00:00 GMT
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edward.s.meinel@aero.org wrote:

> Does anyone know the rhyme or reason for the calling methods for the
> built-in IDL READ_* procedures? Sometimes it is:
>

I don't know why, but I do know it drove me bananas. I wrote the

following as a wrapper for most of the READ_* procedures. It is in the form of a FUNCTION rather than PROCEDURE. I've only tried it on TIFF, JPEG and GIF so far. If you try and have suggestions, please send them along.

Thanks,

Ben

```
;+
; NAME:
; ReadImage
;
; PURPOSE:
; This function returns the 2 or 3 plane image specified by the file
keyword.
; The utility of this function is that the user doesn't need to remember
which
; image reading procedures are actually fumctions.  The user can
optionally
; query the image only, or return the query structure and the image.
The _extra
; keyword is applied each of the apllicable image input procedures that
have keywords.
;
; CATEGORY:
; Input/Output
;
; CALLING SEQUENCE:
; Result = ReadImage()
;
;
; INPUTS:
; All inputs are optional keywords.  If file is not specified the user
is prompted to selected one
;
;
; KEYWORD PARAMETERS:
; File: A string specifying the location of the image.  If not provided,
the user
;  is prompted to select a file.
; Query:  Set this keyword to a named vaiable that, on output, will
contain the info
;  structure retruned from the QUERY_IMAGE fucntion.
; JustQuery:  Set this keyword to a non zero scalar to simply return the
Query structure.
;  In this case, Image is returned as -1.
```

; Red, Green ,Blue: Set these keywords to named variables that, on output, contain
; the red, green and blue color vectors stored with the image. If the image
; has no color vectors stored these values are undefined.
; ColorTable: Set this keyword to a named varaible that, on output contains the
; the 3,n color table array. This feature is available for JPEG images only. If the image
; have a defined colortable stored, this value is undefined.
; _Extra: This keyword allows the user to set any of the many different keywords
; for each image type. See documentation fpor each image type for keywords
; that can be passed.
; Cancel: This keyword is set to 1 if the user cancels the dialog_pickfile prompted, it is set to
; 0 (zero) otherwise.
;
; OUTPUTS:
; The ReadImage function returns the image specified by the file keyword. If the JUSTQUERY
; keyword is set, the user cancels the Dialog_PickFIle prompted, or an error occurs then
; the fucntion returns -1.
;
;
; COMMON BLOCKS:
; None.
;
; SIDE EFFECTS:
; None known.
;
; RESTRICTIONS:
; Requires the function ParseFileName.
;
; EXAMPLE:
; The following returns the image 'c:/images/image.tif', the red, green, and blue
; color tables associated with the image (if any.) Also returned are the GeoTiff structure
; (if the image is GeoTiff format) and the Info Structure returned by the
; function QUERY_TIFF.
;
; Result = ReadImage(File='c:/images/image.tif', Red = Red, Green = Green, Blue = Blue,$
; Query= Query, GeoTiff = GeoTiff)

```
;
; MODIFICATION HISTORY:
;  Written by: Ben Tupper  26 SEP 99
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; email pemaquidriver@tidewater.net
; tel:  (207) 563 - 1048
;   248 Lower Round Pond Road
; POB 106
; Bristol, ME 04539-0106
;
;
;-



FUNCTION ReadImage, File=File, $
 Query = Query, _Extra = _Extra, $
 Red=Red, Green = Green, Blue = Blue, ColorTable = ColorTable,$
 JustQuery = JustQuery, cancel = cancel

Image = -1
Query = -1
Cancel = 1

If n_elements(JustQuery) EQ 0 Then JustQuery = 0
if n_elements(File) EQ 0 Then File = Dialog_PickFile()

if File EQ '' Then Begin
 Return, Image
EndIf



FileName = StrLowCase(ParseFileName(File[0]))

Extension = FileName[2]

Case Extension of

 'bmp':  Result = Query_BMP(File, Query)
 'dcm':  Result = Query_DICOM(File, Query)
 'gif':  Result = Query_GIF(FIle, Query)
 'jpg':  Result = Query_JPEG(File,Query)
 'pic': Result = Query_PICT(FIle, Query)
 'png': Result = Query_PNG(FIle, Query)
 'ppm': Result = Query_PPM(File,Query)
 'pgm':  Result = Query_PPM(File,Query)
```

```
 'srf': Result = Query_SRF(File, Query)
 'tif':  Result = Query_TIFF(File,Query)

EndCase

If Result EQ 0 Then Return, Image

Cancel = 0

If (JustQuery NE 0) Then Begin
 Return, Image
EndIf


Case Extension of

 'bmp':  Image = Read_BMP(File, Red, Green, Blue,Ihdr,_Extra = _Extra)
 'dcm':  Image = Read_DICOM(File, Red,Green,Blue, _Extra=_Extra)
 'gif':  Read_GIF,FIle, Image, Red,Green,Blue, _Extra=_Extra
 'jpg':  Read_JPEG,File,Image, ColorTable, _Extra=_Extra
 'pic': Read_PICT, FIle, Image, Red, Green, Blue
 'png': Image = Read_PNG(FIle, Red, Green, Blue, _Extra=_Extra)
 'ppm': Read_PPM, File,Image, _Extra=_Extra
 'pgm':  Read_PPM, File,Image, _Extra=_Extra
 'srf': Read_SRF, File, Image, Red, Green, Blue
 'tif':  Image  = Read_TIFF(File,Red, Green, Blue, _Extra=_Extra)

EndCase

Cancel = 0

Return, Image

End
```

--
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