

## Subject: Re: Recursion in IDL

Posted by [zawodny](#) on Tue, 06 Apr 1993 16:08:01 GMT

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In article <sterner.733762629@warper.jhuapl.edu> sterner@warper.jhuapl.edu (Ray Sterner) writes:

- > One of the least used features of IDL may be recursion. But it's there and works very well.

>

> ...

>

> Ray Sterner sterner@tesla.jhuapl.edu

I agree and wish to post a routine that draws "directory trees" and demonstrates recursion. This routine SPAWNs a lot of child processes and may not be the best way to do this, but it does work.

(there will be a .sig file at the end as well)

```
pro TREE,curdir,maxlevel=maxlevel,file=file $  
,level=level,flag=flag,tab=tab,stat=stat  
:+  
; NAME: TREE  
;  
; PURPOSE: Draws a subdirectory tree on UNIX systems  
;  
; CATEGORY: Stuff that noone ever bothers to write  
;  
; CALLING SEQUENCE:  
; TREE [,dname,maxlevel=n,file= fname]  
;  
; INPUTS: All inputs are optional  
; CURDIR String variable containing the name of the directory  
; at the root of the tree. (Defaults to '~')  
; KEYWORDS:  
; MAXLEVEL Integer indicating the number of levels of  
; subdirectories to display. (Default is to search to  
; a depth of 10 {this is done to avoid infinite loops})  
; Existance of subdirectories beyond MAXLEVEL are  
; indicated by '-->'.  
;  
; FILE String variable specifying the output file name.  
; Special case use of /FILE causes output to go to a file  
; named 'tree.out'. (Default is to output to the screen)  
;  
; **** Other Keywords are used to pass data recursively and are, therefore,  
; for internal use only and should NOT be utilized by the user.
```

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; OUTPUTS:
; May output to either the screen or a file.
;
; COMMON BLOCKS: None
;
; SIDE EFFECTS: None
;
; RESTRICTIONS:
; Written to run on UNIX systems
;
; WARNING! Some patches to operating systems (eg. SUN)
; have been found to generate infinite loops. Do not
; make MAXLEVEL large unnecessarily.
;
; Really deep searches (MAXLEVEL large) may trash the
; display when line wrapping is enabled.
;
; PROCEDURE:
; STRAIGHTFORWARD (seems to be the default value of this field).
;
; MODIFICATION HISTORY:
; Written 2/5/93 by J. M. Zawodny, NASA Langley Research Center.
; zawodny@arbd0.larc.nasa.gov
;-
;

; Somethings are only done at the top level
if (n_elements(level) eq 0) then begin

; Set default values
if(n_elements(curd़ir) le 0) then curdir = '~'
if not keyword_set(maxlevel) then maxlevel = 10
level = 0

; Get the starting directory
spawn,'cd '+curdir,list
tab = ' '

; Do we write this to a file
if keyword_set(file) then begin
; Get variable type of file
s = size(file)
; Is file a string?
if(s(1) eq 7) then fname=file else fname='tree.out'
openw,lun,fname,/get_lun
flag = lun
printf,flag,list
endif else begin
flag = 0

```

```

print,list
endelse
endif

; Find out what is in the directory
spawn,'ls -1 -F '+curdir+' | grep "/"',list
if(list(0) eq "") then begin
  stat = 0
  return
endif

; Are we beyond desired depth
if(level ge maxlevel) then begin
  if keyword_set(flag) then printf,flag,tab+'|-->' $
    else print,tab+'|-->'
  stat = -1
  return
endif

; For all subdirectories in this directory
len = n_elements(list)-1
for k=0,len do begin
  name = list(k)
  name = strmid(name,0,strpos(name,'/'))
; Output a line
  if (k ne len) then tb = tab+'|' else tb = tab+' '
  v = tab+'|----'+name
  if keyword_set(flag) then printf,flag,v else print,v

; Recurse through all subdirectory levels
tree,curdir+'/'+name,level=(level+1),maxlevel=maxlevel, $
  flag=flag,tab=tb,stat=stat

if(k ne len) and stat then begin
  tb = tab+'|'
  if keyword_set(flag) then printf,flag,tb $
    else print,tb
endif

endfor
stat = 1

if keyword_set(file) then begin
  close,lun
  free_lun,lun
endif
return
end

```

--  
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