
Subject: Re: pickfile(), but with multiple files?
Posted by [haimov](#) on Sat, 08 Mar 1997 08:00:00 GMT
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In article <332193E9.FF6@kfa-juelich.de>, r.bauer@kfa-juelich.de says...

>
> Slacker wrote:
>>
>> Does this software exist, where I can select more than
>> one file to be stored into an array?
>
> You should use xfiles written by Ray Sterner
> <http://fermi.jhuapl.edu/s1r/idl>
> This is a starting point to his great idl Routines.

While what R. Bauer says is absolutely true and Ray's library is invaluable addition, I believe Peter did a good job with pickfiles. I think RSI should follow on his upgrade and incorporate it in the future.

I downloaded his hacked version and modified it slightly so that it would not interfere with the standard RSI pickfile. I also spent some time to almost fix the pickfile widget display problem when one uses keyword filter, but there are no files that match the filter string. I said almost because, I believe, there are still some bugs that would not allow me to fix it completely.

Attached is the pickfiles modified version.

Cheers, Sam

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```
;+
; NAME:
;    PICKFILES
;
; PURPOSE:
;    This function allows the user to interactively pick one or more
;    file(s). A file selection tool with a graphical user interface
;    is created. Files can be selected and deselected from the
;    current directory or other directories.
;
; CATEGORY:
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; Widgets.

; CALLING SEQUENCE:
; Result = PICKFILES()

; KEYWORD PARAMETERS:

; FILE: (input) A string or string array for setting the initial
; value of the selection. Useful if there is a default file

; GROUP: (input) The widget ID of the widget that calls PICKFILES.
; When this ID is specified, a death of the caller results
; in the death of the PICKFILES widget application.

; READ: (Flag) Set this keyword to make the title of the PICKFILE
; window "Select File(s) to Read".

; WRITE: (Flag) Set this keyword to make the title of the PICKFILE
; window "Select File(s) to Write".

; PATH: (input) The initial path to select files from. If this
; keyword is not set, the current directory is used.

; FILTER: (input) A string value for filtering the files in the
; file list. This keyword is used to reduce the number of
; files to choose from. The user can modify the filter
; unless the FIX_FILTER keyword is set. Example filter
; values might be "*.pro" or "*.dat".

; FIX_FILTER: (Flag) When this keyword is set, only files that
; satisfy the filter can be selected. The user has no
; ability to modify the filter and the filter is not shown.

; TITLE: (input) A scalar string to be used for the window title.
; If it is not specified, the default title is "Select File"

; MUST_EXIST: (Flag) When set, only files that actually exist can
; be selected.

; POSITION: (input) 2-el vector with position of upper left
; corner of the widget base, counted from top left
; screen corner. May be ignored depending on your window
; manager.

; OUTPUTS:
; PICKFILES returns a string or string array that contains the name
; of the file(s) selected. If no file is selected, PICKFILE
; returns a null string.

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;COMMON BLOCKS:  
;    NEWPICKERS: COMMON block that maintains state for the widget.  
  
;SIDE EFFECTS:  
;    This function initiates the XMANAGER if it is not already running.  
  
;RESTRICTIONS:  
;    This routine is known to work on Suns (OPEN LOOK), MIPS, RS/6000,  
;    DEC Ultrix, HP/700, VAX/VMS, SGI and Linux machines.  
  
;    Only one instance of the PICKFILE widget can be running at one time.  
  
;    PICKFILES does not recognize symbolic links to other files in UNIX.  
  
;PROCEDURE:  
;    Create and register the widget and then exit, returning the  
;    filename(s) that were picked.  
  
;EXAMPLE:  
;    Create a PICKFILE widget that lets users select only files with  
;    the extensions 'pro' and 'dat'. Use the 'Select File to Read' title  
;    and store the name of the selected file in the variable F. Enter:  
  
;        F = PICKFILES(/READ, FILTER = '*.pro *.dat')  
  
;MODIFICATION HISTORY:  
;    Written by: Steve Richards, April, 1991  
;    July, 1991    Added a FILTER keyword to allow users  
;                  to select files with a given extension or  
;                  extensions.  
;    August, 1991  Fixed bugs caused by differences between  
;                  spawned ls commands on different machines.  
;    September, 1991 Made Myfindfile so only one pass was  
;                  necessary to find files and directories.  
;    3/92 - ACY    Corrected initialization of dirsav, change spawn  
;                  command to "ls -IL" and added case for links  
;                  add NOCONFIRM keyword for auto exiting on selection  
;    8/92 - SMR    Rewrote pickle as a compound widget.  
;    10/92 - SMR   Fixed a bug where extremely large file names didn't  
;                  show up properly in the file list or as return  
;                  values.  
;    12/92 - JWG   Add better machine dependency code  
;    1/93 - JWG   Added FILE, GET_PATH keywords.  
;    1/93 - TAC   Added Windows Common dialog pickle code  
;    2/93 - SMR   Fixed the documentation example for multiple extensions  
;    1/94 - KDB   If directory had no execute permission on Unix  
;                  platforms, CD fails and causes error. Added check
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; for this. Increased spawn speed by using /sh for unix.
; Added -a switch to ls so that all files can be found
; on unix machines.
2/94 - KDB Values passed to CD cannot end in a '\' on DOS
; platforms. Program would crash if the PATH keyword
; was supplied a value that ended with a "\". Added
; a check for this.
3/94 - BMH Deleted the reference here to OS_PICKFILE for the
; Unix platforms and created an IDL routine to
; to call the Mac and Windows specific OS_PICKFILE
; routines. This solved the saving and restoring on
; different platforms problem.
4/94 - KDB The vms call to lib\$findfile in valid_dir was
; commented out. This caused errors when path was
; changed by user. Uncommented. In Valid_Dir, with
; vms the type of directory specification was not
; checked (directory can be a path or a filename):
; Fixed this. In dirlist section of event handler,
; a "[-]" would get trimmed to "" and cause error:
; Fixed.
8/94 - ACY Change the spawn command in getdirs to send error
; output to /dev/null.
12/94 - DJE Fix the FIX_FILTER option for the MacOS.
9/95 - PS change to multifile-selection. Remove keywords
; NOCONFIRM and GET_PATH, which don't have a useful
; meaning any more. Added POSITION Keyword.
4/96 - PS Add Select all button
3/97 - SH Allow the use of RSI picklefile
; Minor widget adjustments

;

;

;

FUNCTION valid_dir, dir

WIDGET_CONTROL, /HOUR

; Can't CD to a directory unless the user has execute permission.
; Use the unix command test to check this. Have to use sh5 on ultrix
; Test sets the shell status variable and echo prints it out. This is
; then captured by spawn and placed in result

IF (!version.os NE 'ultrix') THEN BEGIN
 spawn, ['test -d "+dir +" -a -x "+dir+" ; echo \$?'], result, /sh
ENDIF ELSE BEGIN
 spawn, ['/bin/sh5 -c "test -d "+dir+" -a -x "+dir+\$
 " ";echo \$?'], result, /sh
ENDELSE

```
return, (not fix(result(0)) ) ;convert result to int and NOT it.
```

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END
```

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;-----  
; procedure GETDIR  
;  
; This routine finds the files or directories at the current directory level.  
; It must be called with either files or directories as a keyword.  
;
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```
function getdirs
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WIDGET_CONTROL, /HOUR
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retval = ['..']  
;added -a switch to get .* dirs  
;change to /noshell, send errors to /dev/null  
SPAWN, ["'/bin/sh", "-c", "ls -laL 2>/dev/null"], /NOSHELL, results  
numfound = N_ELEMENTS(results)  
IF(KEYWORD_SET(results)) THEN BEGIN ;extension of ".dir"  
    firsts = STRUPCASE(STRMID(results, 0, 1))  
    dirs = (where(firsts EQ "D", found))  
    IF (found GT 0) THEN BEGIN  
        results = results(dirs)  
        spaceinds = WHERE(BYTE(results(0)) EQ 32)  
        spaceindex = spaceinds(N_ELEMENTS(spaceinds)-1)  
        retval = [retval, STRMID(results, spaceindex + 1, 100)]  
        ;;; get rid of "." and ".." that ls -laL picks up  
        retval = retval(WHERE( (retval ne '.')and(retval ne '..')) )  
    ENDIF  
ENDIF  
RETURN, retval  
END ; function getdirs
```

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;
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```
FUNCTION getfiles, filter
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WIDGET_CONTROL, /HOUR
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SPAWN, ["'/bin/sh", "-c", "ls -laL " + filter + $  
" 2>/dev/null"], results, /NOSHELL ;added -a to get all files
```

```
IF(KEYWORD_SET(results)) THEN BEGIN  
    firsts = STRUPCASE(STRMID(results, 0, 1))  
    fileinds = (WHERE(((firsts EQ "F") OR (firsts EQ "-") OR $
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        (firsts EQ "I")), found))
IF (found GT 0) THEN BEGIN
    results = results(fileinds)
    FOR i=0, N_ELEMENTS(results) - 1 DO BEGIN
        spaceinds = WHERE(BYTE(results(i)) EQ 32)
        spaceindex = spaceinds(N_ELEMENTS(spaceinds) - 1)
        results(i) = STRMID(results(i), spaceindex + 1, 100)
    ENDFOR
    RETURN, results
ENDIF
ENDIF
RETURN, ""
END

;-----
; procedure Pickfiles_ev
;-----
; This procedure processes the events being sent by the XManager.
;-----
PRO Pickfiles_ev, event

COMMON newpickers, pathtxt, filetxt, dirlist, filelist, sel_list, $
ok, cancel, help, here, thefile, separator, selall, swapbutt, swap_dat

WIDGET_CONTROL, filetxt, GET_VALUE = filt
filt = filt(0)

CASE event.id OF

cancel: BEGIN
    thefile = ""
    WIDGET_CONTROL, event.top, /DESTROY
END

filetxt: BEGIN
    files = getfiles(filt)
    WIDGET_CONTROL, filelist, SET_VALUE = files
    WIDGET_CONTROL, filelist, SET_UVALUE = files
END

selall: BEGIN
    WIDGET_CONTROL, filelist, GET_UVALUE = files
    IF (KEYWORD_SET(files)) THEN BEGIN
        thefile = here + files
        WIDGET_CONTROL, sel_list, GET_UVALUE=selectlist
        IF selectlist(0) EQ " THEN BEGIN
            selectlist = thefile
        ENDIF
    ENDIF

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FOR i=0, n_elements(thefile)-1 DO BEGIN
    IF max((selpos=where(strpos(selectlist, thefile(i)) $ 
        GE 0))) LT 0 THEN $
        selectlist = [selectlist, thefile(i)]
    ENDFOR
    WIDGET_CONTROL, sel_list, SET_VALUE=selectlist
    WIDGET_CONTROL, sel_list, SET_UVALUE=selectlist
ENDIF
END

dirlist: BEGIN
    WIDGET_CONTROL, dirlist, GET_UVALUE = directories
    IF (event.index GT N_ELEMENTS(directories) - 1) THEN RETURN

; Check an see if the directory is valid

if(not valid_dir(directories(event.index)) ) then return

IF (!version.os EQ "vms") THEN BEGIN
; Fixed logic error. If the users selects [-], the strpos/mid
; combo would return a null string. Added a check for [-],index=0

    if(event.index eq 0)then $
        found = 3 $ ; len of [-]
    else $
found = STRPOS(directories(event.index), ".", 0)

    CD, STRMID(directories(event.index), 0, found)
    CD, CURRENT = here ;get pwd

ENDIF ELSE IF !version.os EQ 'Win32' THEN BEGIN
    message,"Unsupported on this platform"
ENDIF ELSE BEGIN
    CD, directories(event.index)
    CD, CURRENT = here
    here = here + separator
ENDELSE
WIDGET_CONTROL, pathtxt, SET_VALUE = here
directories = getdirs()
files = getfiles(filt)
WIDGET_CONTROL, filelist, SET_VALUE = files
WIDGET_CONTROL, filelist, SET_UVALUE = files
WIDGET_CONTROL, dirlist, SET_VALUE = directories
WIDGET_CONTROL, dirlist, SET_UVALUE = directories
END

pathtxt: BEGIN

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WIDGET_CONTROL, pathtxt, GET_VALUE = newpath
newpath = newpath(0)
len = STRLEN(newpath) - 1
IF STRPOS(newpath, '/', len) NE -1 THEN $
    newpath = STRMID(newpath, 0, len)
IF (valid_dir(newpath(0))) THEN BEGIN
    here = newpath(0) + separator
    CD, here
    directories = getdirs()
    files = getfiles(filt)
    WIDGET_CONTROL, filelist, SET_VALUE = files
    WIDGET_CONTROL, filelist, SET_UVALUE = files
    WIDGET_CONTROL, dirlist, SET_VALUE = directories
    WIDGET_CONTROL, dirlist, SET_UVALUE = directories
ENDIF ELSE $
    WIDGET_CONTROL, pathtxt, SET_VALUE = here
END

```

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filelist: BEGIN
    WIDGET_CONTROL, filelist, GET_UVALUE = files
    IF (KEYWORD_SET(files)) THEN BEGIN
        thefile = here + files(event.index)
        WIDGET_CONTROL, sel_list, GET_UVALUE=selectlist
        IF selectlist(0) EQ " THEN BEGIN
            selectlist = thefile
            WIDGET_CONTROL, sel_list, SET_VALUE=selectlist
            WIDGET_CONTROL, sel_list, SET_UVALUE=selectlist
        ENDIF
        IF max((selpos=where(strpos(selectlist, thefile) GE 0)) LT 0 THEN BEGIN
            selectlist = [selectlist, thefile]
            WIDGET_CONTROL, sel_list, SET_VALUE=selectlist
            WIDGET_CONTROL, sel_list, SET_UVALUE=selectlist
        ENDIF ELSE BEGIN
            ;; check for substrings
            selpos = selpos(where(selpos GE 0))
            FOR i=0, n_elements(selpos)-1 DO $
                IF thefile EQ selectlist(selpos(i)) THEN GOTO, have_it
            selectlist = [selectlist, thefile]
            WIDGET_CONTROL, sel_list, SET_VALUE=selectlist
            WIDGET_CONTROL, sel_list, SET_UVALUE=selectlist
            Have_it:
        ENDELSE
        WIDGET_CONTROL, ok, GET_UVALUE=auto_exit
        IF (auto_exit) THEN GOTO, checkfile
    ENDIF
END

```

ok: GOTO, checkfile

```

Sel_list: BEGIN
    WIDGET_CONTROL, sel_list, GET_UVALUE=selectlist
    IF (KEYWORD_SET(selectlist)) THEN BEGIN
        thefile = selectlist(event.index)
        nf = n_elements(selectlist)
        CASE event.index OF
            0: BEGIN
                IF nf EQ 1 THEN $
                    selectlist = " "
                ELSE $
                    selectlist = selectlist(1:*)
            END
            nf-1: BEGIN
                IF nf EQ 1 THEN $
                    selectlist = " "
                ELSE $
                    selectlist = selectlist(0:nf-2)
            END
            Else: selectlist = [ selectlist(0:event.index-1), $
                selectlist(event.index+1:*)]
        ENDCASE
        WIDGET_CONTROL, sel_list, SET_VALUE=selectlist
        WIDGET_CONTROL, sel_list, SET_UVALUE=selectlist
    ENDIF
END

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Swapbutt: BEGIN
    widget_control, swapbutt, get_val=butt_stat
    swap_dat = where(['No', 'Yes'] EQ butt_stat)
    swap_dat = swap_dat XOR 1
    widget_control, swapbutt, set_val=(['No', 'Yes'])(swap_dat(0))
END

```

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Help: XDISPLAYFILE, "", $
GROUP=event.top, $
TITLE="File Selection Help", $
WIDTH=50, $
HEIGHT=13, $
TEXT=["
    This file selection widget lets you pick one", $
    "or more files. The files are shown on the right.", $
    "You can select a file by clicking on it with the", $
    "mouse. The selections are shown in the lower", $
    "frame. You can also deselect them there via", $
    "mouseclick. Pressing the 'OK' button will accept", $
    "the choice and the Cancel button will not. To", $
    "move into a subdirectory, click on its name in", $
    "the directory list on the left. The path can", $

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"also be modified to view files from a different", $  

"directory. The list of files can be modified by", $  

"typing in a filter."]

ENDCASE
RETURN

checkfile:
WIDGET_CONTROL, sel_list, GET_UVALUE = temp
WIDGET_CONTROL, cancel, GET_UVALUE = existflag
widget_control, swapbutt, get_val=butt_stat
swap_dat = where(['No', 'Yes'] EQ butt_stat)
IF existflag THEN BEGIN
  ON_IOERROR, print_error
  FOR i=0, n_elements(temp) DO BEGIN
    OPENR, unit, temp(0), /GET_LUN
    FREE_LUN, unit
  ENDFOR
ENDIF
thefile = temp
WIDGET_CONTROL, event.top, /DESTROY
RETURN

print_error:
WIDGET_CONTROL, selecttxt, SET_VALUE = "!!! Invalid File Name !!!"
thefile = ""

END ;===== end of Pickfiles event handling routine task =====

;

;-----  

; function Pickfiles  

;-----  

; This is the actual routine that creates the widget and registers it with the  

; Xmanager. It also determines the operating system and sets the specific  

; file designators for that operating system.  

;-----  

FUNCTION Pickfiles, GROUP=GROUP, PATH=PATH, READ=READ, WRITE=WRITE, $  

  FILTER=FILTER, TITLE=TITLE, MUST_EXIST=MUST_EXIST, $  

  FIX_FILTER=FIX_FILTER, FILE=FILE, $  

  SWAP_DATA=SWAP_DATA, POSITION=pos

COMMON newpickers, pathtxt, filetxt, dirlist, filelist, sel_list, $  

  ok, cancel, help, here, thefile, separator, selall, swapbutt, swap_dat

IF(XRegistered("Pickfiles")) THEN RETURN, 0

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thefile = ""
existflag = 0

separator      = '/'

CD, CURRENT = dirsavE

IF (N_ELEMENTS(PATH) EQ 0) THEN BEGIN
  PATH = dirsavE + separator
  here = PATH
ENDIF ELSE BEGIN
  IF(STRPOS(PATH, separator, STRLEN(PATH)- 1) EQ -1)$
    AND (PATH NE separator)THEN $
    PATH = PATH + separator
  CD, PATH          ;if the user selected
  here = PATH        ;a path then use it
ENDIFELSE

IF (KEYWORD_SET(NOCONFIRM)) THEN auto_exit = 1 ELSE auto_exit = 0
IF (KEYWORD_SET(MUST_EXIST)) THEN existflag = 1 ELSE existflag = 0
IF (KEYWORD_SET(FIX_FILTER)) THEN mapfilter = 0 ELSE mapfilter = 1
IF keyword_set(swap_data) THEN map_swap = 1 ELSE BEGIN
  map_swap = 0
  swap_data = 0
ENDIFELSE
swap_dat = swap_data

IF (N_ELEMENTS(FILE) EQ 0) THEN FILE = ""

IF (NOT (KEYWORD_SET(TITLE))) THEN $           ;build up the title
  TITLE = "Please Select the File(s)"         ;based on the keywords

IF (KEYWORD_SET(READ)) THEN TITLE = TITLE + " for Reading" $
ELSE IF (KEYWORD_SET(WRITE)) THEN TITLE = TITLE + " for Writing"

IF (KEYWORD_SET(FILTER)) THEN filt = FILTER ELSE filt = ""

directories = getdirs()
dirLen=max(strlen(directories))-7 ; -7 I (SH) have no idea what is going on
files = getfiles(filt)           ; but it corrects to some extent
if files(0) eq " then files=' ' ; the problem with xsize in widget_list
filesLen=max(strlen(files))-7   ; -7 like above

version = WIDGET_INFO(/VERSION)
IF (version.style EQ 'Motif') THEN osfrm = 0 ELSE osfrm = 1

Pickfilebase = WIDGET_BASE(TITLE=TITLE, /COLUMN)

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:widebase = widget_label(Pickfilebase, value=title) ; is this really needed
widebase = WIDGET_BASE(Pickfilebase, /ROW)
label    = WIDGET_LABEL(widebase, VALUE="Path:")
pathtxt = WIDGET_TEXT(widebase, VAL=here, /EDIT, FR=osfrm, XS=50)
filtbase = WIDGET_BASE(Pickfilebase, /ROW, MAP=mapfilter)
filtlbl = WIDGET_LABEL(filtbase, VALUE="Filter:")
filttxt = WIDGET_TEXT(filtbase, VAL=filt, /EDIT, XS=10, FR=osfrm)

selections = WIDGET_BASE(Pickfilebase, /ROW, SPACE=30)
dirs     = WIDGET_BASE(selections, /COLUMN, /FRAME)
lbl     = WIDGET_LABEL(dirs, VALUE="Subdirectories      ")
dirlist = WIDGET_LIST(dirs, VALUE=directories, YSIZE=8, $
                      XSIZE=dirlen>12, UVALUE=directories)
fls     = WIDGET_BASE(selections, /COLUMN, /FRAME)
lbl     = WIDGET_LABEL(fls, VALUE="Files      ")
filelist = WIDGET_LIST(fls, VALUE=files, YSIZE=8, $
                       XSIZE=fileslen>12,UVALUE=files)

widebase = WIDGET_BASE(Pickfilebase, /COLUMN) ; , /frame)
label   = WIDGET_LABEL(widebase, VALUE="Selection(s)      ")
sel_list = WIDGET_LIST(widebase, value=file, uval=file, ys=20, $
                      xs=(dirlen+fileslen)>30)
rowbase = widget_base(Pickfilebase, /row, map=map_swap)
label   = widget_label(rowbase, value='Byteswap Image data ?')
swapbutt = widget_button(rowbase, val=['No', 'Yes'])(swap_dat))

rowbase = WIDGET_BASE(Pickfilebase, SPACE=20, /ROW)
ok     = WIDGET_BUTTON(rowbase, VALUE="Ok", xsize=90, $
                      UVALUE=auto_exit)
selall = WIDGET_BUTTON(rowbase, VALUE="Select all", xsize=90)
cancel = WIDGET_BUTTON(rowbase, VALUE="Cancel", xsize=90, $
                      UVALUE=existflag)
help   = WIDGET_BUTTON(rowbase, VALUE="Help", xsize=90)

IF keyword_set(pos) THEN $
  widget_control, Pickfilebase, xoff=pos(0), yoff=pos(1)

WIDGET_CONTROL, Pickfilebase, /REALIZE

XManager, "Pickfiles", Pickfilebase, EVENT_HANDLER="Pickfiles_ev", $
  GROUP_LEADER=GROUP, /MODAL

CD, dirsav
filt = ""
swap_data = swap_dat(0)

RETURN, thefile

```

END ;===== end of Pickfile routine =====
