

File created: 21-May-2024 18:46:31 {LIB}BROWSER.;2

edit by: mth

changes to: (FNS BROWSER.LEFTFN)

previous date: 26-Apr-2023 12:41:36 {LIB}BROWSER.;1

Read Table: INTERLISP

Package: INTERLISP

Format: XCCS

(RPAQQ **BROWSERCOMS**

```
[ (FILES MASTERSCOPE GRAPHER)
  (DECLARE%: EVAL@COMPILE DONTCOPY (FILES (LOADCOMP)
                                           GRAPHER)
    (CONSTANTS (CHANGEDSHADE 8840)))
  (FNS MSPATHS.DISPATCH NUMSPATHS BROWSER BROWSER.WHENFN SCHANGED BRPATHS1 BROWSER.LEFTFN
    GET.BROWSE.PP.WINDOW GET.BROWSE.DESCRIBE.WINDOW BROWSEPP PPREPAINTFN PPRESHAPEFN DESCRIBEREPAINTFN
    BROWSERDESCRIBE BROWSER.MIDDLEFN DEDITPROCESSRUNNINGP REDRAWBROWSEGRAPH STBROWSER)
  (GLOBALRESOURCES BROWSEHASH)
  (DECLARE%: DONTCOPY (RECORDS BROWSEWIN PATHSARGS))
  [INITVARS (BROWSER T)
    (BROWSERBOXING)
    (BROWSERFORMAT)
    (BROWSERWINDOWS)
    (NODESELECTIONWINDOW)
    (PFWINDOW)
    (BROWSER.DESCRIBE.WINDOW)
    (BrowserPPWindowWidth 750)
    (BROWSERMAX 10)
    (BROWSERFONT ' (GACHA 8]
  (P (MOVD? 'NIL 'MODERNWINDOW))
  (VARS BROWSER.BORDERS)
  (GLOBALVARS BROWSER.BORDERS BROWSERWINDOWS)
  (DECLARE%: DONTEVAL@LOAD DOCOPY (P (BROWSER T]))
```

(FILESLOAD MASTERSCOPE GRAPHER)

(DECLARE%: EVAL@COMPILE DONTCOPY

(FILESLOAD (LOADCOMP)
 GRAPHER)

(DECLARE%: EVAL@COMPILE

(RPAQQ **CHANGEDSHADE 8840**)

(CONSTANTS (CHANGEDSHADE 8840))
)

(DEFINEQ

(**MSPATHS.DISPATCH**

```
[LAMBDA (FROM TO INVERTED AVOIDING SEPARATE NOTRACE MARKING) ; Edited 15-Apr-2023 11:33 by lmm
  (IF (AND (GETD 'NUMSPATHS)
    (WINDOWWORLD)
    (EQ (OUTPUT)
      T))
    THEN (NUMSPATHS FROM TO INVERTED AVOIDING SEPARATE NOTRACE MARKING)
    ELSE (OLDMSPATHS FROM TO INVERTED AVOIDING SEPARATE NOTRACE MARKING])
```

(**NUMSPATHS**

```
[LAMBDA (FROM TO INVERTED AVOIDING SEPARATE NOTRACE MARKING DEPTH)
  (DECLARE (SPECVARS INVERTED GRAPHNODE.LIST)) ; Edited 26-Apr-2023 09:12 by lmm
                                                  ; Edited 15-Apr-2023 18:43 by lmm
                                                  ; Edited 7-Feb-2022 13:57 by rmk
                                                  ; Edited 11-Apr-88 11:08 by jrb:

  [OR AVOIDING (SETQ AVOIDING ' (NIL (NIL NIL . FNS)
    APPLY LAMBDA (X)
      (GETPROP X 'AVOID]

  (AND INVERTED (UPDATECHANGED))
  (OR DEPTH (SETQ DEPTH BROWSERMAX))
  (WITH-RESOURCES BROWSEHASH (PROG [NAMED TEM (UNDONE (MSLISTSET FROM T))
    ROOTS GRAPHNODE.LIST (SEEN BROWSEHASH)
    (CALLRELATION (PARSERELATION 'CALL]
    (DECLARE (SPECVARS SEEN GRAPHNODE.LIST CALLRELATION))
    (CLRHASH SEEN)
    (for X in UNDONE do (PUTHASH X (COND
      ((AND NOTRACE (MSMEMBSET X NOTRACE))
        -1)
      (T 0))
      SEEN)
    (OR INVERTED (UPDATEFN X NIL 0)))
```

```

[do (COND
  (NAMED (PUTHASH (CAR NAMED)
                 0 SEEN)
    (PUSH ROOTS (fetch (GRAPHNODE NODEID)
                       of (BRPATHS1 (CAR NAMED)
                                     DEPTH)))
    (SETQ NAMED (CDR NAMED)))
  (UNDONE [COND
    ([OR (NULL (SETQ TEM (GETHASH (CAR UNDONE)
                                  SEEN)))
      (EQ TEM 0)
      (AND (LISTP TEM)
            (NULL (CAR TEM)
                  (PUTHASH (CAR UNDONE)
                          (LIST NIL)
                          SEEN)
                    (SETQ NAMED (LIST (CAR UNDONE)
                                       (SETQ UNDONE (CDR UNDONE))))
      (T (RETURN))
    (RETURN (STBROWSER (LAYOUTGRAPH GRAPHNODE.LIST ROOTS (APPEND
                                                             BROWSERFORMAT
                                                             BROWSERBOXING
                                                             ))
                (LIST FROM TO INVERTED AVOIDING SEPARATE NOTRACE MARKING
                      DEPTH]))

```

(BROWSER

[LAMBDA (DISPLAYFLG)

; Edited 15-Apr-2023 14:55 by lmm
(* rmk%: "16-Dec-83 15:39")

```

(MOVD? 'MSPATHS 'OLDMSPATHS)
(MOVD 'MSPATHS.DISPATCH 'MSPATHS)
(SETQ BROWSER DISPLAYFLG)
(OR (FONTP BROWSERFONT)
  (SETQ BROWSERFONT (FONTCREATE BROWSERFONT)))
(PROG [(WC (FILEPKGTYPE 'FNS 'WHENCHANGED)
  (OR (MEMB 'BROWSER.WHENFNSCHANGED WC)
      (FILEPKGTYPE 'FNS 'WHENCHANGED (CONS 'BROWSER.WHENFNSCHANGED WC]))

```

(BROWSER.WHENFNSCHANGED

[LAMBDA (FNAME TYPE REASON)

(* DECLARATIONS%: (RECORDS BROWSEWIN))
; Edited 31-Mar-87 11:22 by jop

;; called by system when FNAME has changed If FNAME is in a browser window, it reprints and redescibes it.

```

(COND
  ((AND (ACTIVEWP PFWINDOW)
    (EQ (WINDOWPROP PFWINDOW 'FNBROWSED)
        FNAME))
    (BROWSEPP FNAME PFWINDOW)))
(COND
  ((AND (ACTIVEWP BROWSER.DESCRIBE.WINDOW)
    (EQ (WINDOWPROP BROWSER.DESCRIBE.WINDOW 'FNBROWSED)
        FNAME))
    (BROWSERDESCRIBE FNAME BROWSER.DESCRIBE.WINDOW)))
(for X in BROWSERWINDOWS do (COND
  ((find GRAPHNODE in (fetch (GRAPH GRAPHNODES) of (fetch (BROWSEWIN GRAPH)
                                                            of X))
    suchthat (EQ (fetch (GRAPHNODE NODELABEL) of GRAPHNODE)
                FNAME))
    (COND
      ((fetch (BROWSEWIN GRAPH) of X)
        (DSPFILL NIL CHANGEDSHADE 'PAINT (fetch (BROWSEWIN WINDOW) of X))
        (WINDOWPROP (fetch (BROWSEWIN WINDOW) of X)
                    'BUTTONEVENTFN
                    (FUNCTION REDRAWBROWSEGRAPH))
        (replace (BROWSEWIN GRAPH) of X with NIL])

```

(BRPATHS1

[LAMBDA (FROM DEPTH)

; Edited 25-Apr-2023 10:59 by lmm
; Edited 11-Apr-88 11:27 by jrb:

```

(DECLARE (SPECVARS INVERTED)
  (GLOBALVARS BROWSERFONT MISSING.GRAPH.NODEBORDER))
(PROG (TEM ENTRY TOFNS)
  (MSPATHS2 FROM)
  (COND
    ((EQ (SETQ TEM (GETHASH FROM SEEN))
      -1)
      (SETQ TEM (create GRAPHNODE
                       NODEID _ FROM
                       NODELABEL _ FROM
                       NODEFONT _ BROWSERFONT
                       TONODES _ NIL))
      (PUAH GRAPHNODE.LIST TEM)
      (PUTHASH FROM TEM SEEN)
      (RETURN TEM))

```

; on NOPATHS list - create a node for it with no subs

```

((NEQ TEM 0) ; already expanded into a list
 (RETURN TEM))
(T [SETQ TOFNS (COND
  ((NOT INVERTED)
   (GETRELATION FROM CALLRELATION))
  (T (GETRELATION FROM CALLRELATION T])
 (SETQ ENTRY (create GRAPHNODE
  NODEID _ FROM
  NODELABEL _ FROM
  NODEFONT _ BROWSERFONT))
 (PUSH GRAPHNODE.LIST ENTRY)
 (PUTHASH FROM ENTRY SEEN)
 (IF (AND TOFNS (<= DEPTH 0))
  THEN (REPLACE (GRAPHNODE NODEBORDER) OF ENTRY WITH (CDDR (ASSOC 'ENDOFFLINE BROWSER.BORDERS
  )))
 (RETURN ENTRY))
 (replace (GRAPHNODE TONODES) of ENTRY with (for X in (for Y in TOFNS when (MSPATHS2 Y) collect Y)
  when (SETQ X (BRPATHS1 X (- DEPTH 1)))
  collect (fetch (GRAPHNODE NODEID) of X)))
 (RETURN ENTRY])

```

(BROWSER.LEFTFN

[LAMBDA (NODE NWINDOW)

; Edited 21-May-2024 18:40 by mth
; Edited 26-Apr-2023 12:41 by lmm
; Edited 31-Mar-87 11:16 by jop
; function that is applied upon selection of a node.

```

(PROG (FN SELECTION)
 (if (NULL NODE)
  then (RETURN)
  (MOVEW NWINDOW) ; really want to just drag the content around
  (RETURN))
 (if (NULL (SETQ FN (fetch NODELABEL of NODE)))
  then (RETURN))
 [SETQ SELECTION (MENU (create MENU
  ITEMS _ '(CallsFrom CallsTo Edit Show InspectCode)

```

;; Not implemented: Ignore Avoid

```

(DESTRUCTURING-BIND (FROM TO INVERTED AVOIDING SEPARATE NOTRACE MARKING DEPTH)
 (for BW in BROWSERWINDOWS when (EQ (fetch (BROWSEWIN WINDOW) of BW)
  NWINDOW)
  do (RETURN (fetch (BROWSEWIN ARGS) of BW)) finally (PROMPTPRINT "No browser window found for" FN
  )
 (RETURN))

```

;; Now we have the arguments to MSPATHS .. insert this node?

```

(SELECTQ SELECTION
 (NIL)
 (RETURN))
 ((CallsFrom CallsTo) ;; new graph, FN at the root
 (NUMSPATHS (CREATE SENTENCE
  SUBJECT _ '(NIL NIL . FNS)
  MSPRED _ 'QUOTE
  OTHERSTUFF _ (LIST FN))
 (IF INVERTED
  THEN TO
  ELSE FROM)
 INVERTED AVOIDING NIL NOTRACE MARKING DEPTH))
 NIL
 (Ignore) ; local ignore
 (Avoid) ; global ignore
 (Edit (ED FN (if (HASDEF FN 'FNS)
  then '(FNS :DONTWAIT)
  elseif (HASDEF FN 'FUNCTIONS)
  then '(FUNCTIONS :DONTWAIT)
  else (PROMPTPRINT FN "no definition")
  NIL)))
 (Show (CL:UNLESS (EQ FN (WINDOWPROP (GET.BROWSE.PP.WINDOW)
  'FNBROWSED))
 (BROWSEPP FN (GET.BROWSE.PP.WINDOW))))
 (Describe (BROWSERDESCRIBE FN (GET.BROWSE.DESCRIBE.WINDOW)))
 (InspectCode (IF (NOT (CCODEP FN))
  THEN (PROMPTPRINT FN "not compiled")
  ELSE (INSPECTCODE FN)))
 (HELP])

```

(GET.BROWSE.PP.WINDOW

[LAMBDA NIL

; Edited 7-Feb-2022 14:01 by rmk
; Edited 31-Mar-87 11:23 by jop
; returns the window for pretty printing from the browser.

```

(COND
 ((WINDOWP PFWINDOW)
 PFWINDOW)

```

```
(T (SETQ PFWINDOW (CREATEW NIL "Browser print out window"))
(WINDOWPROP PFWINDOW 'REPAINTFN 'PPREPAINTFN)
(WINDOWPROP PFWINDOW 'REPAINTFN 'PPREPAINTFN)
(WINDOWPROP PFWINDOW 'RESHAPEFN 'PPRESHAPEFN)
(WINDOWPROP PFWINDOW 'SCROLLFN 'SCROLLBYREPAINTFN)
(MODERNWINDOW PFWINDOW)
PFWINDOW])
```

(GET.BROWSE.DESCRIBE.WINDOW

[LAMBDA NIL

; Edited 31-Mar-87 11:23 by jop
; returns the window for describe action from the browser.

```
(COND
((WINDOWP BROWSER.DESCRIBE.WINDOW)
BROWSER.DESCRIBE.WINDOW)
(T (SETQ BROWSER.DESCRIBE.WINDOW (CREATEW NIL "Browser describe window"))
(WINDOWPROP BROWSER.DESCRIBE.WINDOW 'REPAINTFN 'DESCRIBEREPAINTFN)
(WINDOWPROP BROWSER.DESCRIBE.WINDOW 'RESHAPEFN 'DESCRIBEREPAINTFN)
(WINDOWPROP BROWSER.DESCRIBE.WINDOW 'SCROLLFN 'SCROLLBYREPAINTFN)
BROWSER.DESCRIBE.WINDOW])
```

(BROWSEPP

[LAMBDA (FN WINDOW)

; Edited 31-Mar-87 11:16 by jop

```
(DECLARE (GLOBALVARS BrowserPPWindowWidth))
(PROG (WIDTH BOTTOM)
(WINDOWPROP WINDOW 'FNBROWSED FN)
(CLEARW WINDOW)
(MOVETOUPPERLEFT WINDOW)
(WINDOWPROP WINDOW 'EXTENT NIL)
(SETQ WIDTH (PPREPAINTFN WINDOW)) ; set the extent of the window.
(WINDOWPROP WINDOW 'EXTENT (create REGION
LEFT _ 0
BOTTOM _ (SETQ BOTTOM (DSPYPOSITION NIL WINDOW))
WIDTH _ WIDTH
HEIGHT _ (IDIFFERENCE (WINDOWPROP WINDOW 'HEIGHT)
BOTTOM)))
```

(PPREPAINTFN

[LAMBDA (WINDOW REGION RESHAPE)

; Edited 11-Jun-90 14:11 by mitani

:: repaints the browser pp window WINDOW. Returns the width of the image so that caller can set the EXTENT.

```
(PROG ((FN (WINDOWPROP WINDOW 'FNBROWSED))
(EXTENT (WINDOWPROP WINDOW 'EXTENT))
DEF FNTYPE)
(RETURN (COND
(FN (printout WINDOW .FONT LAMBDAFONT)
(MOVETOUPPERLEFT WINDOW EXTENT)
(printout WINDOW .FONT DEFAULTFONT)
(COND
((for FPTYPE in MSFNTPES when (SETQ DEF (GETDEF FN (ffetch (MSANALYZABLE FILEPKGNAME)
of FPTYPE)
NIL
'NOERROR))
do (SETQ FNTYPE (ffetch (MSANALYZABLE FILEPKGNAME) of FPTYPE))
(RETURN DEF)
finally NIL) ; set up linelength characteristics.
(RESETLST
(RESETSAVE (OUTPUT WINDOW))
(RESETSAVE (SETREADTABLE T))
(RESETSAVE (**COMMENT**FLG))
(if (EQ FNTYPE 'FNS)
then (printout WINDOW "(" .FONT LAMBDAFONT .P2 FN .FONT DEFAULTFONT T))
(DSPRIGHTMARGIN (fetch (REGION RIGHT) of (DSPCLIPPINGREGION NIL WINDOW))
WINDOW)
(PRINTDEF DEF (AND (EQ FNTYPE 'FNS)
2)
'FNS)
(if (EQ FNTYPE 'FNS)
then (PRIN1 ")" WINDOW)))
(fetch (REGION WIDTH) of (DSPCLIPPINGREGION NIL WINDOW)))
(T ; set right margin out so wouldn't clip.
(DSPRIGHTMARGIN 5000 WINDOW)
(APPLY* (FUNCTION PF*)
FN NIL (GETSTREAM WINDOW))
(DSPRIGHTMARGIN (fetch (REGION RIGHT) of (DSPCLIPPINGREGION NIL WINDOW))
WINDOW)
BrowserPPWindowWidth)))
(T 0]))
```

(PPRESHAPEFN

[LAMBDA (WINDOW)

(* Imm "20-Jul-84 15:48")

```
(BROWSEPP (WINDOWPROP WINDOW 'FNBROWSED)
WINDOW])
```

(DESCRIBEREPAINTFN

[LAMBDA (WIN REG)

; Edited 31-Mar-87 11:24 by jop
; reprints the contents of a describe window.

```
(PROG [(FN (WINDOWPROP WIN 'FNBROWSED))
        (EXTENT (WINDOWPROP WIN 'EXTENT])
        (COND
          (FN (RESETLST
              (RESETSAVE MSPRINTFLG NIL)
              (RESETSAVE (OUTPUT WIN))
              (DSPSCROLL 'OFF WIN)
              (COND
                (EXTENT (MOVETOUPPERLEFT WIN EXTENT)))
              (MSDESCRIBE FN)))]])
```

(BROWSERDESCRIBE

[LAMBDA (FN WIN)

; Edited 31-Mar-87 11:15 by jop

;; puts the masterscope DESCRIBE information in the window DS. Keeps tracks of which fn so if it changes the window can be updated.

```
(WINDOWPROP WIN 'FNBROWSED FN)
(CLEARW WIN)
(DESCRIBEREPAINTFN WIN)
(WINDOWPROP WIN 'EXTENT (create REGION
                             LEFT _ 0
                             BOTTOM _ (DSPYPOSITION NIL WIN)
                             WIDTH _ (WINDOWPROP WIN 'WIDTH)
                             HEIGHT _ (IDIFFERENCE (WINDOWPROP WIN 'HEIGHT)
                                                    (DSPYPOSITION NIL WIN]))
```

(BROWSER.MIDDLEFN

[LAMBDA (NODE NWINDOW)

; Edited 25-Mar-94 13:25 by jds
; called when yellow selection from browser. Call display editor
; on the function.

```
(COND
  ((NULL NODE))
  [(THIS.PROCESS)
   (SELECTQ (EDITMODE)
            (DEDIT [COND
                    ((DEDITPROCESSRUNNINGP)
                     (printout PROMPTWINDOW T T "Dedit can't run in two processes at once, yet." T "You can
                     call Dedit in the same process by typing " (fetch NODELABEL of NODE)
                     " " "into the Dedit " "window then selecting 'Edit'.")
                     (T (ADD.PROCESS '(ED ', (fetch NODELABEL of NODE]))
                        ((SEdit SEDIT:SEdit)
                         (ED (fetch NODELABEL of NODE)
                             ':DONTWAIT))
                         (ED (fetch NODELABEL of NODE])
                        (T (ED (fetch NODELABEL of NODE]))
                         ; processes are running.
                         ; Sedit doesn't have to worry about this stuff
```

(DEDITPROCESSRUNNINGP

[LAMBDA NIL

; Edited 31-Mar-87 11:27 by jop

;; is there a dedit process running?

```
(AND (EQ (EDITMODE)
          'DEDIT)
      \DEDITWINDOWS])
```

(REDRAWBROWSEGRAPH

[LAMBDA (WINDOW)

(* DECLARATIONS%: (RECORDS BROWSEWIN))
; Edited 15-Apr-2023 16:12 by lmm
; Edited 31-Mar-87 11:24 by jop

```
(PROG [(WN (find X in BROWSERWINDOWS suchthat (EQ (fetch (BROWSEWIN WINDOW) of X)
                                                    WINDOW]
          (AND WN (APPLY (FUNCTION NUMSPATHS)
                        (fetch (BROWSEWIN ARGS) of WN))) ; (OR WN (SHOULDNT))
          (WINDOWPROP WINDOW 'BUTTONEVENTFN (FUNCTION APPLYTOSELECTEDNODE))
          (APPLYTOSELECTEDNODE WINDOW])
```

(STBROWSER

[LAMBDA (GRAPH ARGS)

(* DECLARATIONS%: (RECORDS BROWSEWIN))
; Edited 25-Apr-2023 21:05 by lmm
; Edited 31-Mar-87 11:18 by jop

;; puts a browser graph for the args FROMFN in a window. If a similar graph is already a window, that window is reused; otherwise a new window
;; is created.

```
(WINDOWADDPROP (bind TMP for W in BROWSERWINDOWS when (EQUAL (fetch (PATHSARGS DISCRIMINANT) of ARGS)
                                                                (fetch (PATHSARGS DISCRIMINANT)
                                                                of (fetch (BROWSEWIN ARGS) of W)))
do (replace (BROWSEWIN ARGS) of W with ARGS)
    (replace (BROWSEWIN GRAPH) of W with GRAPH)
    (SHOWGRAPH GRAPH (SETQ W (fetch (BROWSEWIN WINDOW) of W))
                  (FUNCTION BROWSER.LEFTFN)
```

```

(FUNCTION BROWSER.MIDDLEFN)
(RETURN W)
  finally (SETQ W (SHOWGRAPH GRAPH (CONCAT "PATHS" (COND
    ((SETQ TMP (fetch (PATHSARGS FROM)
      of ARGS))
      (CONCAT (COND
        ((CADR (CADR TMP))
          " FROM ")
        (T " TO "))
        (CADDR TMP)))
      (T ""))
    (COND
      ((SETQ TMP (fetch (PATHSARGS TO) of ARGS))
        ; CADDR here gets the thing that looks like it might be a
        ; function name.
        (CONCAT (COND
          ((CADR (CADR TMP))
            " FROM ")
          (T " TO "))
          (CADDR TMP)))
        (T "")))
    (FUNCTION BROWSER.LEFTFN)
    (FUNCTION BROWSER.MIDDLEFN)))
  (push BROWSERWINDOWS (create BROWSEWIN
    ARGS _ ARGS
    GRAPH _ GRAPH
    WINDOW _ W))
(RETURN W))
'CLOSEFN
(FUNCTION (LAMBDA (WINDOW)
  ; The closing function for browser windows. removes it from
  ; BROWSERWINDOWS
  (SETQ BROWSERWINDOWS (DREMOVE (for X in BROWSERWINDOWS
    when (EQ (fetch (BROWSEWIN WINDOW) of X)
      WINDOW)
    do (RETURN X))
    BROWSERWINDOWS]))
)
)
(DECLARE%: DONTCOPY
(DECLARE%: EVAL@COMPILE
[PUTDEF 'BROWSEHASH 'RESOURCES '(NEW (LIST (HARRAY 30)
)
)
(/SETTOPVAL '\BROWSEHASH.GLOBALRESOURCE NIL)
(DECLARE%: DONTCOPY
(DECLARE%: EVAL@COMPILE
(RECORD BROWSEWIN (ARGS GRAPH WINDOW))
[RECORD PATHSARGS (FROM TO . ETC)
  (ACCESSFNS PATHSARGS ((DISCRIMINANT (CONS (fetch (PATHSARGS FROM) of DATUM)
    (fetch (PATHSARGS TO) of DATUM]
)
)
(RPAQ? BROWSER T)
(RPAQ? BROWSERBOXING )
(RPAQ? BROWSERFORMAT )
(RPAQ? BROWSERWINDOWS )
(RPAQ? NODESELECTIONWINDOW )
(RPAQ? PFWINDOW )
(RPAQ? BROWSER.DESCRIBE.WINDOW )
(RPAQ? BrowserPPWindowWidth 750)
(RPAQ? BROWSERMAX 10)
(RPAQ? BROWSERFONT '(GACHA 8))
(MOVD? 'NILL 'MODERNWINDOW)
(RPAQ? BROWSER.BORDERS
  ((NORMAL "Normal" 2 -1)
  (GHOST "Shown elsewhere" 2 8840)
  (RECURSIVEGHOST "End of recursive chain" 2 0 -1)

```

{MEDLEY}<library>BROWSER.;1 (**BROWSER.BORDERS** cont.)

Page 7

```
(MERGED "Includes other branches" 4 42405)
(SELFRECURSIVE "Includes self-recursive calls" 2 61375)
(RECURSIVE "Head of recursive chain" 4 28086)
(ENDOFLINE "exceeded depth limit" 6 64510))
```

(DECLARE%: DOEVAL@COMPILE DONTCOPY

(GLOBALVARS BROWSER.BORDERS BROWSERWINDOWS)
)

(DECLARE%: DONTEVAL@LOAD DOCOPY

(**BROWSER** T)
)

FUNCTION INDEX

| | | | | | |
|-----------------------------|---|----------------------------------|---|-------------------------|---|
| BROWSEPP | 4 | BRPATHS1 | 2 | NUMSPATHS | 1 |
| BROWSER | 2 | DEDITPROCESSRUNNINGP | 5 | PPREPAINTFN | 4 |
| BROWSER.LEFTFN | 3 | DESCRIBEREPAINTFN | 5 | PPRESHAPEFN | 4 |
| BROWSER.MIDDLEFN | 5 | GET.BROWSE.DESCRIBE.WINDOW | 4 | REDRAWBROWSEGRAPH | 5 |
| BROWSER.WHENFNCHANGED | 2 | GET.BROWSE.PP.WINDOW | 3 | STBROWSER | 5 |
| BROWSERDESCRIBE | 5 | MSPATHS.DISPATCH | 1 | | |

VARIABLE INDEX

| | | | | | | | |
|-------------------------------|---|---------------------|---|----------------------------|---|---------------------------|---|
| BROWSER | 6 | BROWSERBOXING | 6 | BROWSERMAX | 6 | NODESELECTIONWINDOW | 6 |
| BROWSER.BORDERS | 6 | BROWSERFONT | 6 | BrowserPPWindowWidth | 6 | PFWINDOW | 6 |
| BROWSER.DESCRIBE.WINDOW | 6 | BROWSERFORMAT | 6 | BROWSERWINDOWS | 6 | | |

RECORD INDEX

| | | | |
|-----------------|---|-----------------|---|
| BROWSEWIN | 6 | PATHSARGS | 6 |
|-----------------|---|-----------------|---|

CONSTANT INDEX

| | |
|--------------------|---|
| CHANGEDSHADE | 1 |
|--------------------|---|
