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:: TESTER FOR MULTIPLE STREAMS PER FILE
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:: The main functionality to test with multiple streams per file is to  
:: make sure that the functions listed below work properly using various  
:: devices and all of the combinations of the access modes when trying to  
:: open more than one stream on the same file. The tests should also  
:: verify valid & distinct streams for each legal open case, verify same  
:: data at same locations read from each open stream, verify filepos can  
:: be set and is unique for each open stream, verify correct results  
:: using 2 or more separate processes on same machine, and 1 or more  
:: processes on different machines opening multiple streams on the same,  
:: verify correct operation of multiple open streams for both NS and IFS  
:: files, verify closing one stream does not close any other open stream  
:: on the same file, verify that a file cannot be deleted or renamed  
:: with an open stream, and use as many device names as possible to open  
streams with.
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:: Functions To Be Tested:
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:: OPENSTREAM, STREAMP, OPENP,  
:: CLOSEF, INFILE, OUTFILE, GETFILEINFO,  
:: WHENCLOSE, DELFILE,  
:: RENAMEFILE, BIN, BOUT, EOFP,  
:: SETFILEPTR, GETFILEPTR, GETSTREAM
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::  
:: Created By: Jim Blum  
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::  
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::  
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::  
:: Filed As: {ERIS}<LISPCORE>TEST>MSPF>MSPF.TEST  
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::
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(DO-TEST-GROUP "TEST MULTIPLE STREAMS PER FILE"
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```
:BEFORE
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(PROGN
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(TEST-SETQ DEVICE-LIST '("{DSK}TESTFILE" "{ER
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INYES}<TEST>TESTFILE" "{CORE}TESTFILE"
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"{PELE:}<PUBLIC>TESTFILE")) ; list of devices/filenames to test
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(TEST-SETQ ACCESS-MODES '(IL:INPUT IL:OUTPUT
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IL:BOTH IL:APPEND))
    (TEST-SETQ RESULT T)
)
:AFTER
  (PROGN
    (DOLIST (FILE DEVICE-LIST)
      (DO NIL ((NULL (IL:DELFILE FILE)))) ; DELETE ALL VERSIONS
    )
  )
)

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(DO-TEST "Verify combinations of open access methods work as they
should"

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  (DOLIST (FILE DEVICE-LIST)
    (DO NIL ((NULL (IL:DELFILE FILE)))) ; DELETE OLD VERSIONS
  )

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)
(DOLIST (FILE DEVICE-LIST RESULT )
  (UNWIND-PROTECT
    (PROGN
      (TEST-SETQ STREAM (IL:OPENSTREAM FILE 'IL:OUTPUT))
      (DOLIST (MODE ACCESS-MODES )
        (IF (TEST-SETQ STREAM2
          (IGNORE-ERRORS
            (IL:OPENSTREAM FILE MODE

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'IL:OLD)

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          )
        )
      (PROGN
        (IGNORE-ERRORS (IL:CLOSEF
          (FORMAT *ERROR-OUTPUT* "FILE ~A
          OPENED ILLEGALLY IN MODE ~A~%~%" FILE MODE)
          (SETQ RESULT NIL)
        ) ; PROGN
      ) ; IF
    ) ; DOLIST
  ) ; PROGN
  (PROGN (IL:CLOSEF STREAM) (DELETE-FILE FILE))
) ; UNWIND PROTECT
) ; DOLIST
) ; DO-TEST

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(DO-TEST "TEST MULTIPLE INPUT STREAMS WORK"

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  (TEST-SETQ RESULT T)
  (DOLIST (FILE DEVICE-LIST)
    (DO NIL ((NULL (IL:DELFILE FILE)))) ; DELETE OLD VERSIONS
  )
)

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(DOLIST (FILE DEVICE-LIST RESULT)
  (UNWIND-PROTECT
    (PROGN
      (TEST-SETQ STREAM (IL:OPENSTREAM FILE 'IL:OUTPUT))
      (PRINT "THIS IS A TEST" STREAM)
      (IL:CLOSEF STREAM)
      (TEST-SETQ STREAM (IL:OPENSTREAM FILE 'IL:INPUT))
      (IF (NOT (AND (IL:OPENP STREAM)
                    (IL:GETSTREAM STREAM)
                    (STREAMP STREAM)
                  )
          )
        (PROGN
          (FORMAT *ERROR-OUTPUT* "FILE ERROR IN ~A~%~%" FILE)
          (TEST-SETQ RESULT NIL)
        )
      )
      (TEST-SETQ STREAM2 (IL:OPENSTREAM FILE 'IL:INPUT))
      (IF (NOT (AND (IL:OPENP STREAM2)
                    (IL:GETSTREAM STREAM2)
                    (STREAMP STREAM2)
                  )
          )
        (PROGN (FORMAT *ERROR-OUTPUT* "Cannot open multiple
stream on file ~a~%~%" FILE)
          (TEST-SETQ RESULT NIL)
        )
      )
      (TEST-SETQ STREAM3 (IL:OPENSTREAM FILE 'IL:INPUT))
      (IF (NOT (AND (IL:OPENP STREAM3)
                    (IL:GETSTREAM STREAM3)
                    (STREAMP STREAM3)
                  )
          )
        (PROGN
          (FORMAT *ERROR-OUTPUT* "Cannot open multiple
stream on file ~a~%~%" FILE)
          (TEST-SETQ RESULT NIL)
        )
      )
      (IL:SETFILEPTR STREAM 0)
      (IL:SETFILEPTR STREAM2 0)
      (IL:SETFILEPTR STREAM3 0)
      (IF (NOT (EQUAL (READ STREAM)
                      "THIS IS A TEST"
                    )
          )
        )
      )
    )
  )
)

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    )
    (TEST-SETQ RESULT NIL)
  )
  (IF (NOT (EQUAL (READ STREAM2)
                  "THIS IS A TEST"
                  )
    )
    )
    (TEST-SETQ RESULT NIL)
  )
  (IF (NOT (EQUAL (READ STREAM3)
                  "THIS IS A TEST"
                  )
    )
    )
    (TEST-SETQ RESULT NIL)
  )
  (IF (OR (IL:NEQ (IL:GETFILEPTR STREAM) 17)
          (IL:NEQ (IL:GETFILEPTR STREAM2) 17)
          (IL:NEQ (IL:GETFILEPTR STREAM3) 17)
        )
    )
    (PROGN
      (FORMAT *ERROR-OUTPUT* "FILEPTR ON STREAM IS
NOT CORRECT~%~%")
      (TEST-SETQ RESULT NIL)
    )
  )
  (IF (OR (IL:EOFP STREAM)
          (IL:EOFP STREAM2)
          (IL:EOFP STREAM3)
        )
    )
    (PROGN
      (FORMAT *ERROR-OUTPUT* "EARLY END OF FILE
ENCOUNTERED~%~%")
      (TEST-SETQ RESULT NIL)
    )
  )
  (IGNORE-ERRORS (READ STREAM))
  (IGNORE-ERRORS (READ STREAM2))
  (IGNORE-ERRORS (READ STREAM3))
  (IF (NOT (AND (IL:EOFP STREAM)
                (IL:EOFP STREAM2)
                (IL:EOFP STREAM3)
              )
    )
    )
    (PROGN (FORMAT *ERROR-OUTPUT* "END OF FILE NOT
ENCOUNTERED~%~%")
      (TEST-SETQ RESULT NIL)
    )
  )

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) ; IF
(IF (IGNORE-ERRORS (IL:RENAMEFILE FILE 'TESTFILE2))
    (PROGN
      (FORMAT *ERROR-OUTPUT* "RENAME-FILE
ERROR~%~%"
      (TEST-SETQ RESULT NIL)
    )
)
) ; IF
(IF (IGNORE-ERRORS (IL:DELFILE FILE))
    (PROGN
      (FORMAT *ERROR-OUTPUT* "FILE ~A DELETED WHILE A
STREAM WAS OPEN ON IT~%~%" FILE)
      (TEST-SETQ RESULT NIL)
    )
) ; PROGN FOR UNWIND-PROTECT
(PROGN (IGNORE-ERRORS (IL:CLOSEF STREAM))
        (IGNORE-ERRORS (IL:CLOSEF STREAM2))
        (IGNORE-ERRORS (IL:CLOSEF STREAM3))
        (IF (OR (IL:OPENP STREAM)
                (IL:OPENP STREAM2)
                (IL:OPENP STREAM3)
            )
            (PROGN (FORMAT *ERROR-OUTPUT*
"IL:OPENP RETURNS NON-NIL ON A CLOSED STREAM~%~%"
                    (TEST-SETQ RESULT NIL)
            )
        )
) ; IF
(IGNORE-ERRORS (DELETE-FILE FILE))
) ; PROGN
) ; UNWIND-PROTECT
) ; DOLIST
) ; DO-TEST

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(DO-TEST "TEST FILE ATTRIBUTES UNAFFECTED WITH MULTIPLE
STREAMS"
  (TEST-SETQ RESULT T)
  (DOLIST (FILE DEVICE-LIST)
    (DO NIL ((NULL (IL:DELFILE FILE)))) ; DELETE OLD VERSIONS
  )
  (DOLIST (FILE DEVICE-LIST RESULT)
    (UNWIND-PROTECT
      (PROGN
        (TEST-SETQ STREAM (IL:OPENSTREAM FILE 'IL:OUTPUT))
      )
    )
  )
)

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                                                    (IL:PUSH CLIST
(READ ST))))))
  (IL:WHENCLOSE STREAM2 'IL:BEFORE (FUNCTION (LAMBDA
(ST)
                                                    (IL:PUSH CLIST
(READ ST))))))
  (IL:WHENCLOSE STREAM3 'IL:BEFORE (FUNCTION (LAMBDA
(ST)
                                                    (IL:PUSH CLIST
(READ ST))))))
)
  (SETQ RESULT
  (PROGN
    (IGNORE-ERRORS (IL:CLOSEF STREAM))
    (IGNORE-ERRORS (IL:CLOSEF STREAM2))
    (IGNORE-ERRORS (IL:CLOSEF STREAM3))
    (EQUAL CLIST '("THIS IS A TEST" "THIS IS A TEST" "THIS IS A
TEST")))
  ) ; PROGN
) ; SETQ
) ; UNWIND-PROTECT
) ; DOLIST
) ; DO-TEST

(DO-TEST "TEST INFILE & OUTFILE"
  (TEST-SETQ RESULT NIL)
  (DOLIST (FILE DEVICE-LIST RESULT)
    (UNWIND-PROTECT
      (PROGN
        (IL:OUTFILE FILE)
        (IL:PRINT "THIS IS A TEST" NIL)
        (IL:CLOSEF NIL)
        (SETQ STREAM (IL:INFILE FILE))
        (SETQ STREAM2 (IL:OPENSTREAM FILE 'IL:INPUT))
      )
    )
  (SETQ RESULT
    (AND
      (EQUAL (IL:READ NIL) "THIS IS A TEST")
      (NOT (IGNORE-ERRORS (IL:CLOSEF STREAM)))
      (IGNORE-ERRORS (IL:CLOSEF STREAM2))
      (IGNORE-ERRORS (IL:CLOSEF NIL))
      (IL:TRUE (IL:CLOSEF NIL))
    )
  ) ; PROGN
) ; SETQ
) ; UNWIND-PROTECT

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) ; DOLIST  
) ; DO-TEST  
) ; DO-TEST-GROUP
```

STOP