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Read Table: XCL

Package: XEROX-COMMON-LISP

Format: XCCS

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(IL:RPAQQ **IL:CMLPACKAGECOMS**

(

;;; This is the second part of the package system, the first is in LLPACKAGE, which is loaded during the init

```
(IL:SETFS SYMBOL-PACKAGE)
(IL:FUNCTIONS IL:DWIM-SYMBOL-PACKAGE ESCAPE-COLONS-PROCEED MAKE-EXTERNAL-PROCEED
  MAKE-INTERNAL-PROCEED UGLY-SYMBOL-PROCEED)
(IL:DECLARE\ IL:DONTEVAL@LOAD IL:DOCOPY (IL:ADDVARS (IL:DWIMUSERFORMS (IL:DWIM-SYMBOL-PACKAGE))))
```

;; User friendly symbol error resolving functions

```
(IL:STRUCTURES READ-CONFLICT MISSING-EXTERNAL-SYMBOL MISSING-PACKAGE)
(IL:VARIABLES *PREFERRED-READING-SYMBOLS*)
(IL:FUNCTIONS IL:RESOLVE-READER-CONFLICT IL:RESOLVE-MISSING-EXTERNAL-SYMBOL
  IL:RESOLVE-MISSING-PACKAGE)
(IL:STRUCTURES PACKAGE-ERROR SYMBOL-CONFLICT USE-CONFLICT EXPORT-CONFLICT EXPORT-MISSING
  IMPORT-CONFLICT UNINTERN-CONFLICT)
(IL:FUNCTIONS IL:RESOLVE-USE-PACKAGE-CONFLICT IL:RESOLVE-EXPORT-CONFLICT IL:RESOLVE-EXPORT-MISSING
  IL:RESOLVE-IMPORT-CONFLICT IL:RESOLVE-UNINTERN-CONFLICT)
(IL:STRUCTURES SYMBOL-COLON-ERROR)
(IL:FUNCTIONS IL:\\INVALID.SYMBOL ; Also defined (w/o the error condition or proceed case) in
  ; LLREAD.
  )
```

;; Symbol inspector

```
(IL:FUNCTIONS IL:SYMBOL-INSPECT-FETCHFN IL:SYMBOL-INSPECT-STOREFN)
(IL:P (LET ((IL:FORM ' ((IL:FUNCTION SYMBOLP)
  (IL:NAME IL:VALUE IL:PLIST PACKAGE)
  IL:SYMBOL-INSPECT-FETCHFN IL:SYMBOL-INSPECT-STOREFN NIL NIL NIL "Symbol
  inspector")))
  (COND ((NOT (IL:MEMBER IL:FORM IL:INSPECTMACROS))
    (IL:|push| IL:INSPECTMACROS IL:FORM))))))
```

;; Package inspector

```
(IL:FUNCTIONS IL:PACKAGE-INSPECT-FETCHFN IL:PACKAGE-INSPECT-STOREFN)
(IL:P (LET ((IL:FORM ' ((IL:FUNCTION PACKAGEP)
  (IL:NAME IL:NICKNAMES IL:USE-LIST IL:INTERNAL-SYMBOLS IL:EXTERNAL-SYMBOLS
  IL:SHADOWING-SYMBOLS)
  IL:PACKAGE-INSPECT-FETCHFN IL:PACKAGE-INSPECT-STOREFN NIL NIL NIL "Package
  inspector")))
  (COND ((NOT (IL:MEMBER IL:FORM IL:INSPECTMACROS))
    (IL:|push| IL:INSPECTMACROS IL:FORM))))))
```

;; Package-hashtable inspector

```
(IL:FUNCTIONS IL:PACKAGE-HASHTABLE-INSPECT-FETCHFN IL:PACKAGE-HASHTABLE-INSPECT-STOREFN)
(IL:P (LET ((IL:FORM ' ((IL:FUNCTION CL::PACKAGE-HASHTABLE-P)
  (IL:SIZE IL:FREE IL:DELETED IL:CONTENTS)
  IL:PACKAGE-HASHTABLE-INSPECT-FETCHFN IL:PACKAGE-HASHTABLE-INSPECT-STOREFN)))
  (COND ((NOT (IL:MEMBER IL:FORM IL:INSPECTMACROS))
    (IL:|push| IL:INSPECTMACROS IL:FORM))))))
```

;; Package's Prefix accessor and setfs (Edited by TT 14-June-90 for AR#11112)

```
(IL:FUNCTIONS PACKAGE-PREFIX SETF-PACKAGE-PREFIX)
(IL:SETFS PACKAGE-PREFIX)
(IL:PROP (IL:FILETYPE IL:MAKEFILE-ENVIRONMENT)
  IL:CMLPACKAGE)
(IL:DECLARE\ IL:DONTEVAL@LOAD IL:DOEVAL@COMPILE IL:DONTCOPY IL:COMPILEVARS (IL:ADDVARS (IL:NLAMA)
  (IL:NLAML)
  (IL:LAMA))))
```

;;; This is the second part of the package system, the first is in LLPACKAGE, which is loaded during the init

(DEFSETF **SYMBOL-PACKAGE** IL:SETF-SYMBOL-PACKAGE)

(DEFUN **IL:DWIM-SYMBOL-PACKAGE** ()

DECLARE (SPECIAL IL:FAULTX IL:FAULTAPPLYFLG))

;; This is placed on DWIMUSERFORMS to attempt corrections where the typed symbol is in the wrong package.

```
(LET ((IL:SYM (OR (CAR (IL:LISTP IL:FAULTX))
  IL:FAULTX))
  IL:OTHERS)
  (COND
    ((AND (IL:LITATOM IL:SYM)
```

```
(CDR (IL:SETQ IL:OTHERS (FIND-ALL-SYMBOLS (SYMBOL-NAME IL:SYM))))
(IL:SETQ IL:OTHERS (IL:|for| IL:X IL:|in| IL:OTHERS IL:|collect| IL:X
IL:|when| (AND (IL:NEQ IL:X IL:SYM)
(NOT (KEYWORDP IL:X))
(IL:|if| (AND (IL:LITATOM IL:FAULTX)
(NOT IL:FAULTAPPLYFLG))
IL:|then| ; Error is uba
(BOUNDP IL:X)
IL:|else| (FBOUNDP IL:X))))))
(IL:|for| IL:CHOICE IL:|in| IL:OTHERS IL:|when| (IL:FIXSPELL1 IL:SYM IL:CHOICE NIL T (AND (CDR IL:OTHERS)
'IL:MUSTAPPROVE))
IL:|do|
```

;; Normally there is only one choice, and we offer it. If there is more than one choice, probably should do something like a menu. This is quick and dirty--ask user for each in turn and require approval so that it doesn't choose the first automatically.

```
(RETURN (IL:|if| (IL:LISTP IL:FAULTX)
IL:|then| ; SYM = (CAR FAULTX)
(IL:/RPLACA IL:FAULTX IL:CHOICE)
IL:|else| IL:CHOICE))))))
```

```
(DEFINE-PROCEED-FUNCTION ESCAPE-COLONS-PROCEED :CONDITION SYMBOL-COLON-ERROR
:REPORT "Treat the extra colon(s) as if they were escaped")
```

```
(DEFINE-PROCEED-FUNCTION MAKE-EXTERNAL-PROCEED :CONDITION MISSING-EXTERNAL-SYMBOL
:REPORT "Return a new external symbol by that name"
(CONDITION *CURRENT-CONDITION*))
```

```
(DEFINE-PROCEED-FUNCTION MAKE-INTERNAL-PROCEED :CONDITION MISSING-EXTERNAL-SYMBOL
:REPORT "Return a new internal symbol by that name")
```

```
(DEFINE-PROCEED-FUNCTION UGLY-SYMBOL-PROCEED :CONDITION MISSING-PACKAGE)
```

```
(IL:DECLARE\ : IL:DONTEVAL@LOAD IL:DOCOPY
```

```
(IL:ADDTOVAR IL:DWIMUSERFORMS (IL:DWIM-SYMBOL-PACKAGE))
)
```

;; User friendly symbol error resolving functions

```
(DEFINE-CONDITION READ-CONFLICT (READ-ERROR)
(NAME PACKAGES)
(:REPORT (LAMBDA (CONDITION STREAM)
' (FORMAT STREAM "Symbols named ~a exist in packages:~{~a ~}" (READ-CONFLICT-NAME CONDITION)
(MAPCAR #'PACKAGE-NAME (READ-CONFLICT-PACKAGES CONDITION)))
(FORMAT STREAM "Symbols named ~A exists in packages:" (READ-CONFLICT-NAME CONDITION))
(DOLIST (PKG (READ-CONFLICT-PACKAGES CONDITION))
(PRINC " " STREAM)
(PRINC (PACKAGE-NAME PKG)
STREAM))))))
```

```
(DEFINE-CONDITION MISSING-EXTERNAL-SYMBOL (READ-ERROR)
(NAME PACKAGE)
(:REPORT (LAMBDA (CONDITION STREAM)
(FORMAT STREAM "External symbol ~a not found in package ~a" (MISSING-EXTERNAL-SYMBOL-NAME
CONDITION)
(PACKAGE-NAME (MISSING-EXTERNAL-SYMBOL-PACKAGE CONDITION))))))
```

```
(DEFINE-CONDITION MISSING-PACKAGE (READ-ERROR)
(PACKAGE-NAME SYMBOL-NAME EXTERNAL)
(:REPORT (LAMBDA (CONDITION STREAM)
(FORMAT STREAM "Can't find package ~a to look up symbol ~a" (MISSING-PACKAGE-PACKAGE-NAME
CONDITION)
(MISSING-PACKAGE-SYMBOL-NAME CONDITION))))))
```

(DEFVAR *PREFERRED-READING-SYMBOLS*

```
' (IL:APPEND IL:APPLY IL:APROPOS IL:ARRAY IL:ARRAYP IL:ASSOC IL:ATAN IL:ATOM IL:BLOCK IL:BREAK IL:CHAR
IL:CHARACTER IL:CLOSE IL:COMMON IL:COMPILE IL:COMPILE-FILE IL:COS IL:COUNT IL:DEFSTRUCT IL:DELETE
IL:DESCRIBE IL:DIRECTORY IL:DO IL:DOCUMENTATION IL:ELT IL:EQUAL IL:ERROR IL:EVAL IL:EVERY IL:EXP
IL:EXPT IL:FILL-POINTER IL:FIND IL:FIRST IL:FLOATP IL:FLOOR IL:FORMAT IL:FUNCTION IL:GCD IL:GENSYM
IL:GETHASH IL:IF IL:INTERSECTION IL:KEYWORD IL:LABELS IL:LAMBDA IL:LDIFF IL:LENGTH IL:LISTP IL:LOAD
IL:LOCALLY IL:LOG IL:LOOP IL:MAP IL:MAPC IL:MAPCAR IL:MAPCON IL:MAPHASH IL:MAPLIST IL:MEMBER IL:MERGE
IL:MISMATCH IL:MOD IL:NAMESTRING IL:NOTANY IL:NOTEVERY IL:NTH IL:NUMBER IL:NUMBERP IL:NUMERATOR
IL:POP IL:POSITION IL:PRIN1 IL:PRINT IL:PUSH IL:PUSHNEW IL:RATIONAL IL:READ IL:READTABLE IL:REMOVE
IL:REPLACE IL:REST IL:REVERSE IL:SEARCH IL:SECOND IL:SETQ IL:SIGNED-BYTE IL:SIMPLE-STRING IL:SIN
IL:SOME IL:SORT IL:SQRT IL:STRINGP IL:STRUCTURE IL:SUBLIS IL:SUBSEQ IL:SUBST IL:SYMBOL IL:TAN
IL:TERPRI TRACE IL:UNION IL:UNLESS IL:VALUES IL:VARIABLE IL:VECTOR IL:WHEN IL:ZEROP IL:* IL:***))
```

"List of symbols whose lookup is preferred by the litatom to symbol converter. Initially it contains a list of symbols which are conflicting but are always qualified in old sources.")

```
(DEFUN IL:RESOLVE-READER-CONFLICT (IL:ILSYM IL:CLSYM IL:CLSYMWHERE)
  "Reader finds unqualified symbol that exists in both InterLisp and Lisp. Checks *PREFERRED-READING-SYMBOLS*
  list against names."
  (DECLARE (SPECIAL *PREFERRED-READING-SYMBOLS*))
  ;; CAUTION: Do not attempt to move the namestring check from \NEW.READ.SYMBOL into this function as RESOLVE-READER-CONFLICT has a
  ;; dummy definition in the INIT. Also, namestring resolutions must be made during the time that packages are turned off in the beginning of the INIT.
```

```
(COND
  ((NOT (EQ IL:CLSYMWHERE :EXTERNAL)) ; Will not resolve internal (therefore private) symbols from LISP
    IL:ILSYM)
  (T (LET ((IL:ILPREFERRED (MEMBER IL:ILSYM *PREFERRED-READING-SYMBOLS* :TEST 'EQ))
           (IL:CLPREFERRED (MEMBER IL:CLSYM *PREFERRED-READING-SYMBOLS* :TEST 'EQ)))
        (COND
          ((AND IL:ILPREFERRED (NOT IL:CLPREFERRED))
            IL:ILSYM)
          ((AND IL:CLPREFERRED (NOT IL:ILPREFERRED))
            IL:CLSYM)
          (T
            ; Raise the signal
            (RESTART-CASE (ERROR 'READ-CONFLICT :NAME (SYMBOL-NAME IL:ILSYM)
                               :PACKAGES
                               (LIST (FIND-PACKAGE "LISP")
                                     (FIND-PACKAGE "INTERLISP")))
              (PREFER-CLSYM-PROCEED NIL :CONDITION READ-CONFLICT :REPORT
                (LAMBDA (STREAM)
                  (FORMAT STREAM "Return the LISP symbol ~A; make it preferred" IL:CLSYM)
                  )
                IL:CLSYM)
              (PREFER-ILSYM-PROCEED NIL :CONDITION READ-CONFLICT :REPORT
                (LAMBDA (STREAM)
                  (FORMAT STREAM "Return the INTERLISP symbol ~A; make it preferred"
                               IL:ILSYM)
                  (SETQ *PREFERRED-READING-SYMBOLS* (REMOVE IL:CLSYM *PREFERRED-READING-SYMBOLS*
                                                            :TEST #'EQ))
                  (PUSH IL:ILSYM *PREFERRED-READING-SYMBOLS*)
                  IL:ILSYM)
                (RETURN-ILSYM-PROCEED NIL :CONDITION READ-CONFLICT :REPORT
                  (LAMBDA (STREAM)
                    (FORMAT STREAM "Just return the INTERLISP symbol ~A" IL:ILSYM)
                    IL:ILSYM))))))))))
```

```
(DEFUN IL:RESOLVE-MISSING-EXTERNAL-SYMBOL (IL:NAME PACKAGE)
  "Handle missing external symbols in a package during read."
  (LET ((IL:MY-CONDITION (MAKE-CONDITION 'MISSING-EXTERNAL-SYMBOL :NAME IL:NAME :PACKAGE PACKAGE)))
    (FLET ((IL:FILTER NIL (EQ *CURRENT-CONDITION* IL:MY-CONDITION))
           (RESTART-CASE (ERROR IL:MY-CONDITION)
             (MAKE-EXTERNAL-PROCEED NIL :FILTER IL:FILTER :REPORT (LAMBDA (STREAM)
               (FORMAT STREAM "Return a new
                               external symbol in
                               package ~A named ~A"
                               (PACKAGE-NAME PACKAGE)
                               IL:NAME))
             (LET ((IL:SYMBOL (INTERN IL:NAME PACKAGE)))
                 (EXPORT IL:SYMBOL PACKAGE)
                 IL:SYMBOL))
             (MAKE-INTERNAL-PROCEED NIL :FILTER IL:FILTER :REPORT (LAMBDA (STREAM)
               (FORMAT STREAM "Return a new
                               internal symbol in
                               package ~A named ~A"
                               (PACKAGE-NAME PACKAGE)
                               IL:NAME))
             (INTERN IL:NAME PACKAGE))))))
```

```
(DEFUN IL:RESOLVE-MISSING-PACKAGE (PACKAGE-NAME SYMBOL-NAME EXTERNALP)
  (LET ((IL:MY-CONDITION (MAKE-CONDITION 'MISSING-PACKAGE :PACKAGE-NAME PACKAGE-NAME :SYMBOL-NAME SYMBOL-NAME
                                         :EXTERNAL EXTERNALP)))
    (FLET ((IL:FILTER NIL (EQ *CURRENT-CONDITION* IL:MY-CONDITION))
           (RESTART-CASE (ERROR IL:MY-CONDITION)
             (NEW-PACKAGE-PROCEED NIL :FILTER IL:FILTER :REPORT (LAMBDA (STREAM)
               (FORMAT STREAM "Return new symbol
                               named ~A made in new
                               package ~A" SYMBOL-NAME
                               PACKAGE-NAME))
             (LET* ((PACKAGE (MAKE-PACKAGE (MISSING-PACKAGE-PACKAGE-NAME IL:MY-CONDITION)))
                   (SYMBOL (INTERN (MISSING-PACKAGE-SYMBOL-NAME IL:MY-CONDITION)
                                   PACKAGE)))
                 (WHEN (MISSING-PACKAGE-EXTERNAL IL:MY-CONDITION)
                     (EXPORT SYMBOL PACKAGE))
                 SYMBOL))
             (UGLY-SYMBOL-PROCEED NIL :FILTER IL:FILTER :REPORT (LAMBDA (STREAM)
               (FORMAT STREAM "Return new ugly
                               symbol |~a~a~a| made in
                               current package ~a"
                               PACKAGE-NAME
```

```

(IF EXTERNALP
  ":"
  "::~")
SYMBOL-NAME
(PACKAGE-NAME *PACKAGE*)
))

```

```

:INTERACTIVE
(LAMBDA NIL (LIST *PACKAGE*))
(INTERN (IL:CONCAT (MISSING-PACKAGE-PACKAGE-NAME IL:MY-CONDITION)
  (IF (MISSING-PACKAGE-EXTERNAL IL:MY-CONDITION)
    ":"
    "::~")
  (MISSING-PACKAGE-SYMBOL-NAME IL:MY-CONDITION)
  *PACKAGE*))))))

```

```

(DEFINE-CONDITION PACKAGE-ERROR (ERROR)
  (PACKAGE))

```

```

(DEFINE-CONDITION SYMBOL-CONFLICT (PACKAGE-ERROR)
  (SYMBOLS))

```

```

(DEFINE-CONDITION USE-CONFLICT (SYMBOL-CONFLICT)
  (USED-PACKAGE)
  (:REPORT (LAMBDA (CONDITION *STANDARD-OUTPUT*)
    (FORMAT T "Package ~a using ~a results in name conflicts for symbols::~~{s ~}"
      (PACKAGE-NAME (USE-CONFLICT-PACKAGE CONDITION))
      (PACKAGE-NAME (USE-CONFLICT-USED-PACKAGE CONDITION))
      (USE-CONFLICT-SYMBOLS CONDITION))))))

```

```

(DEFINE-CONDITION EXPORT-CONFLICT (SYMBOL-CONFLICT)
  (EXPORTED-SYMBOLS PACKAGES)
  (:REPORT (LAMBDA (CONDITION *STANDARD-OUTPUT*)
    (FORMAT T "Exporting these symbols from the ~a package::~~{s ~} results in name conflicts
with package(s)::~{a ~}:" (PACKAGE-NAME (EXPORT-CONFLICT-PACKAGE CONDITION))
  (EXPORT-CONFLICT-SYMBOLS CONDITION)
  (MAPCAR #'PACKAGE-NAME (EXPORT-CONFLICT-PACKAGES CONDITION))))))

```

```

(DEFINE-CONDITION EXPORT-MISSING (PACKAGE-ERROR)
  (SYMBOLS)
  (:REPORT (LAMBDA (CONDITION *STANDARD-OUTPUT*)
    (FORMAT T "These symbols aren't in package ~a; can't export them from it::~~{s ~}"
      (PACKAGE-NAME (EXPORT-MISSING-PACKAGE CONDITION))
      (EXPORT-MISSING-SYMBOLS CONDITION))))))

```

```

(DEFINE-CONDITION IMPORT-CONFLICT (SYMBOL-CONFLICT)
  NIL
  (:REPORT (LAMBDA (CONDITION *STANDARD-OUTPUT*)
    (FORMAT T "Importing these symbols into package ~a causes a name conflict::~~{s ~}"
      (PACKAGE-NAME (IMPORT-CONFLICT-PACKAGE CONDITION))
      (IMPORT-CONFLICT-SYMBOLS CONDITION))))))

```

```

(DEFINE-CONDITION UNINTERN-CONFLICT (SYMBOL-CONFLICT)
  (SYMBOL)
  (:REPORT (LAMBDA (CONDITION *STANDARD-OUTPUT*)
    (FORMAT T "Uninterning symbol ~s causes a name conflict among these symbols::~~{s ~}"
      (UNINTERN-CONFLICT-SYMBOL CONDITION)
      (UNINTERN-CONFLICT-SYMBOLS CONDITION))))))

```

```

(DEFUN IL:RESOLVE-USE-PACKAGE-CONFLICT (USED-PACKAGE SYMBOLS PACKAGE)
  "Handle a conflict from use-package."
  (SETQ SYMBOLS (SORT SYMBOLS 'STRING<))
  (LET ((MY-CONDITION (MAKE-CONDITION 'USE-CONFLICT :PACKAGE PACKAGE :SYMBOLS SYMBOLS :USED-PACKAGE
    USED-PACKAGE)))
    (FLET ((FILTER NIL (EQ *CURRENT-CONDITION* MY-CONDITION))
      (RESTART-CASE (ERROR MY-CONDITION)
        (SHADOW-USE-CONFLICTS-PROCEED NIL :FILTER FILTER :REPORT (LAMBDA (STREAM)
          (FORMAT STREAM "Shadow
conflicting symbols
from ~A in ~A"
(PACKAGE-NAME
  USED-PACKAGE)
(PACKAGE-NAME
  PACKAGE))))))
      (DOLIST (SYMBOL SYMBOLS)
        (SHADOW SYMBOL PACKAGE)))
      (UNINTERN-USER-PROCEED NIL :FILTER FILTER :REPORT (LAMBDA (STREAM)
        (FORMAT STREAM "Unintern all
conflicting symbols from ~A
(DANGEROUS)" (PACKAGE-NAME

```

```

(PACKAGE)))
(DOLIST (SYMBOL SYMBOLS)
  (IL:MOBY-UNINTERN SYMBOL PACKAGE)))
(UNINTERN-USEE-PROCEED NIL :FILTER FILTER :REPORT (LAMBDA (STREAM)
  (FORMAT STREAM "Unintern all
    conflicting symbols from ~A
    (VERY DANGEROUS)"
    (PACKAGE-NAME USED-PACKAGE)
  ))
(DOLIST (SYMBOL SYMBOLS)
  (IL:MOBY-UNINTERN (FIND-SYMBOL (SYMBOL-NAME SYMBOL)
    USED-PACKAGE)
  USED-PACKAGE)))
(ABORT NIL :FILTER FILTER :REPORT (LAMBDA (STREAM)
  (FORMAT STREAM "Abort making package ~a use ~a"
    (PACKAGE-NAME PACKAGE)
    (PACKAGE-NAME USED-PACKAGE)))
  (IL:RETFROM 'USE-PACKAGE NIL))))))

```

```

(DEFUN IL:RESOLVE-EXPORT-CONFLICT (PACKAGE SYMBOLS PACKAGES EXPORTED-SYMBOLS)
  "Handle a conflict raised by export."
  (IL:SETQ SYMBOLS (SORT SYMBOLS 'STRING<))
  (SETQ PACKAGES (SORT PACKAGES #'(LAMBDA (A B)
    (STRING< (PACKAGE-NAME A)
      (PACKAGE-NAME B))))))
  (LET ((MY-CONDITION (MAKE-CONDITION 'EXPORT-CONFLICT :PACKAGE PACKAGE :SYMBOLS SYMBOLS :EXPORTED-SYMBOLS
    EXPORTED-SYMBOLS :PACKAGES PACKAGES)))
    (FLET ((FILTER NIL (EQ *CURRENT-CONDITION* MY-CONDITION))
      (RESTART-CASE (ERROR MY-CONDITION)
        (UNINTERN-PROCEED NIL :FILTER FILTER :REPORT (LAMBDA (STREAM)
          (FORMAT STREAM "Unintern all
            conflicting symbols in
            package-P~{ ~a~} (DANGEROUS)"
            (IF (NULL (REST PACKAGES))
              0
              1)
            (MAPCAR #'PACKAGE-NAME PACKAGES)
          ))
          (DOLIST (PACKAGE PACKAGES EXPORTED-SYMBOLS)
            (DOLIST (SYMBOL SYMBOLS)
              (IL:MOBY-UNINTERN (FIND-SYMBOL (SYMBOL-NAME SYMBOL)
                PACKAGE)
                PACKAGE))))))
      (ABORT NIL :FILTER FILTER :REPORT (LAMBDA (STREAM)
        (FORMAT STREAM "Abort exporting the symbols from
          package ~a" (PACKAGE-NAME PACKAGE)))
        (IL:RETFROM 'EXPORT NIL))))))

```

```

(DEFUN IL:RESOLVE-EXPORT-MISSING (PACKAGE SYMBOLS)
  "Handle missing symbols needed to export."
  (SETQ SYMBOLS (SORT SYMBOLS 'STRING<))
  (LET ((MY-CONDITION 'EXPORT-MISSING :PACKAGE PACKAGE :SYMBOLS SYMBOLS (MAKE-CONDITION)))
    (FLET ((FILTER NIL (EQ *CURRENT-CONDITION* MY-CONDITION))
      (RESTART-CASE (ERROR MY-CONDITION)
        (IMPORT-PROCEED NIL :FILTER FILTER :REPORT (LAMBDA (STREAM)
          (FORMAT STREAM "Import missing symbols
            into ~A, then export them" PACKAGE
          ))
          (IMPORT SYMBOLS PACKAGE)))
      (ABORT NIL :FILTER FILTER :REPORT (LAMBDA (STREAM)
        (FORMAT STREAM "Abort export from package ~A"
          PACKAGE))
        (IL:RETFROM 'EXPORT NIL))))))

```

```

(DEFUN IL:RESOLVE-IMPORT-CONFLICT (PACKAGE SYMBOLS)
  "Handle conflict signalled by import. Returning from here does shadowing import."
  (SETQ SYMBOLS (SORT SYMBOLS 'STRING<))
  (LET ((MY-CONDITION (MAKE-CONDITION 'IMPORT-CONFLICT :PACKAGE PACKAGE :SYMBOLS SYMBOLS)))
    (FLET ((FILTER NIL (EQ *CURRENT-CONDITION* MY-CONDITION))
      (RESTART-CASE (ERROR MY-CONDITION)
        (SHADOWING-IMPORT-PROCEED NIL :FILTER FILTER :REPORT (LAMBDA (STREAM)
          (FORMAT STREAM "Import symbols
            into ~S with ~S
            instead" (PACKAGE-NAME
              PACKAGE)
            'SHADOWING-IMPORT))
          NIL)
      (ABORT NIL :FILTER FILTER :REPORT (LAMBDA (STREAM)
        (FORMAT STREAM "Abort import into package ~S"
          (PACKAGE-NAME PACKAGE)))
        (IL:RETFROM 'IMPORT NIL))))))

```

```

(DEFUN IL:RESOLVE-UNINTERN-CONFLICT (SYMBOL SYMBOLS PACKAGE)

```

```
"Handle a conflict noted by unintern."
(SETQ SYMBOLS (SORT SYMBOLS 'STRING<))
(LET ((MY-CONDITION (MAKE-CONDITION 'UNINTERN-CONFLICT :SYMBOL SYMBOL :SYMBOLS SYMBOLS :PACKAGE PACKAGE)))
  (FLET ((FILTER NIL (EQ *CURRENT-CONDITION* MY-CONDITION)))
    (RESTART-CASE (ERROR MY-CONDITION)
      (SHADOWING-IMPORT-PROCEED (SYMBOL-TO-IMPORT)
        :FILTER FILTER :REPORT (LAMBDA (STREAM)
          (FORMAT STREAM "Choose symbol and ~S it to hide
            conflicts in package ~S" 'SHADOWING-IMPORT
            (PACKAGE-NAME PACKAGE))))
      :INTERACTIVE
      (LAMBDA NIL
        (LOOP (LET ((SYMBOL (IL:MENU (IL:CREATE IL:MENU
          IL:TITLE IL:_ "Choose symbol to
            shadowing-import"
          IL:ITEMS IL:_ SYMBOLS
          IL:CENTERFLG IL:_ T))))
          (WHEN (MEMBER SYMBOL SYMBOLS :TEST #'EQ)
            (RETURN (LIST SYMBOL))))))
          (SHADOWING-IMPORT SYMBOL-TO-IMPORT PACKAGE)
          (IL:RETFROM 'IL:RESOLVE-UNINTERN-CONFLICT T))
          (ABORT NIL :FILTER FILTER :REPORT (LAMBDA (STREAM)
            (FORMAT STREAM "Abort unintern of symbol ~s from
              package ~s" SYMBOL (PACKAGE-NAME PACKAGE))))
          (IL:RETFROM 'UNINTERN NIL))))))
```

```
(DEFINE-CONDITION SYMBOL-COLON-ERROR (READ-ERROR)
  (NAME)
  (:REPORT (LAMBDA (CONDITION *STANDARD-OUTPUT*)
    (FORMAT T "Invalid symbol syntax in \"~A\" (SYMBOL-COLON-ERROR-NAME CONDITION))))))
```

```
(DEFUN IL:\INVALID.SYMBOL (BASE LEN NCOLONS PACKAGE EXTRASEGMENTS)
```

:: Called when scanning a symbol that has more than 2 colons, or more than 1 non-consecutive colon. If return from here, will read the symbol as
 :: though the extra colons were escaped.

```
(DECLARE (SPECIAL IL:\FATPNAMESTRINGP) ; This ain't my fault, honest.
)
(LET ((MY-CONDITION (MAKE-CONDITION 'SYMBOL-COLON-ERROR :NAME (IL:CONCAT (IF (AND PACKAGE
  (NOT (EQ PACKAGE
    IL:*KEYWORD-PACKAGE*
  )))
  (IF (STRINGP PACKAGE)
    PACKAGE
    (PACKAGE-NAME PACKAGE)
  " "
  (CASE NCOLONS
    (1 ":")
    (2 "::")
    (T ""))
  (IL:\GETBASESTRING BASE 0 LEN
    IL:\FATPNAMESTRINGP))))))
  (RESTART-CASE (ERROR MY-CONDITION)
    (ESCAPE-COLONS-PROCEED NIL :FILTER (LAMBDA NIL (EQ *CURRENT-CONDITION* MY-CONDITION))
      :REPORT "Treat the extra colon(s) as if they were escaped" NIL)))
```

:: Symbol inspector

```
(DEFUN IL:SYMBOL-INSPECT-FETCHFN (IL:OBJECT IL:PROPERTY)
  (CASE IL:PROPERTY
    (IL:NAME (SYMBOL-NAME IL:OBJECT))
    (IL:VALUE (IF (BOUNDP IL:OBJECT)
      (SYMBOL-VALUE IL:OBJECT)
      'IL:NOBIND))
    (IL:PLIST (SYMBOL-PLIST IL:OBJECT))
    (PACKAGE (SYMBOL-PACKAGE IL:OBJECT))))
```

```
(DEFUN IL:SYMBOL-INSPECT-STOREFN (IL:OBJECT IL:PROPERTY IL:VALUE)
  (CASE IL:PROPERTY
    (IL:NAME (IL:PROMPTPRINT "Can't set symbol name"))
    (IL:VALUE (SETF (SYMBOL-VALUE IL:OBJECT)
      IL:VALUE))
    (IL:PLIST (SETF (SYMBOL-PLIST IL:OBJECT)
      IL:VALUE))
    (PACKAGE (SETF (SYMBOL-PACKAGE IL:OBJECT)
      IL:VALUE))))
```

```
(LET ((IL:FORM '( (IL:FUNCTION SYMBOLP)
  (IL:NAME IL:VALUE IL:PLIST PACKAGE)
  IL:SYMBOL-INSPECT-FETCHFN IL:SYMBOL-INSPECT-STOREFN NIL NIL NIL "Symbol inspector")))
  (COND
    ((NOT (IL:MEMBER IL:FORM IL:INSPECTMACROS))
      (IL:push| IL:INSPECTMACROS IL:FORM))))
```

:: Package inspector

```

(DEFUN IL:PACKAGE-INSPECT-FETCHFN (IL:OBJECT IL:PROPERTY)
  (CASE IL:PROPERTY
    (IL:NAME (CL::%PACKAGE-NAME IL:OBJECT))
    (IL:NICKNAMES (CL::%PACKAGE-NICKNAMES IL:OBJECT))
    (IL:USE-LIST (CL::%PACKAGE-USE-LIST IL:OBJECT))
    (IL:INTERNAL-SYMBOLS (CL::%PACKAGE-INTERNAL-SYMBOLS IL:OBJECT))
    (IL:EXTERNAL-SYMBOLS (CL::%PACKAGE-EXTERNAL-SYMBOLS IL:OBJECT))
    (IL:SHADOWING-SYMBOLS (CL::%PACKAGE-SHADOWING-SYMBOLS IL:OBJECT))))

(DEFUN IL:PACKAGE-INSPECT-STOREFN (IL:OBJECT IL:PROPERTY IL:VALUE)
  (IL:PROMPTPRINT "Can't set the fields of a package"))

(LET ((IL:FORM ' ((IL:FUNCTION PACKAGEP)
  (IL:NAME IL:NICKNAMES IL:USE-LIST IL:INTERNAL-SYMBOLS IL:EXTERNAL-SYMBOLS IL:SHADOWING-SYMBOLS)
  IL:PACKAGE-INSPECT-FETCHFN IL:PACKAGE-INSPECT-STOREFN NIL NIL NIL "Package inspector")))
  (COND
    ((NOT (IL:MEMBER IL:FORM IL:INSPECTMACROS))
      (IL:push| IL:INSPECTMACROS IL:FORM))))

```

:: Package-hashtable inspector

```

(DEFUN IL:PACKAGE-HASHTABLE-INSPECT-FETCHFN (IL:OBJECT IL:PROPERTY)
  (CASE IL:PROPERTY
    (IL:SIZE (CL::PACKAGE-HASHTABLE-SIZE IL:OBJECT))
    (IL:FREE (CL::PACKAGE-HASHTABLE-FREE IL:OBJECT))
    (IL:DELETED (CL::PACKAGE-HASHTABLE-DELETED IL:OBJECT))
    (IL:CONTENTS (CL::PACKAGE-HASHTABLE-TABLE IL:OBJECT))))

(DEFUN IL:PACKAGE-HASHTABLE-INSPECT-STOREFN (IL:OBJECT IL:PROPERTY IL:VALUE)
  (IL:PROMPTPRINT "Can't set the fields of a package-hashtable"))

(LET ((IL:FORM ' ((IL:FUNCTION CL::PACKAGE-HASHTABLE-P)
  (IL:SIZE IL:FREE IL:DELETED IL:CONTENTS)
  IL:PACKAGE-HASHTABLE-INSPECT-FETCHFN IL:PACKAGE-HASHTABLE-INSPECT-STOREFN))
  (COND
    ((NOT (IL:MEMBER IL:FORM IL:INSPECTMACROS))
      (IL:push| IL:INSPECTMACROS IL:FORM))))

```

:: Package's Prefix accessor and setfs (Edited by TT 14-June-90 for AR#11112)

```

(DEFUN PACKAGE-PREFIX (PACKAGE) ; Edited by TT (14-June-90 : for AR#111122)
  (CL::%PACKAGE-NAMESYMBOL (IL:\\PACKAGIFY PACKAGE)))

(DEFUN SETF-PACKAGE-PREFIX (PACKAGE PREFIX) ; Edited by TT (14-June-90 : for AR#111122)
  (IF (SYMBOLP PREFIX)
    (SETF (CL::%PACKAGE-NAMESYMBOL (IL:\\PACKAGIFY PACKAGE))
      PREFIX)
    (IF (STRINGP PREFIX)
      (SETF (CL::%PACKAGE-NAMESYMBOL (IL:\\PACKAGIFY PACKAGE))
        (INTERN PREFIX))
      (ERROR "~S must be symbol or string." PREFIX))))

(DEFSETF PACKAGE-PREFIX SETF-PACKAGE-PREFIX)

(IL:PUTPROPS IL:CMLPACKAGE IL:FILETYPE :COMPILE-FILE)
(IL:PUTPROPS IL:CMLPACKAGE IL:MAKEFILE-ENVIRONMENT (:READTABLE "XCL" :PACKAGE "XCL"))
(IL:DECLARE\ : IL:DONTEVAL@LOAD IL:DOEVAL@COMPILE IL:DONTCOPY IL:COMPILERVERS
(IL:ADDTOVAR IL:NLAMA )
(IL:ADDTOVAR IL:NLAML )
(IL:ADDTOVAR IL:LAMA )
)
(IL:PUTPROPS IL:CMLPACKAGE IL:COPYRIGHT ("Venue & Xerox Corporation" 1986 1987 1988 1990))

```

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