

File created: 16-May-90 14:58:17 {DSK}<usr>local>lde>lispcore>sources>COMMON.;2

changes to: (VARS COMMONCOMS)

previous date: 30-Mar-87 16:57:29 {DSK}<usr>local>lde>lispcore>sources>COMMON.;1

Read Table: INTERLISP

Package: INTERLISP

Format: XCCS

;;  
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(RPAQQ **COMMONCOMS**

```
  [[COMS                                     ; BQUOTE
    (FNS READBQUOTE READBQUOTECOMMA \UNCOMMA \BQUOTE.BREAKRESET)
    (VARIABLES SI::*BACKQUOTE-LEVEL*)
    (FUNCTIONS SI::BQUOTE-EXPANDER SI::BQUOTE-PROCESS-LIST SI::BQUOTE-CONS SI::BQUOTE-APPEND
      SI::BQUOTE-NCONC SI::COMMA-ERROR-EXPANDER . `SI::BQUOTE)
    (P (CL:SETF (CL:MACRO-FUNCTION '\, )
      'SI::COMMA-ERROR-EXPANDER)
      (CL:SETF (CL:MACRO-FUNCTION '\, @)
      'SI::COMMA-ERROR-EXPANDER)
      (CL:SETF (CL:MACRO-FUNCTION '\, .)
      'SI::COMMA-ERROR-EXPANDER))
    (DECLARE%: DONTEVAL@LOAD DOCOPY (VARS (\INBQUOTE))
      (ADDVARS (BREAKRESETFORMS (\BQUOTE.BREAKRESET]
  (COMS                                     ; Pretty printing of quote and friends
    (FNS QUOTE.WRAPPER BQUOTE.WRAPPER FUNCTION.WRAPPER)
    (PROP PRETTYWRAPPER BQUOTE SI::BQUOTE CL:FUNCTION QUOTE \, . %, .\, @))
    (PROP FILETYPE COMMON)
    (DECLARE%: DONTEVAL@LOAD DOEVAL@COMPILE DONTCOPY COMPILEVARS (ADDVARS (NLAMA)
      (NLAML)
      (LAMA]))
```

;; BQUOTE

(DEFINEQ

(**READBQUOTE**

```
  [LAMBDA (FILE)                                     ; Edited 19-Mar-87 16:41 by bvm:
    (LET ((\INBQUOTE T))
      (DECLARE (SPECVARS \INBQUOTE))
      (LIST 'BQUOTE (CL:READ FILE T NIL T]))
```

(**READBQUOTECOMMA**

```
  [LAMBDA (FILE)
    (DECLARE (USEDFREE \INBQUOTE))
    (if (OR (fetch (READTABLEP COMMONLISP) of *READTABLE*)
      \INBQUOTE)
      then
        (LIST (SELCHARQ (SKIPSEPRCODES FILE)
          (@ (READCCODE FILE)
            '\, @)
          (%. (READCCODE FILE)
            '\, .)
          '\, )
          (CL:READ FILE T NIL T))
      else
```

;; Comma outside of backquote context is 'an error'

;; In Interlisp read table we want to treat it as though it had been escaped, because files written with old FILERDTBL might have had  
;; unescaped commas in them. In Common Lisp, we go ahead and read it as if we were in bquote context, for the benefit of typing  
;; subexpressions to DEdit

```
    (LET ((CH (PEEKCCODE FILE)))
      (if (OR (SYNTAXP CH 'BREAK)
        (SYNTAXP CH 'SEPR))
        then '%,
        else (PACK* '%, (READ FILE]))
```

; Edited 19-Mar-87 16:45 by bvm:

; Valid context for comma

(**\UNCOMMA**

```
  [LAMBDA (X)                                     (* bvm%: "19-May-86 12:38")
```

(\* "Convert an old-style BQUOTE, where the commas were list elements, into the new style, where the commas are wrappers")

```
  (COND
    ((NLISTP X)
     X)
    (T (SELECTQ (CAR X)
      ((%, %, . %, @ ., %, !))
      (LET [(TAIL (\UNCOMMA (CDR X)
```

```

(CONS (LIST (SELECTQ (CAR X)
                    (% , ' \ ,)
                    (% , . ' \ , .)
                    ' \ , @)
        (CAR TAIL))
      (CDR TAIL)))
(LET [ (BCAR (\UNCOMMA (CAR X)))
      (BCDR (\UNCOMMA (CDR X)))
      (COND
        ((AND (EQ BCAR (CAR X))
              (EQ BCDR (CDR X)))
         X)
        (T (CONS BCAR BCDR))

```

## (\BQUOTE.BREAKRESET

```

[LAMBDA (FLG)
  (PROG1 \INBQUOTE (SETQ \INBQUOTE FLG))

```

(\* bvm%: " 6-Jul-85 23:19")

)

(CL:DEFVAR SI::\*BACKQUOTE-LEVEL\* 0)

```

(CL:DEFUN SI::BQUOTE-EXPANDER (SI::FORM SI::LEVEL)
  [LET ((SI::*BACKQUOTE-LEVEL* SI::LEVEL))
    (CL:IF (CL:ATOM SI::FORM)
      (KWOTE SI::FORM)
      (CASE (CAR SI::FORM)
        ((SI::BQUOTE BQUOTE) (SI::BQUOTE-EXPANDER (SI::BQUOTE-EXPANDER (CADR SI::FORM)
                                                                              (CL:1+ SI::LEVEL))
              (CL:1+ SI::LEVEL))
          ; form is non-NIL
          ((\ ,) (CADR SI::FORM)) ; 'foo => foo
          ((\ , @) (CL:ERROR ",@ in illegal context: ,@~S" (CADR SI::FORM)))
          ((\ , .) (CL:ERROR ",. in illegal context: ,.~S" (CADR SI::FORM)))
          (CL:OTHERWISE (SI::BQUOTE-PROCESS-LIST SI::FORM))))])

```

(CL:DEFUN SI::BQUOTE-PROCESS-LIST (LIST)

;; Expand backquoted list.

```

(CL:IF (CL:ATOM LIST)
  (KWOTE LIST) ; (KWOTE NIL) => NIL, so this is OK.
  [LET ((SI::ITEM (CAR LIST))
        (SI::TAIL (CDR LIST)))
    (CASE SI::ITEM
      ((\ ,) (CAR SI::TAIL))
      ((\ , @) (CL:ERROR ",@ in illegal context: ,@~S" (CAR SI::TAIL)))
      ((\ , .) (CL:ERROR ",. in illegal context: ,.~S" (CAR SI::TAIL)))
      (CL:OTHERWISE (CL:IF (CL:ATOM SI::ITEM)
        (SI::BQUOTE-CONS (KWOTE SI::ITEM)
          ; save a call to bquote-expander.
          (SI::BQUOTE-PROCESS-LIST SI::TAIL))
        (CASE (CAR SI::ITEM)
          ((\ ,) (SI::BQUOTE-CONS (CADR SI::ITEM)
            (SI::BQUOTE-PROCESS-LIST SI::TAIL)))
          ((\ , @) (SI::BQUOTE-APPEND (CADR SI::ITEM)
            (SI::BQUOTE-PROCESS-LIST SI::TAIL)))
          ((\ , .) (SI::BQUOTE-NCONC (CADR SI::ITEM)
            (SI::BQUOTE-PROCESS-LIST SI::TAIL)))
          (CL:OTHERWISE (SI::BQUOTE-CONS (SI::BQUOTE-EXPANDER SI::ITEM
            SI::*BACKQUOTE-LEVEL*)
            (SI::BQUOTE-PROCESS-LIST SI::TAIL)))))))]])

```

(CL:DEFUN SI::BQUOTE-CONS (SI::BCAR SI::BCDR)

;; build a call to CONS of bcar and bcdr, optimizing where possible.

```

[LET (SI::CONSTA SI::CONSTD)
  (COND
    [(AND (CL:SETQ SI::CONSTA (CONSTANTEXPRESSONP SI::BCAR))
          (CL:SETQ SI::CONSTD (CONSTANTEXPRESSONP SI::BCDR)))
      (KWOTE (CONS (CL:FIRST SI::CONSTA)
                    (CL:FIRST SI::CONSTD))
      (NULL SI::BCDR)
      ;; (cons x nil) => (list x)
      (LIST 'LIST SI::BCAR))
    [(CL:LISP SI::BCDR)
      (CASE (CL:FIRST SI::BCDR)
        ((CONS LIST*)
          ;; (cons x (cons . rest)) => (list* x . rest)
          ;; (cons x (list* . rest)) => (list* x . rest)
          (LIST* 'LIST* SI::BCAR (CL:REST SI::BCDR)))
        (LIST

```

```

;; (cons x (list . rest)) => (list x . rest)
      (LIST* 'LIST SI::BCAR (CL:REST SI::BCDR)))
      (CL:OTHERWISE (LIST 'CONS SI::BCAR SI::BCDR))))]
(T (LIST 'CONS SI::BCAR SI::BCDR])

```

```
(CL:DEFUN SI::BQUOTE-APPEND (SI::HEAD SI::TAIL)

```

```
;; create a call to APPEND of head and tail, optimizing where possible.

```

```

[COND
  ((NULL SI::HEAD)
   (CL:IF (CL:ZEROP SI::*BACKQUOTE-LEVEL*)
    SI::TAIL
    (LIST 'CL:APPEND SI::TAIL)))
  ((NULL SI::TAIL)
   (CL:IF (CL:ZEROP SI::*BACKQUOTE-LEVEL*)
    SI::HEAD
    (LIST 'CL:APPEND SI::HEAD)))
  (T (CASE (CAR (LISTP SI::HEAD))
    (CONS
     ;; (append (cons x y) z) => (cons x (append y z))
     (SI::BQUOTE-CONS (CL:SECOND SI::HEAD)
      (SI::BQUOTE-APPEND (CL:THIRD SI::HEAD)
       SI::TAIL)))
    (LIST
     ;; (append (list ...) x) => (list* ... x)
     (CONS 'LIST* (APPEND (CL:REST SI::HEAD)
      (LIST SI::TAIL))))
    (LIST*
     ;; (append (list* ... x) y) => (list* ... (append x y))
     [CONS 'LIST* (CL:APPEND (CL:BUTLAST (CL:REST SI::HEAD))
      (LIST (SI::BQUOTE-APPEND (CAR (LAST SI::HEAD))
       SI::TAIL))]
    ((CL:APPEND NCONC)
     ;; (append (append ...) x) => (append ... x)
     [CONS 'CL:APPEND (APPEND (CL:REST SI::HEAD)
      (CL:IF (EQ (CL:FIRST (LISTP SI::TAIL))
       'CL:APPEND)
       (CL:REST SI::TAIL)
       (LIST SI::TAIL)))]
    (CL:OTHERWISE (CL:IF (EQ (CL:FIRST (LISTP SI::TAIL))
      'CL:APPEND)
      (LIST* 'CL:APPEND SI::HEAD (CL:REST SI::TAIL))
      (LIST 'CL:APPEND SI::HEAD SI::TAIL))))]))

```

```
(CL:DEFUN SI::BQUOTE-NCONC (SI::HEAD SI::TAIL)

```

```
;; create a call to NCONC of head and tail, optimizing where possible.

```

```

[COND
  ((NULL SI::HEAD)
   (CL:IF (CL:ZEROP SI::*BACKQUOTE-LEVEL*)
    SI::TAIL
    (LIST 'NCONC SI::TAIL)))
  ((NULL SI::TAIL)
   (CL:IF (CL:ZEROP SI::*BACKQUOTE-LEVEL*)
    SI::HEAD
    (LIST 'NCONC SI::HEAD)))
  (T (CASE (CL:FIRST (LISTP SI::HEAD))
    (CONS
     ;; (nconc (cons x y) z) => (cons x (nconc y z))
     (SI::BQUOTE-CONS (CL:SECOND SI::HEAD)
      (SI::BQUOTE-NCONC (CL:THIRD SI::HEAD)
       SI::TAIL)))
    ((LIST LIST* CL:APPEND)
     ;; since you're splicing new structure, may as well use append and it's optimizations.
     (SI::BQUOTE-APPEND SI::HEAD SI::TAIL))
    (NCONC
     ;; (nconc (nconc ...) y) => (nconc ... y)
     [CONS 'NCONC (APPEND (CL:REST SI::HEAD)
      (CL:IF (EQ (CAR (LISTP SI::TAIL))
       'NCONC)
       (CL:REST SI::TAIL)
       (LIST SI::TAIL)))]
    (CL:OTHERWISE (CL:IF (EQ (CAR (LISTP SI::TAIL))
      'NCONC)
      (LIST* 'NCONC SI::HEAD (CL:REST SI::TAIL))
      (LIST 'NCONC SI::HEAD SI::TAIL))))]))

```

```
(CL:DEFUN SI::COMMA-ERROR-EXPANDER (SI::FORM SI::ENV)
  (CL:ERROR "Tried to evaluate ~A~S outside of a backquote scope.~%%Probably a missing backquote or too many
    commas." (CL:ECASE (CL:FIRST SI::FORM)
      ((\,) "\",")
      ((\,@) "\",@")
      ((\,. ) "\",. ")
    )
  (CL:SECOND SI::FORM)))
```

```
(DEFMACRO BQUOTE (FORM)
  (SI::BQUOTE-EXPANDER (\UNCOMMA FORM)
  0))
```

```
(DEFMACRO SI::BQUOTE (SI::FORM)
  (SI::BQUOTE-EXPANDER (\UNCOMMA SI::FORM)
  0))
```

```
(CL:SETF (CL:MACRO-FUNCTION '\, )
  'SI::COMMA-ERROR-EXPANDER)
```

```
(CL:SETF (CL:MACRO-FUNCTION '\,@ )
  'SI::COMMA-ERROR-EXPANDER)
```

```
(CL:SETF (CL:MACRO-FUNCTION '\,. )
  'SI::COMMA-ERROR-EXPANDER)
```

```
(DECLARE%: DONTVAL@LOAD DOCOPY
```

```
(RPAQQ \INBQUOTE NIL)
```

```
(ADDTOVAR BREAKRESETFORMS (\BQUOTE.BREAKRESET) )
)
```

:: Pretty printing of quote and friends

```
(DEFINEQ
```

```
(QUOTE.WRAPPER
```

```
  [LAMBDA (E FILE)
    (LET [(SYN (GETSYNTAX '%')]
      (AND (LISTP SYN)
        (EQ (CAR (LAST SYN))
          'READQUOTE)
        "' " ])
```

```
(* bvm%: " 4-Jun-86 18:19")
```

```
(BQUOTE.WRAPPER
```

```
  [LAMBDA (E FILE)
    (* "To print bquote wrappers in their original syntax")
    (AND [MEMB 'READBQUOTE (LISTP (GETSYNTAX '%'))
      (SELECTQ (CAR E)
        (BQUOTE "``")
        (\, "\",")
        (\,. ",.")
        (\,@ "\",@")
        NIL])
```

```
(* bvm%: " 4-Jun-86 18:20")
```

```
(FUNCTION.WRAPPER
```

```
  [LAMBDA (E FILE)
    (AND (EQ (fetch (READTABLEP HASHMACROCHAR) of (\GTREADTABLE NIL))
      (CHARCODE %#))
    "#' " ])
```

```
(* bvm%: "18-Apr-86 16:36")
```

```
)
```

```
(PUTPROPS BQUOTE PRETTYWRAPPER BQUOTE.WRAPPER)
```

```
(PUTPROPS SI::BQUOTE PRETTYWRAPPER BQUOTE.WRAPPER)
```

```
(PUTPROPS CL:FUNCTION PRETTYWRAPPER FUNCTION.WRAPPER)
```

```
(PUTPROPS QUOTE PRETTYWRAPPER QUOTE.WRAPPER)
```

```
(PUTPROPS \, PrettyWrapper BQUOTE.WRAPPER)
```

```
(PUTPROPS \,. PrettyWrapper BQUOTE.WRAPPER)
```

```
(PUTPROPS \@ PrettyWrapper BQUOTE.WRAPPER)
```

```
(PUTPROPS COMMON FILETYPE COMPILE-FILE)
```

```
(DECLARE%: DONTVAL@LOAD DOEVAL@COMPILE DONTCOPY COMPILEVARs
```

{MEDLEY}<sources>COMMON.;1

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(ADDTOVAR **NLAMA** )

(ADDTOVAR **NLAML** )

(ADDTOVAR **LAMA** )  
)

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