File created: 21-Mar-2024 13:31:40 **{DSK}<home>larry>il>medley>sources>XCL-HASH-LOOP.;9**

edit by: lmm

changes to: (FUNCTIONS TEST-HASH-LOOP)

previous date: 21-Mar-2024 11:19:24 {DSK}<home>larry>il>medley>sources>XCL-HASH-LOOP.;8

Read Table: INTERLISP

Package: INTERLISP

Format: XCCS

```
(RPAQQ XCL-HASH-LOOPCOMS ((FUNCTIONS HASH-TABLE-ITERATOR HASH-TABLE-ITERATOR-1 TEST-HASH-LOOP
                                 CL:WITH-HASH-TABLE-ITERATOR)
                          (DECLARE%: EVAL@COMPILE DONTCOPY (FILES (LOADCOMP)
                                                                  LLARRAYELT))
                          (PROP FILETYPE XCL-HASH-LOOP)))

(CL:DEFUN HASH-TABLE-ITERATOR (HASH-TABLE-LIST)          ; Edited 21-Mar-2024 09:49 by lmm
   [LET ((TABLES (MKLIST HASH-TABLE-LIST)))
        (COND
           ((NULL TABLES)
            NIL)
           ((NULL (CDR TABLES))
            (HASH-TABLE-ITERATOR-1 (CAR TABLES)))
           (T (LET [(ITERATOR (HASH-TABLE-ITERATOR-1 (CL:POP TABLES]
                   #'(CL:LAMBDA NIL (CL:LOOP (CL:MULTIPLE-VALUE-BIND (MORE KEY VALUE)
                                                 (CL:FUNCALL ITERATOR)
                                               (COND
                                                  (MORE (RETURN (CL:VALUES MORE KEY VALUE)))
                                                  [TABLES (CL:SETQ ITERATOR (HASH-TABLE-ITERATOR-1 (CL:POP
                                                                                                     TABLES
                                                                                                     ]

                                                  (T (RETURN NIL))))])

(CL:DEFUN HASH-TABLE-ITERATOR-1 (TABLE)                  ; Edited 19-Mar-2024 12:31 by lmm
   [LET* ((SLOT (fetch HARRAYPBASE of TABLE))
          [LASTSLOT (fetch (HASHSLOT NEXTSLOT) of (\HASHSLOT SLOT (fetch (HARRAYP LASTINDEX) of TABLE]
          (NULLVALUE \HASH.NULL.VALUE)
          K V)
         #'(CL:LAMBDA NIL (CL:BLOCK ITERATOR
                            (CL:LOOP (SETQ K (fetch (HASHSLOT KEY) of SLOT))
                                     (SETQ V (fetch (HASHSLOT VALUE) of SLOT))
                                     (CL:WHEN V
                                         ;; first non-empty slot
                                         (RETURN))
                                     (SETQ SLOT (fetch (HASHSLOT NEXTSLOT) of SLOT))
                                     (CL:WHEN (EQ SLOT LASTSLOT)
                                         ;; Out of slots to scan
                                         (CL:RETURN-FROM ITERATOR NIL)))
                            ;; SLOT is set and not at end
                            [CL:RETURN-FROM ITERATOR (CL:MULTIPLE-VALUE-PROG1 (CL:VALUES T K
                                                                                         (AND (NEQ NULLVALUE V)
                                                                                              V))
                                                                              (SETQ SLOT (fetch (HASHSLOT NEXTSLOT) of SLOT])]))

(CL:DEFUN TEST-HASH-LOOP (&OPTIONAL HA)                  ; Edited 21-Mar-2024 10:39 by lmm
   [IF (NOT HA)
       THEN (SETQ HA (HARRAY 7))
            (LET [(TRIALDATA '(1 2 A B "C" "D" 'EEEE 'FFFF (G)
                               (H]
                 (CL:LOOP FOR X ON TRIALDATA BY #'CDDR DO (CL:SETF (GETHASH (CL:FIRST X)
                                                                            HA)
                                                                   (CL:SECOND X]
   (LET (RESULT LOOPRESULT)
        [MAPHASH HA #'(LAMBDA (V K)
                        (PUSH RESULT (LIST K V]
        (SETQ RESULT (REVERSE RESULT))
        (SETQ LOOPRESULT (CL:LOOP FOR X BEING EACH HASH-KEY OF HA USING (HASH-VALUE V)
                                  COLLECT
                                  (LIST X V)))
        (OR (EQUAL RESULT LOOPRESULT)
            (COMPARELISTS RESULT LOOPRESULT))))

(DEFMACRO CL:WITH-HASH-TABLE-ITERATOR ((NAME HASH-TABLE-FORM)
                                       &BODY BODY)       ; Edited 18-Mar-2024 09:38 by larry
   [LET ((ITERATOR (CL:GENSYM)))
        `(LET [(,ITERATOR (HASH-TABLE-ITERATOR ,HASH-TABLE-FORM]
              (DECLARE (IGNORABLE ,ITERATOR))
```

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              (CL:MACROLET [(,NAME NIL '(CL:FUNCALL ,ITERATOR]
                     ,@BODY])

(DECLARE%: EVAL@COMPILE DONTCOPY

(FILESLOAD (LOADCOMP)
       LLARRAYELT)
)

(PUTPROPS XCL-HASH-LOOP FILETYPE CL:COMPILE-FILE)
```

FUNCTION INDEX

HASH-TABLE-ITERATOR .....1 HASH-TABLE-ITERATOR-1 .....1 TEST-HASH-LOOP 1

PROPERTY INDEX

XCL-HASH-LOOP 2

MACRO INDEX

CL:WITH-HASH-TABLE-ITERATOR 1
