

File created: 26-Jun-2022 18:34:22 {DSK}<Users>kaplan>Local>medley3.5>working-medley>lispusers>LIFE.;3

changes to: (FNS EXPAND.BITMAP.VERTICALLY EXPAND.BITMAP.HORIZONTALLY)

previous date: 6-Dec-2021 15:21:48 {DSK}<Users>kaplan>Local>medley3.5>working-medley>lispusers>LIFE.;2

Read Table: XCL

Package: INTERLISP

Format: XCCS

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```
(RPAQQ LIFEOMS
((PROP FILETYPE LIFE)
 (FUNCTIONS |Life| |LifeIdle|)
 (FNS EXPAND.BITMAP.VERTICALLY EXPAND.BITMAP.HORIZONTALLY)
 (ADDVARS (IDLE.FUNCTIONS ("Life" '|LifeIdle|' NIL (SUBITEMS ("Single bits" '|LifeIdle|'
 ("Double bits" '(LAMBDA (\w)
(|LifeIdle| \w 2)))
("Quadruple bits" '(LAMBDA (\w)
(|LifeIdle| \w 4)))
("Eight bits" '(LAMBDA (\w)
(|LifeIdle| \w 8))))))))))

(PUTPROPS LIFE FILETYPE :COMPILE-FILE)

(CL:DEFUN |Life| (WIN &OPTIONAL (N 1))
 (LET* ((W (WINDOWPROP WIN 'WIDTH))
 (W1 (IDIFFERENCE W N))
 (H (IQUOTIENT (WINDOWPROP WIN 'HEIGHT)
 N))
 (H1 (SUB1 H))
 (A (BITMAPCREATE W H))
 (B (BITMAPCREATE W H))
 (C (BITMAPCREATE W H))
 (D (BITMAPCREATE W H))
 (E (BITMAPCREATE W H))
 PBT TEMP)
 (|if| (NEQ N 1)
 |then| (SETQ TEMP (BITMAPCREATE (IQUOTIENT W N)
 H))
 (SETQ PBT (|create| PILOTBBT))
 (BITBLT WIN 0 0 TEMP 0 0)
 (EXPAND.BITMAP.HORIZONTALLY TEMP N A PBT)
 (SETQ TEMP (BITMAPCREATE W (WINDOWPROP WIN 'HEIGHT)))
 (BITBLT A 0 0 TEMP 0 0 W H)
 |else| (BITBLT WIN 0 0 A 0 0 W H))
 (CL:LOOP (BLOCK)
 (CL:MACROLET ((BITBLTBITMAP (SOURCE SOURCELEFT SOURCEBOTTOM DESTINATION DESTINATIONLEFT
 DESTINATIONBOTTOM WIDTH HEIGHT &OPTIONAL SOURCETYPE OPERATION)
 `(\BITBLT.BITMAP ,SOURCE ,SOURCELEFT ,SOURCEBOTTOM ,DESTINATION
 ,DESTINATIONLEFT
 ,DESTINATIONBOTTOM
 ,WIDTH
 ,HEIGHT
 ,SOURCETYPE
 ,OPERATION NIL NIL ,SOURCELEFT ,SOURCEBOTTOM))
 (SHUFFLE (INHI LO HORIZ?)
 ` (PROGN ,@(|if| HORIZ?
 |then| `((BITBLTBITMAP ,INHI N 0 ,LO 0 0 W1 H)
 (BITBLTBITMAP ,INHI 0 0 ,LO W1 0 N H)
 (BITBLTBITMAP ,INHI 0 0 C N 0 W1 H)
 (BITBLTBITMAP ,INHI W1 0 C 0 0 N H))
 |else| `((BITBLTBITMAP ,INHI 0 1 ,LO 0 0 W H1)
 (BITBLTBITMAP ,INHI 0 0 ,LO 0 H1 W 1)
 (BITBLTBITMAP ,INHI 0 0 C 0 1 W H1)
 (BITBLTBITMAP ,INHI 0 H1 C 0 0 W 1)))
 (BITBLTBITMAP C 0 0 ,LO 0 0 W H 'INPUT 'INVERT)
 (BITBLTBITMAP ,LO 0 0 C 0 0 W H 'INPUT 'ERASE)
 (BITBLTBITMAP ,INHI 0 0 ,LO 0 0 W H 'INPUT 'INVERT)
 (BITBLTBITMAP ,LO 0 0 ,INHI 0 0 W H 'INPUT 'ERASE)
 (BITBLTBITMAP C 0 0 ,INHI 0 0 W H 'INPUT 'PAINT))))
 (SHUFFLE A B T)
 (SHUFFLE B D NIL)
 (SHUFFLE A E NIL)
 (BITBLTBITMAP D 0 0 C 0 0 W H)
 (BITBLTBITMAP B 0 0 C 0 0 W H 'INPUT 'INVERT)
 (BITBLTBITMAP E 0 0 C 0 0 W H 'INPUT 'INVERT)
 (|if| (EQ N 1)
 |then| (BITBLT WIN 0 0 D 0 0 W H 'INPUT 'PAINT)
 |else| (BITBLTBITMAP TEMP 0 0 D 0 0 W H 'INPUT 'PAINT))
 (|if| (SHIFTDOWNP 'CTRL)
 |then| (BITBLTBITMAP D 0 0 A 0 0 W H)
 |else| (BITBLTBITMAP B 0 0 E 0 0 W H 'INPUT 'PAINT))
```

```

                (BITBLTBITMAP E 0 0 A 0 0 W H 'INPUT 'INVERT)
                (BITBLTBITMAP C 0 0 A 0 0 W H 'INPUT 'ERASE)
                (BITBLTBITMAP D 0 0 A 0 0 W H 'INVERT 'ERASE))
(|if| (EQ N 1)
 |then| (BITBLT A 0 0 WIN 0 0 W H)
 |else| (EXPAND.BITMAP.VERTICALLY A N TEMP PBT)
        (BITBLT TEMP 0 0 WIN 0 0)
        (BITBLTBITMAP A 0 0 TEMP 0 0 W H))))))

```

```

(CL:DEFUN |Lifeldle| (\w &OPTIONAL (\n 1))
  (BITBLT (WINDOWPROP \w 'IMAGECOVERED)
    0 0 \w)
  (|Life| \w \n))

```

```
(DEFINEQ
```

(EXPAND.BITMAP.VERTICALLY

```
(LAMBDA (BITMAP M BM2 PBT)
```

```
;; Edited 26-Jun-2022 18:29 by rmk: Change (add ... to (SETQ xx (PLUS xxx ..)) because "with" gets confused
```

```
;; Edited 6-Dec-2021 15:04 by medley
```

```
;; Edited 6-Dec-2021 14:47 by medley
```

```
;; Edited 6-Dec-2021 13:54 by medley
```

```
;; Edited 6-Dec-2021 13:51 by medley
```

```
;; Edited 6-Dec-2021 13:11 by medley
```

```
;; Edited 6-Mar-87 15:02 by Masinter
```

```
(OR BM2 (SETQ BM2 (BITMAPCREATE (|fetch| BITMAPWIDTH BITMAP)
                                (TIMES M (|fetch| BITMAPHEIGHT BITMAP)))))
(OR PBT (SETQ PBT (|create| PILOTBBT)))
```

```
(|with| PILOTBBT PBT (*
```

```
  (SETQ PBTDESTHI (|ffetch| |BitMapHiLoc| BM2))
```

```
  (SETQ PBTDESTLO (|ffetch| |BitMapLoLoc| BM2))
```

```
  (SETQ PBTSOURCEHI (|ffetch| |BitMapHiLoc| BITMAP))
```

```
  (SETQ PBTSOURCELO (|ffetch| |BitMapLoLoc| BITMAP))
```

```
  (SETQ PBTDESTBPL (TIMES 16 M (|ffetch| BITMAPRASTERWIDTH BM2)))
```

```
  (SETQ PBTSOURCEBPL (TIMES 16 (|ffetch| BITMAPRASTERWIDTH BITMAP)))
```

```
  (SETQ PBTSOURCEBIT 0)
```

```
  (SETQ PBTDESTBIT 0)
```

```
  (SETQ PBTFLAGS 16384)
```

```
  (SETQ PBTHEIGHT (|fetch| BITMAPHEIGHT BITMAP))
```

```
  (SETQ PBTWIDTH (|fetch| BITMAPWIDTH BITMAP))
```

```
  (|for| I |from| 1 |to| M |do| (\\PILOTBITBLT PBT 0)
```

```
; RMK: Can't use add here, expansion self expansion gets
```

```
; confused
```

```
        (SETQ PBTDESTLO (PLUS PBTDESTLO (|fetch| BITMAPRASTERWIDTH |of| BM2)))
```

```
        \n))
```

```
BM2))
```

(EXPAND.BITMAP.HORIZONTALLY

```
(LAMBDA (BITMAP N BM2 PBT)
```

```
;; Edited 26-Jun-2022 18:34 by rmk: ADD doesn't expand properly under WITH, at least masterscope complains. So expanded it here
```

```
;; Edited 26-Jun-2022 18:30 by rmk
```

```
;; Edited 6-Mar-87 17:08 by Masinter
```

```
(OR BM2 (SETQ BM2 (BITMAPCREATE (TIMES N (|fetch| BITMAPWIDTH BITMAP)
                                (|fetch| BITMAPHEIGHT BITMAP)))))
```

```
(OR PBT (SETQ PBT (|create| PILOTBBT)))
```

```
(LET ((SOURCEBASE (|fetch| BITMAPBASE BITMAP))
```

```
      (DESTBASE (|fetch| BITMAPBASE BM2)))
```

```
(|with| PILOTBBT PBT (SETQ PBTDESTBPL N)
```

```
  (SETQ PBTSOURCEBPL 1)
```

```
  (SETQ PBTSOURCEBIT 0)
```

```
  (SETQ PBTFLAGS 16384)
```

```
  (SETQ PBTWIDTH 1)
```

```
  (LET ((HT (TIMES (|fetch| BITMAPWIDTH BITMAP)
                  (|fetch| BITMAPHEIGHT BITMAP))))
```

```
    (|do| (SETQ PBTDEST DESTBASE)
```

```
          (SETQ PBTSOURCE SOURCEBASE)
```

```
          (SETQ PBTHEIGHT (MIN (TIMES 1024 16)
                                HT))
```

```
          (SETQ PBTDESTBIT 0)
```

```
          (|for| I |from| 0 |while| (LESSP I N) |do| (\\PILOTBITBLT PBT 0)
```

```
                (SETQ PBTDESTBIT (PLUS PBTDESTBIT 1)))
```

```
          (SETQ HT (- HT (TIMES 1024 16)))
```

```
          (|if| (LEQ HT 0)
```

```
            |then| (RETURN))
```

```
          (SETQ DESTBASE (\\ADDBASE DESTBASE (TIMES N 1024)))
```

```
          (SETQ SOURCEBASE (\\ADDBASE SOURCEBASE 1024))))))
```

```
BM2))
```

```
)
```

```
{MEDLEY}<lispusers>LIFE.;1
```

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```
(ADDTOPVAR IDLE.FUNCTIONS
  ("Life" ' |LifeIdle| NIL (SUBITEMS ("Single bits" ' |LifeIdle|)
    ("Double bits" ' (LAMBDA (\w)
      (|LifeIdle| \w 2)))
    ("Quadruple bits" ' (LAMBDA (\w)
      (|LifeIdle| \w 4)))
    ("Eight bits" ' (LAMBDA (\w)
      (|LifeIdle| \w 8)))))

(PUTPROPS LIFE COPYRIGHT ("Xerox Corporation" 1987 1988))
```

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