File created: *17-Mar-88 15:21:27* **{QV}<NOTECARDS>1.3L>LIBRARY>NCCLUSTERCARD.;2**

changes to: *(FNS CLUSTER.LayoutInSquare CLUSTER.AddClusterCard)*

previous date: *4-May-87 19:58:54 {QV}<NOTECARDS>1.3K>LIBRARY>NCCLUSTERCARD.;5*

Read Table: *INTERLISP*

Package: *INTERLISP*

Format: *MCCS*

;;
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```
(RPAQQ NCCLUSTERCARDCOMS
        ((DECLARE%: DONTCOPY (PROP MAKEFILE-ENVIRONMENT {QV}<notecards>1.3K>LIBRARY>NCCLUSTERCARD.;5))
         (FILES (FROM NOTECARDS)
                NCSCREEN)
         (* Fns for the Cluster notecard type.)
         (GLOBALVARS CLUSTER.ExtraMenuItems)
         [VARS (CLUSTER.ExtraMenuItems '((|Layout Cluster Children| (FUNCTION CLUSTER.LayoutInCascade)
                                                 "Regroup and layout the elements of this cluster (in cascade format)."
                                                 (SUBITEMS (|Layout In Cascade| (FUNCTION CLUSTER.LayoutInCascade)
                                                                "Regroup and layout the elements of this cluster in cascade
                                                                format.")
                                                           (|Layout In Square| (FUNCTION CLUSTER.LayoutInSquare)
                                                                "Regroup and layout the elements of this cluster in cascade format.")
                                                           (|Layout In Surround| (FUNCTION CLUSTER.LayoutInSurround)
                                                                "Regroup and layout the elements of this cluster in surround
                                                                format."]
         (FNS CLUSTER.MakeFn CLUSTER.EditFn CLUSTER.QuitFn CLUSTER.PutFn CLUSTER.GetFn CLUSTER.FetchChildren
              CLUSTER.SetChildren CLUSTER.AddClusterCard)
         (FNS CLUSTER.LayoutInCascade CLUSTER.LayoutInSquare CLUSTER.LayoutInSurround)
         (RECORDS CLUSTER.ClusterInfo CLUSTER.ChildInfo)
         (P (CLUSTER.AddClusterCard))))

(DECLARE%: DONTCOPY

(PUTPROPS {QV}<notecards>1.3K>LIBRARY>NCCLUSTERCARD.;5 MAKEFILE-ENVIRONMENT (:PACKAGE "IL" :READTABLE
                                                                                    "INTERLISP" :BASE 10))
)

(FILESLOAD (FROM NOTECARDS)
        NCSCREEN)


        (* * Fns for the Cluster notecard type.)

(DECLARE%: DOEVAL@COMPILE DONTCOPY

(GLOBALVARS CLUSTER.ExtraMenuItems)
)

(RPAQ CLUSTER.ExtraMenuItems '[(|Layout Cluster Children| (FUNCTION CLUSTER.LayoutInCascade)
                                        "Regroup and layout the elements of this cluster (in cascade format)."
                                        (SUBITEMS (|Layout In Cascade| (FUNCTION CLUSTER.LayoutInCascade)
                                                       "Regroup and layout the elements of this cluster in cascade format.")
                                                  (|Layout In Square| (FUNCTION CLUSTER.LayoutInSquare)
                                                       "Regroup and layout the elements of this cluster in cascade format.")
                                                  (|Layout In Surround| (FUNCTION CLUSTER.LayoutInSurround)
                                                       "Regroup and layout the elements of this cluster in surround format."])

(DEFINEQ

(CLUSTER.MakeFn
  [LAMBDA (Card Title NoDisplayFlg ClusterInfo)                    (* rht%: " 4-May-87 14:34")

        (* * ClusterInfo should be an instance of the CLUSTER.ClusterInfo record.
        Create a cluster with head card Card and one child card for each element of ChildInfos.
        The elements of ChildInfos are instances of the CLUSTER.ChildInfo record.
        If the TitleString field of the record is NIL, then use the card's type.)

    (LET ((NoteFile (NCP.CardNoteFile Card))
          (ChildInfos (fetch (CLUSTER.ClusterInfo ChildInfos) of ClusterInfo))
          FileBoxes ChildCards Window Region)
         (SETQ FileBoxes (APPEND (fetch (CLUSTER.ClusterInfo FileBoxes) of ClusterInfo)
                                 (for i from 1 to (DIFFERENCE (LENGTH ChildInfos)
                                                              (LENGTH (fetch (CLUSTER.ClusterInfo FileBoxes) of
                                                                                                             ClusterInfo
                                                                                                             )))
                                    collect NIL)))
```

```
        (OR Title (SETQ Title (NCP.AskUser (CONCAT "Title of " (NCP.CardType Card)
                                                   " card? ")
                                           "-- " NIL T NIL T)))
        (SETQ Window (WINDOWP (APPLY* (NCP.CardTypeFn 'Text 'MakeFn)
                                      Card Title NoDisplayFlg)))
        (NCP.CardTitle Card Title)
        (SETQ ChildCards (for ChildInfo in ChildInfos as Box in FileBoxes bind ChildCard LinkType
                            collect (LET ((LinkType (fetch (CLUSTER.ChildInfo LinkType) of ChildInfo))
                                          (ChildCard (NCP.CreateCard (fetch (CLUSTER.ChildInfo CardType) of
                                                                                                  ChildInfo
                                                                     )
                                                                     NoteFile
                                                                     (CONCAT Title ": " (OR (fetch (CLUSTER.ChildInfo
                                                                                                   TitleString)
                                                                                                   of ChildInfo)
                                                                                           (fetch (CLUSTER.ChildInfo
                                                                                                   CardType)
                                                                                                   of ChildInfo)))
                                                                     T NIL Box)))
                                                                     (* If LinkType field was nil, then don't create a link for this child.)
                                      (if LinkType
                                          then (OR (NCP.ValidLinkTypeP LinkType NoteFile)
                                                   (NCP.CreateLinkType LinkType NoteFile))
                                               (NCP.LocalGlobalLink LinkType Card ChildCard NIL)
                                               (NCP.CardAddText Card (CHARACTER 13)))
                                      ChildCard)))
        (CLUSTER.SetChildren Card ChildCards)
        (if (NOT NoDisplayFlg)
            then (CLUSTER.LayoutInSquare Card))
        (OR Window Card])


(CLUSTER.EditFn
  [LAMBDA (Card Substance Region/Position)                    (* rht%: " 4-May-87 19:47")

          (* * Bring up a cluster card. This causes head card to be brought up and all child cards to come up cascaded below it.)

    (LET (Window)
         (SETQ Window (APPLY* (NCP.CardTypeFn 'Text 'EditFn)
                              Card Substance Region/Position))

          (* Have to do this so that later calls to NC.CoerceToCard will work on the card's window.)

         (WINDOWPROP Window 'NoteCardObject Card)
         (CLUSTER.LayoutInCascade Card)
         Window])


(CLUSTER.QuitFn
  [LAMBDA (CardIdentifier)                                    (* rht%: " 4-May-87 19:48")

          (* * Close up a cluster card by first closing all children, then closing the head cluster card.)

    (LET ((Card (NCP.CoerceToCard CardIdentifier)))
         (AND (NCP.ValidCardP Card)
              (for Card in (CLUSTER.FetchChildren Card) when (NCP.ValidCardP Card) do (NCP.CloseCards Card)))
         (APPLY* (NCP.CardTypeFn 'Text 'QuitFn)
                 CardIdentifier])


(CLUSTER.PutFn
  [LAMBDA (ClusterCard Stream)                                (* rht%: " 4-May-87 19:48")

          (* * Write the cluster substance down to the stream. The format is number of children, followed by uids and text
          substance.)

    (LET ((ClusterChildren (CLUSTER.FetchChildren ClusterCard)))
         (NC.WritePtr Stream (LENGTH ClusterChildren)
                      3)
```

```
        (for ChildCard in ClusterChildren do (NC.WriteUID Stream (fetch (Card UID) of ChildCard)))
        (APPLY* (NCP.CardTypeFn 'Text 'PutFn)
                ClusterCard Stream)
        1])


(CLUSTER.GetFn
  [LAMBDA (ClusterCard Length Stream VersionNum)          (* rht%: " 4-May-87 19:49")

            (* * Read in the Cluster card substance. Expect a number of children, followed by UIDs and then text substance.)

    (LET ((NoteFile (NCP.CardNoteFile ClusterCard))
          (StartPtr (GETFILEPTR Stream))
          NumChildren)
         (if (GEQ VersionNum 1)
             then (SETQ NumChildren (NC.ReadPtr Stream 3))
                  (CLUSTER.SetChildren ClusterCard (for i from 1 to NumChildren bind UID Card
                                                      when [AND (type? UID (SETQ UID (NC.ReadUID Stream)))
                                                                (NC.CardP (SETQ Card (NC.CardFromUID UID
                                                                                                     NoteFile]
                                                      collect Card)))
         (APPLY* (NCP.CardTypeFn 'Text 'GetFn)
                 ClusterCard
                 (DIFFERENCE Length (DIFFERENCE (GETFILEPTR Stream)
                                                StartPtr))
                 Stream])


(CLUSTER.FetchChildren
  [LAMBDA (ClusterCard)                                   (* rht%: " 3-May-87 23:59")

            (* * Return the child cards for this cluster card.)

    (NCP.CardUserDataProp ClusterCard 'ClusterChildCards])


(CLUSTER.SetChildren
  [LAMBDA (ClusterCard ChildCards)                        (* rht%: " 4-May-87 00:00")

            (* * Replace ChildCards of ClusterCard with the given new ones.)

    (NCP.CardUserDataProp ClusterCard 'ClusterChildCards ChildCards])


(CLUSTER.AddClusterCard
  [LAMBDA NIL                                             ; Edited 17-Mar-88 15:12 by pmi

            (* * Define the Cluster Card type.)

    (DECLARE (GLOBALVARS CLUSTER.ExtraMenuItems))
    (NCP.CreateCardType 'Cluster 'Text '[(MakeFn ,(FUNCTION CLUSTER.MakeFn))
                                        (EditFn ,(FUNCTION CLUSTER.EditFn))
                                        (QuitFn ,(FUNCTION CLUSTER.QuitFn))
                                        (GetFn ,(FUNCTION CLUSTER.GetFn))
                                        (PutFn ,(FUNCTION CLUSTER.PutFn]
                '((LinkDisplayMode Title)
                  (DisplayedInMenuFlg ,NIL)
                  (LeftButtonMenuItems ,(APPEND (NC.GetCardTypeField LeftButtonMenuItems 'Text)
                                                CLUSTER.ExtraMenuItems])

)

(DEFINEQ

(CLUSTER.LayoutInCascade
  [LAMBDA (CardOrWindowOrTextStream)                      (* rht%: " 4-May-87 00:55")

            (* * Regroups and lays out the cluster children in cascade format.)
```

```
    (LET ((Card (NCP.CoerceToCard CardOrWindowOrTextStream))
          Window Region)
         (if (SETQ Window (NCP.CardWindow Card))
             then (SCREEN.LayoutCardsInCascade (SCREEN.GetCascadePosition Window)
                                               (CLUSTER.FetchChildren Card])


(CLUSTER.LayoutInSquare
  [LAMBDA (CardOrWindowOrTextStream)                    ; Edited 17-Mar-88 15:20 by pmi

    ;; Regroups and lays out the cluster children in square format.

    ;; pmi 3/16/88: Added GLOBALVARS declaration.

    (DECLARE (GLOBALVARS SCREEN.CascadeYSpace))
    (LET ((Card (NCP.CoerceToCard CardOrWindowOrTextStream))
          Window Region)
         (if (SETQ Window (NCP.CardWindow Card))
             then (SETQ Region (WINDOWPROP Window 'REGION))
                  (SCREEN.LayoutCardsInSquare (CREATEPOSITION (fetch (REGION LEFT) of Region)
                                                              (DIFFERENCE (fetch (REGION TOP) of Region)
                                                                          (PLUS (FONTPROP WindowTitleDisplayStream
                                                                                          'HEIGHT)
                                                                                SCREEN.CascadeYSpace)))
                                              (CLUSTER.FetchChildren Card])


(CLUSTER.LayoutInSurround
  [LAMBDA (CardOrWindowOrTextStream)                    (* rht%: " 3-May-87 22:57")

            (* * Regroups and lays out the cluster children in surround format.)

    (LET ((Card (NCP.CoerceToCard CardOrWindowOrTextStream))
          Window Region)
         (if (SETQ Window (NCP.CardWindow Card))
             then (SCREEN.LayoutCardsInSurround Card (CLUSTER.FetchChildren Card])

)

(DECLARE%: EVAL@COMPILE

(RECORD CLUSTER.ClusterInfo (ChildInfos FileBoxes))

(RECORD CLUSTER.ChildInfo (CardType LinkType TitleString))
)

(CLUSTER.AddClusterCard)

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

{MEDLEY}<notecards>library>ncclustercard.;1 14-Oct-2026 10:47:29
-- Listed on 14-Oct-2026 10:58:46 --

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