File created: *28-Mar-89 11:21:33* **{NB:PARC:XEROX}<NOTECARDS>1.3M>LIBRARY>NCPATHUSE.;1**

previous date: *18-Mar-86 10:11:15 {QV}<NOTECARDS>1.3L>LIBRARY>NCPATH>NCPATHUSE.;1*

Read Table: *INTERLISP*

Package: *INTERLISP*

Format: *MCCS*

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;;
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(RPAQQ NCPATHUSECOMS
        [(FILES NCPATH NCPATHPARSE)
         (FNS NCPath.GetCardPathListsFromPathCollection NCPath.GetTerminalsFromPathCollection
              NCPath.GetUniqueTerminalsFromPathCollection NCPath.ReverseAndSeparatePaths PathStepPrint PrintFSM
              PrintFSMNode)
         (* (P (DEFPRINT 'NCPathFSM 'PrintFSM)
             (DEFPRINT 'NCPathFSMNode 'PrintFSMNode)
             (DEFPRINT 'NCPathPathStep 'PathStepPrint])

(FILESLOAD NCPATH NCPATHPARSE)

(DEFINEQ

(NCPath.GetCardPathListsFromPathCollection
  [LAMBDA (PathCollection)                                    (* Newman "18-Mar-86 08:43")

        (* * This function collects a list of cards traversed by each path in PathCollection.
        Thus, it returns a list of lists. Each sublist is a list of all the cards traversed in a particular path.)

    (for Path in PathCollection collect (CONS (CAR (LAST Path))
                                              (for Step in (CDR (REVERSE Path)) collect (NCPath.PathStep.End Step])


(NCPath.GetTerminalsFromPathCollection
  [LAMBDA (PathCollection)                                    (* Newman "18-Mar-86 08:39")

        (* * This function collects the terminal cards in a collection of paths.
        It is intended to assist the user in getting the results desired from what NCPath.FSM.PathCollect returns.)

    (for Path in PathCollection collect (NCPath.Path.End Path])


(NCPath.GetUniqueTerminalsFromPathCollection
  [LAMBDA (PathCollection)                                    (* Newman "18-Mar-86 08:41")

        (* * This function is very similar to NCPath.GetTerminalsFromPathCollection, but it collects only unique terminal nodes,
        where the other function can collect multiple copies of the same terminal card.)

    (bind TempCollection for Path in PathCollection unless (MEMBER (NCPath.Path.End Path)
                                                                   TempCollection)
       do (push TempCollection (NCPath.Path.End Path)) finally (RETURN TempCollection])


(NCPath.ReverseAndSeparatePaths
  [LAMBDA (PathCollection)                                    (* Newman "18-Mar-86 08:47")

        (* * The results of NCPath.FSM.PathCollect is typically a list of lists, each sublist being a path in the collection.
        These paths share cons cells for efficiency, and are stored with the steps in the paths in reverse order.
        This function accepts the result of NCPath.FSM.PathCollect, and returns a list of paths with their steps in the correct
        order such that no cons cells are shared between paths.)

    (for Path in PathCollection collect (REVERSE (COPY Path])


(PathStepPrint
  [LAMBDA (Instance Stream)                                   (* Newman "18-Mar-86 08:47")

        (* * This function is intended to be a print definition for the NCPathPathStep datatype.)

    (CONS (if (fetch (NCPathPathStep Direction) of Instance)
              then (fetch (NCPathPathStep Link) of Instance)
           else (CONCAT "←" (fetch (NCPathPathStep Link) of Instance)))
```

```
          NIL])


(PrintFSM
  [LAMBDA (Instance Stream)                          (* Newman "18-Mar-86 08:48")

          (* * This function is intended for use as a print definition for the NCPathFSM datatype.)

    (CONS (CONCAT "[FSM; CurrentState=" (fetch (NCPathFSM CurrentState) of Instance)
                  " InitialState="
                  (fetch (NCPathFSM InitialState) of Instance)
                  "]"])


(PrintFSMNode
  [LAMBDA (Instance Stream)                          (* Newman " 4-Mar-86 12:43")

          (* * This function is to be the DEFPRINT function for FSMNodes)

    (CONS (CONCAT "[FSMNode; Predicate=" (fetch (NCPathFSMNode Predicate) of Instance)
                  " Card/Link="
                  (if (fetch (NCPathFSMNode Card/Link) of Instance)
                      then 'LINK
                    else 'CARD)
                  " Direction="
                  (if (fetch (NCPathFSMNode Direction) of Instance)
                      then 'FORWARD
                    else 'BACK)
                  " NextNodes="
                  (fetch (NCPathFSMNode NextNodes) of Instance)
                  "]"])

)


          (* * (P (DEFPRINT (QUOTE NCPathFSM) (QUOTE PrintFSM))
          (DEFPRINT (QUOTE NCPathFSMNode) (QUOTE PrintFSMNode))
          (DEFPRINT (QUOTE NCPathPathStep) (QUOTE PathStepPrint))))

(PUTPROPS NCPATHUSE COPYRIGHT ("Xerox Corporation" 1986 1989))
```

FUNCTION INDEX

NCPath.GetCardPathListsFromPathCollection 1
NCPath.GetTerminalsFromPathCollection 1
NCPath.GetUniqueTerminalsFromPathCollection 1
NCPath.ReverseAndSeparatePaths 1
PathStepPrint 1
PrintFSM 2
PrintFSMNode 2

VARIABLE INDEX

NCPATHUSECOMS 1