

This is a code exercise to "put my money where my mouth is" regarding the capabilities of 4th Dimension. The code may be redistributed for non-commercial purposes, provided that this entire document is distributed intact. This file is Copyright 17 June 1987 by

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The exercise below was based on the problem posed below by Steven Terris (75076,2630) [on Compuserve] (I took the liberty of editing Steven's message so only the content relating to the problem remained):

#: 4590 S13/4th Dimension

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With the database language would it be possible to compare four fields in one record to all other records in the file and then find three more records that are exact matches. Then take those four records and remove them from File A and place them in File B as one record that contains sixteen fields. Then continue on again to find the next four records until EOF? This is something that I have never been able to do in Helix with success. What I am trying to do is match data that was taken at four different temperatures for one sensor to three others so that I can have four identical sensors with the same temp. characteristics per set of four.

So the basic parameters are as follows:

- Finds four records with four fields that match (exactly)
- Moves all sixteen fields to a record in another relation
- Removes the four records from the first relation

For starters, I created a file in Excel that had the same set of data four times, sorted differently each time. I imported it into the file **ShortRel** (for "Short Relation"). As this was an exercise for my amusement and amazement, I named the four fields **Name**, **Dept**, **Budget**, **Actual**. In **LongRel**, the four names were repeated each time with a number after the name.

The program finds the first record, finds all that match the four fields, and sets them as the selection. A selection is a subset of data that can be manipulated as if it were the only data in the file. If there is no first record (because all sets of data were deleted), then **End Selection** would become True and the While loop would exit. Otherwise, it updates the **LongRel** and deletes the selection in **ShortRel**.

There's a lot of error-checking that could go into this -- if there are three records (or five) that are exact matches it won't update the second relation or delete any of the records in the first. This would create an infinite loop, as those records would never get deleted. Hey! I didn't say it was user-friendly (or, for that matter, optimum code), but it does work and it does give you an idea of how 4D works. For speed, the messages could be turned off.

```

DEFAULT FILE([ShortRel])
ALL RECORDS([ShortRel])
FIRST RECORD([ShortRel])
While (Not(End selection))
  MyName:=[ShortRel]Name
  MyDept:=[ShortRel]Dept
  MyBudget:=[ShortRel]Budget
  MyActual:=[ShortRel]Actual
  MESSAGE(MyName)
  SEARCH((([ShortRel]Name=MyName)&([ShortRel]Dept=MyDept)&
    ([ShortRel]Budget=MyBudget)&([ShortRel]Actual=MyActual))
  MESSAGE(String(Records in selection)+" have been chosen.")
  If ((Records in selection)=4)
    CREATE RECORD([LongRel])
    FIRST RECORD([ShortRel]) `Necessary in order to get the first set of data
    [LongRel]Name1:=[ShortRel]Name
    [LongRel]Dept1:=[ShortRel]Dept
    [LongRel]Budget1:=[ShortRel]Budget
    [LongRel]Actual1:=[ShortRel]Actual
    NEXT RECORD([ShortRel])
    [LongRel]Name2:=[ShortRel]Name
    [LongRel]Dept2:=[ShortRel]Dept
    [LongRel]Budget2:=[ShortRel]Budget
    [LongRel]Actual2:=[ShortRel]Actual
    NEXT RECORD([ShortRel])
    [LongRel]Name3:=[ShortRel]Name
    [LongRel]Dept3:=[ShortRel]Dept
    [LongRel]Budget3:=[ShortRel]Budget
    [LongRel]Actual3:=[ShortRel]Actual
    NEXT RECORD([ShortRel])
    [LongRel]Name4:=[ShortRel]Name
    [LongRel]Dept4:=[ShortRel]Dept
    [LongRel]Budget4:=[ShortRel]Budget
    [LongRel]Actual4:=[ShortRel]Actual
    SAVE RECORD([LongRel])
    DELETE SELECTION([ShortRel])
    ALL RECORDS([ShortRel])
    FIRST RECORD([ShortRel])
  End if
End while

```