

ACCESS HACKS™

Tips & Tools for Wrangling Your Data



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#46

Get All Combinations of Data

Remove the Join clause in a SQL statement to return a Cartesian product (which returns all possible combinations).

Leaving the Join clause out of a SQL statement returns a number of records equal to the product of the number of records in the tables. Taking two tables, for example, as long as one field from either table is designated for output, the number of returned records in a Select query of this design is the product of the counts of the two tables.

Behind the scenes, the query is matching all combinations of the data. If each table has hundreds or thousands of records, the returned number of records can be in the millions. This can be disastrous—that is, unless returning records in this way is by design. Why would you do this? It makes sense to do it to explicitly return all the combinations. If you need such all-inclusive matching, you don't have to bother with any VBA code; just create a query that does it for you. Figure 5-28 shows a table with 12 people and another table with eight possible activities.

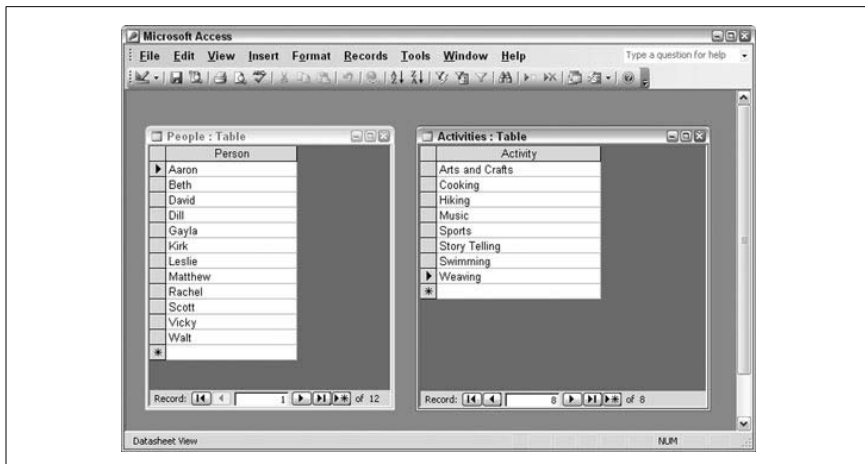


Figure 5-28. Two unrelated tables

Create a Select query with the two tables, and designate the single field from each table for output. Figure 5-29 shows the query design. Note that the lack of a relation line between the tables is intentional.

A little tip-tap on a calculator shows 96 combinations of person and activity. Running the query returns the 96 records, as shown in Figure 5-30.

The query results can be copied, exported, and so on. This is a fast and easy way to get all combinations of data. Going one step further, a third table is

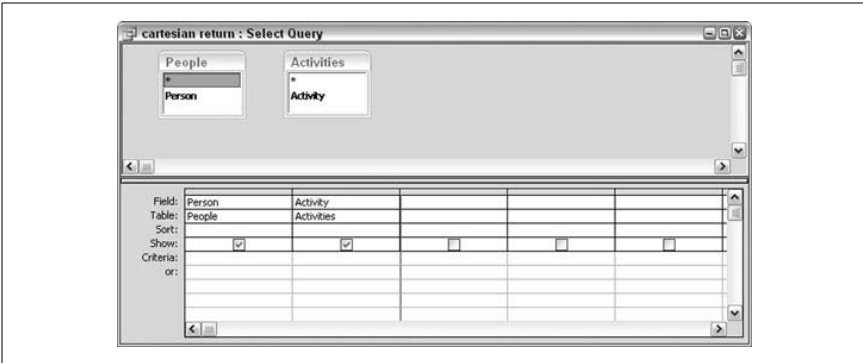


Figure 5-29. A Select query of unrelated tables

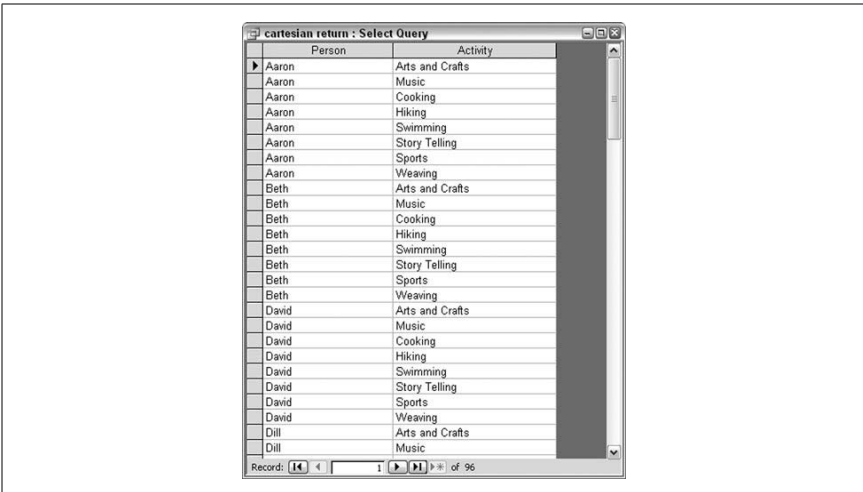


Figure 5-30. Returning the combined records

added to the query. This new table contains parts of the day, in two records: morning and afternoon. Running the query returns the expected 192 records, which is the product of $12 \times 8 \times 2$. Figure 5-31 shows the result.

Although it isn't efficient to handle data in this unrelated way, at least with regard to database work, a set of combinations such as this makes for useful reports, checklists, and so on.

Get All Combinations of Data

Person	Activity	PartOfDay
Aaron	Arts and Crafts	Morning
Aaron	Arts and Crafts	Afternoon
Aaron	Music	Morning
Aaron	Music	Afternoon
Aaron	Cooking	Morning
Aaron	Cooking	Afternoon
Aaron	Hiking	Morning
Aaron	Hiking	Afternoon
Aaron	Swimming	Morning
Aaron	Swimming	Afternoon
Aaron	Story Telling	Morning
Aaron	Story Telling	Afternoon
Aaron	Sports	Morning
Aaron	Sports	Afternoon
Aaron	Weaving	Morning
Aaron	Weaving	Afternoon
Beth	Arts and Crafts	Morning
Beth	Arts and Crafts	Afternoon
Beth	Music	Morning
Beth	Music	Afternoon
Beth	Cooking	Morning
Beth	Cooking	Afternoon
Beth	Hiking	Morning
Beth	Hiking	Afternoon
Beth	Swimming	Morning
Beth	Swimming	Afternoon
Beth	Story Telling	Morning
Beth	Story Telling	Afternoon

Figure 5-31. Returning combinations on three unrelated tables