

Teaching Tip

Recursive Joins to Query Data Hierarchies in Microsoft Access

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ABSTRACT

Organizational charts (departments, sub-departments, sub-sub-departments, and so on), project work breakdown structures (tasks, subtasks, work packages, etc.), discussion forums (posting, response, response to response, etc.), family trees (parent, child, grandchild, etc.), manufacturing bill-of-material, product classifications, and document folder hierarchies are all examples of hierarchical data. Although relational databases can represent such hierarchical data with ease, relational query languages such as Structured Query Language (SQL) and Query-By-Example (QBE) fail to support users in formulating natural queries involving transitive closure of such hierarchical data (e.g., listing all descendants of an individual in a family tree scenario). This paper presents a simple approach for teaching users how to overcome this shortcoming and formulate the required recursive joins in order to query such data hierarchies in Microsoft Access.

Keywords: Database Management Systems, Hierarchical Data, SQL, Recursive Joins, Transitive Closure, Microsoft Access