Database Engine for Faster Analytics

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WARF: P140266US01
View U.S. Patent No. 9,870,401 in PDF format.

The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a highly denormalized database structure that enables faster query processing.

OVERVIEW

Given the ever increasing amount of "big data" available, new analysis and processing tools are needed to fully leverage it. Big data is challenging to manage, requiring sophisticated mechanisms and parallel processing.

One problem is that many existing systems use algorithms designed for older hardware models. As hardware continues to upgrade, new software methods are needed to keep pace.

THE INVENTION

UW–Madison researchers have developed "Widetable," a query processing method that provides a faster and more efficient means for scanning data across multiple tables.

The method accelerates queries by denormalizing multiple tables of a relational database into a smaller number of "wide row" tables using an outer join function. Such denormalization substantially increases the amount of data that must be stored to represent the database. While this might be expected to slow scan rates, speed is gained by eliminating other time-consuming operations.

APPLICATIONS

- Software package
- Database management

KEY BENEFITS

- Tenfold query speedup

- Better scalability
- Can run on many core machines

STAGE OF DEVELOPMENT

Promising simulations have been conducted using the industry standard benchmark.

ADDITIONAL INFORMATION

Related Technologies
WARF reference number P130164US01 describes a data processing method called Bitweaving that provides a faster means for scanning data contained in a single table.

Tech Fields
Information Technology - Computing methods

CONTACT INFORMATION

For current licensing status, please contact Emily Bauer at emily@warf.org or 608-960-9842.