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COHANA: A COHort ANAlytics Engine

MARKET OPPORTUNITY

Modern Internet applications, such as online commercial websites and mobile game applications, normally generate a large volume of user behavioral data. Cohort analysis is a powerful data exploration technique for finding unusual user behavior trends from large activity datasets using the concept of cohort. However, one limitation of classical cohort analysis is that time is the only dimension which is used for identifying cohorts. In many other applications, there are other factors that determine the similarity of people's behavior.

TECHNOLOGY

To simplify performing cohort analysis for data analysts, we present a relational approach to model the user behavioral data and three database like operators for manipulating the data model, and provide several constructs for data analysts to compose cohort queries with SQL SELECT like statements. We build COHANA, a cohort analytics engine, to materialize the proposed data model and efficiently process cohort queries against the materialized user behavioral data, and employ multiple optimization techniques in COHONA for data materialization and cohort query processing. COHANA can perform up to three orders of magnitude better than the approaches that express cohort queries in SQL statements and execute them over traditional databases.
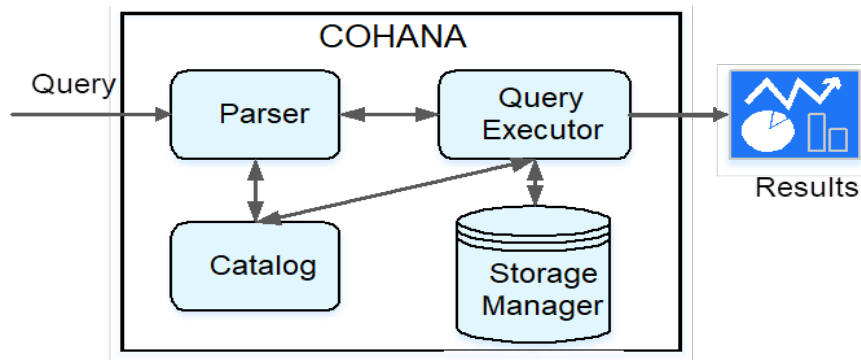
COHANA system

CATEGORY
Database management

STAGE OF DEVELOPMENT
Analytical and laboratory studies to validate analytical predictions

APPLICATIONS
This technique may effectively help modern Internet applications to find abnormal user behavioral patterns and inspect the associated factors to enhance their business.

ADVANTAGES
1. It can provide database query-style support for generalized cohort analysis.
2. It can require less storage space.
3. It can speed up query processing time.

STATUS
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