

Zwischenpräsentation in Programmiermodel Seminar

Finding Hot Aggregates in Application
Workload

Idee

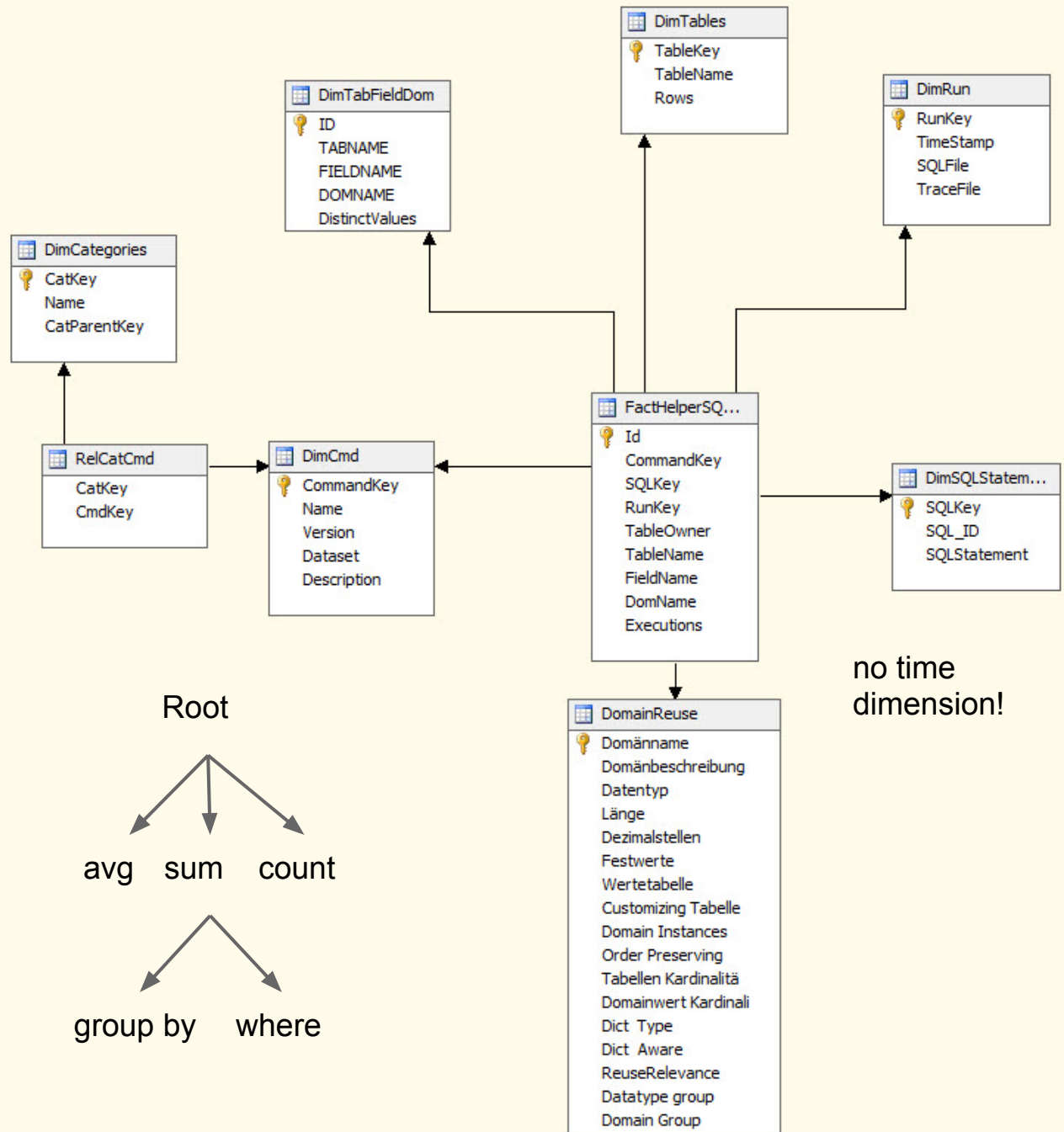
*based on "statistical db performance log" (workload) analysis, aggregate functions shall be identified, evaluated and materialized according to their relevance and the change frequency of the underlying data. => **IO and CPU usage shall be reduced for repetitive calculation of unchanging aggregates.***

- Evaluation of historical relevance and change frequency
- Determine a optimal level of granularity for materialization
- Derive a data schema for materializing aggregate result
- Find important data regions (hot spots) in workload
- Query matching strategies for aggregate functions

Structure

- Introduction
- Background
 - Related Work
 - Basic Terms ()
- Workload Analysis
 - Workload data
 - Command (extractions)
 - Star Schema / Dimensions
 - Data Mining - Analysis
- Hot Aggregates
 - Metrics
 - Characteristics
 - Results
- Future Work

Schema



Related Work - Papers

[1] A. Bog and J. Kruger, “A Composite Benchmark for Online Transaction Processing and Operational Reporting,”

[2] J. Zhou, P.-A. Larson, J. Goldstein, and L. Ding, “Dynamic Materialized Views,”

[3] R. Cole, F. Funke, L. Giakoumakis, W. Guy, A. Kemper, S. Krompass,

H. Kuno, R. Nambiar, T. Neumann, M. Poess, and Others, “The mixed

workload CH-benCHmark,”

[4] A. Dan, P. S. Yu, and J.-Y. Chung, “Characterization of database

access pattern for analytic prediction of buffer hit probability,”

[5] P. M. Deshpande and J. F. Naughton, “Aggregate Aware Caching for

Multi-Dimensional Queries,”

[6] J. Goldstein and P.-a. k. Larson, “Optimizing queries using materialized views: a practical, scalable solution,”

[7] C.-S. Park, M. H. Kim, and Y.-J. Lee, “Usability-based caching of

query results in OLAP systems,”

[8] P. Roy, B. Laboratories, and M. Hill, “Don’t Trash your Intermediate

Results, Cache’

[9] P. Roy, K. Ramamritham, and S. Seshadri, “ON WORKLOAD CHARACTERIZATION OF RELATIONAL DATABASE ENVIRONMENTS,”