

## Metric Suite for Schema Evolution of a Relational Database

**Authors :** S. Ravichandra, D. V. L. N. Somayajulu

**Abstract :** Requirement of stakeholders for adding more details to the database is the main cause of the schema evolution in the relational database. Further, this schema evolution causes the instability to the database. Hence, it is aimed to define a metric suite for schema evolution of a relational database. The metric suite will calculate the metrics based on the features of the database, analyse the queries on the database and measures the coupling, cohesion and component dependencies of the schema for existing and evolved versions of the database. This metric suite will also provide an indicator for the problems related to the stability and usability of the evolved database. The degree of change in the schema of a database is presented in the forms of graphs that acts as an indicator and also provides the relations between various parameters (metrics) related to the database architecture. The acquired information is used to defend and improve the stability of database architecture. The challenges arise in incorporating these metrics with varying parameters for formulating a suitable metric suite are discussed. To validate the proposed metric suite, an experimentation has been performed on publicly available datasets.

**Keywords :** cohesion, coupling, entropy, metric suite, schema evolution

**Conference Title :** ICASE 2016 : International Conference on Automated Software Engineering

**Conference Location :** London, United Kingdom

**Conference Dates :** September 29-30, 2016