Performance evaluation of embedded mobile databases: RDBMS VS NoSQL

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Declaration

We declare that this thesis is our own work and has not been submitted in any form for another degree or diploma at any university or other institution of tertiary education. Information derived from the published or unpublished work of others has been acknowledged in the text and a list of references is given.

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Date:

Dedication

In dedication of

My loving mother

Who is strength of my life.

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Abstract

Most embedded mobile databases are customized to perform requirement of the application. Considering embedded databases due to it doesn't have database administrator they are really robust and failing percentage is very less. Performance characteristics of the embedded database is need to match exactly with the performance characteristics of the application it's resides in, there can be no poverty.

Hence embedded database in android mobile phones and tablets has vast responsibility to cater high performance to end users without disappointing their expectations. Therefore aim and objective of this research is evaluated which embedded database is perform well in mobile environment.

Analyzing current available embedded databases in mobile devices it can observe Relational databases management systems are ruling at the top. However recent huge popularity of NoSQL databases for cloud computing has inspired initiative non-relational data types the essence of big data flooding in organizations and large datacenters.

To evaluate performance of mobile embedded database locally installed SQLite and CouchDB on android environment and integrate android application to which may interact with both databases. I have designed the database which may suitable for both databases and schema will be populated by a FeildGenerator class that used an Xorshift random number generator and arrays of predefined data to generate reasonable tables as efficiency as possible large datasets.

While executing predefined benchmarking queries, benchmark matrices have been evaluated. Once the benchmark metrics calculate , able to demonstrate from RDBMS vs NoSQL which database is performing well on mobile embedded environment.

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