Improving Query Processing Performance in Database Management Systems

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Declaration

I declare that this thesis is my 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 Information derived from the published or unpublished work of others has been acknowledged in the text and a list of references is given.

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Name of Student (s) Signature of Student (s)

Date:

Supervised by

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Name of Supervisor(s) Signature of Supervisor(s)

Date:

Dedication

This thesis is dedicated to my wife, Mrs. U. Kumarapeli for her endless love, encouragement, and support.

Acknowledgments

First and foremost I would like to offer my sincere gratitude to my research supervisor, lecturer Mr.Chaman Wijesiriwardana, for his guidance, supervision, encouragement, and support throughout this study.

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Abstract

Improving Query Processing Performance in Database Management Systems has been a research challenge. This is the most important and is a real problem, this happens to be very crucial in large organizations with heterogeneous data, online system, billing systems and so on. Among other issues in the query optimization problem, faced by everyday query optimizers, get more and more complex with the server increasing complexity of user queries. During the last decade, database management systems have become important information processing system supporting business activities of geographically decentralized organizations.

The Performance monitoring has been evaluated and used by various tools. Most DBA's agreed that these tools are valuable. Our research also tried to identify how performance problems could be reduced and which methods were used in practice. Besides hardware upgrades, the following areas in tuning are known to have major impacts.

The main aim of this thesis is to produce flexible database monitoring tool and query optimization techniques that is capable of get basic idea of database server, database log, missing indexes, graphical user interface of currently running queries, optimizing large queries in a complex database. Among other issues in a database, such as deadlock, expensive query, primary key missing places, badly design quarries can be simply identified.

This database monitoring tool and proposed new optimization techniques will more helpful to identify database performance issues and provide better solutions. During the evaluation, it was shown that system was successful more than 70%.

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