UNIVERSITI TEKNOLOGI MARA

PERFORMANCE ANALYSIS OF CHECKSUM AND HASH FUNCTION IN DATABASE

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ABSTRACT

As the data are grow day by day in the database, the performance of the database will be effected. Other than that, the additional features or setting for example the security technique which is to ensure the integrity of the database that are apply on the database also will be effected the performance of the database. To counter this problem, the author design a hybrid technique which is combination of CHECKSUM and SHA2_512 in order to secure the database from being attack. This technique will be applied in the database and the performance metric of time will be evaluated and compare with the current technique such as CHECKSUM, MD5 and SHA2_512. In order to complete this study, the author write the hybrid technique by using language of SQL and apply in the SQL database. The performance metric of time that want to evaluate is based on the CPU time and elapse time when to accessing the data in the database. Through the testing, the result shows the proposed technique which is hybrid technique can be applied in the database.

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CHAPTER 1

INTRODUCTION

Chapter 1 Introduction defined the necessary elements such as objectives, research questions, problem statements and scope as the fundamentals of the research in order for the planning and experimenting the experiments were always on the tracks.

1.1 BACKGROUND OF STUDY

Database is a collection of data that is have been organized do it can be easily accessed, managed and updated. Apart from that, databases can be classified accordingly to the type of data for example full-text, numeric and images. There are several type of the database model which are relational database, flat file based database, hierarchical database, model called network database and object-oriented database. Apart from that, database can be considered as a backbone of the information system. The database administrator (DBA) is person who responsible for the most activities inside the database.

Growing of the database day by day with the increasing amount of the data or the implementation or other factors into the database for example applied the security features in order to maintain the integrity of the database may give an effect to the performance off the database. Therefore, the performance monitoring of the database is essential. There are many way that can used to evaluate the database performance. According to Khanttab.A.A, Algergawy.A and Sarhan.A, the most common measurement are system throughput and system response time. Predicting the performance metrics of a database workload before execution is very useful for many administrative tasks.

Therefore this project will determine the performance of the database which is SQL database which is one of the relational database. The performance of the database will be measured in term of time response when accessing to the database.