**DB Performance and Security considerations**

When designing and implementing a database whether for a large company or for yourself it Is imperative you look into the performance and security issues that you must take into account before starting its design. This is largely situational as the database needs are different for the tasks it may be designed and built for and in many cases you must choose whether you want your database to be secure or high performance, for example if you wish to deal with big data you will be more concerned with the performance of your database due to the nature of big data requiring such high performance however if you are dealing with customers financial information you will most likely be more concerned with the security of the database therefore different situations require different database considerations.

In order to increase the performance capabilities of your database you can look into using indexes as this allows the database to rather than search an entire table to simply get the data you wish to see which is quite useful on queries that are run quite often or big queries that access a lot of rows in the database that is run less often but repetitively. This is backed up by the work of CIOLOCA, Cecilia., Mihai GEORGESCU. (2011) as they state the benefits of using indexes to speed up a database as well as the different types and in which situations they excel in and therefore where they are best used.

Another way to speed up a database would be to consider what type of database you are going to use, for example if you were to use a NoSQL database in order to better handle large amounts of data you would see drastic performance increases as traditional databases are limited in how they can deal with this large amount of data. This is backed up by the work of Abramova, Veronika., Bernardino, J., Furtado, P. (2014) as they state the usefulness of NoSQL databases and compares and contrasts the different NoSQL databases which is quite useful if you wish to increase database performance.

In order to protect against the various harms that could befall your database you must think about the security considerations and how that applies to the task it must perform. If you are dealing with sensitive data such as customer financial information you may wish to encrypt certain columns in your database so that even if the database is hacked someone will not be able to immediately glean this sensitive data and therefore is an added layer of defence. Another way is to create a view of only the columns you wish people to see which means they will not see more sensitive columns such as user passwords for example which is a quite useful security measure.

Reference List -

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Abramova, Veronika., Bernardino, J., Furtado, P. (2014) Experimental Evaluation of NoSQL Databases. International journal of database management systems. [Online] **6**(3), pp.1-16. Coimbra, Portugal [Accessed 11 March 2015]. Available at: <http://airccse.org/journal/ijdms/papers/6314ijdms01.pdf>