Requirement Analysis Document.

**1 Introduction**

* 1. Purpose of the system

The purpose of this project is to create a database system that has multiple replicated databases that are stored in different servers with a major back up database for synchronization. The database system is to be implemented to the bank ATM system. A single database system controls all ATM transactions for their multiple ATM. The project aims at using database partitioning and replication to create a system that will simplify the management of the ATM bank transactions. The system will be an upgrade of the current system which provides several challenges in its functionality and maintainability. The system’s main purpose is to improve scalability which in turn improves availability in addition to increasing the manageability of the database. Upgrades and configurations to the database can be made without interfering with the normal functionality of the system.

* 1. Scope of the system

The scope of the system is the bank account database. The system will only be used in managing the ATM transaction processes. The system will apply in the access of the account database. In the implementation of the system, it will run through all the partitioned databases and their consequent servers. It will also apply to the backup database (main database) and its server. The system is applicable to one bank at a time and all its ATMs.

* 1. Objectives and success criteria of the project

The main objective of the system is to overcome the challenges brought about by using a single server to run all ATM transaction processes. This will be accomplished through the following minor objectives;

* Replication of the database
* Partitioning of the database
* Configure the partitions to synchronize and match the main database once any change is made to any database
* Configure access to the database to hold one transaction at a time and lock out other transaction when there is one entry
* Faster ATM transaction processing
* Synchronized data in all databases at all times
* Successful distribution of transactions
* Improved general performance
* Finer levels of granularity
  1. Definition, acronyms and abbreviations

Database replication – process of copying and maintaining the data objects in multiple databases

Database partition – this is the dividing of the database tables into multiple tables. Vertical partitioning creates multiple tables with fewer columns same rows while horizontal partitioning creates multiple tables with fewer rows but same number of columns.

Database Synchronization – this refers to the keeping of a number of databases, two or more, separate from each other up to date with the changes of each other.

* 1. References

Refers to the current database system used by the banks

* 1. Overview

The successful implementation of the system can be adopted by a variety of bank and other applications that require distributed database management. The systems main advantage is increased availability and speed of access.