Abstract

Every nation has vast amount of census data and analysis of these data is the value for nation as source citations, correlating and corroborating sources, relevance or findings contradictions. These census data may relate in any form based on family group records, friendship, co-worker and etc. In this paper, our nation, Myanmar’s census data is used as source citations for searching relationship between two distinct persons based on unique National Registration Card (NRC) Number. The Myanmar census data involve person name, date of birth, gender, occupation, parent names, relationship with householder, NRC number and detail parent’s family records including jobs and etc. NRC number is the unique identification number for every citizen in Myanmar. The aim of this paper is to observe the efficient data storage form for those related data among three types of database structure; relational DB, NoSQL DB, graph DB. The observation is done by retrieving data relationship from these databases using their query form. In relational database, personnel data is stored as table structure while in NoSQL databases like key-values store, column-family store and document store, personnel data is stored as key-values pair, column oriented and document oriented structure respectively. In graph database, personnel data is stored as graph structure with persons as nodes and relationship between them as edges. Then the query processing time is compared based on retrieving related data from those databases by using their relevant query
system and find out which query process can produce the optimal running time. The experimental results show that graph database is more powerful in retrieving relationship over relational and NoSQL databases and it can provide better performance when handling in highly interconnected data compared to relational and NoSQL databases.

References

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Index Terms

Computer Science Databases
Keywords
Relational Database  NoSQL Databases  Graph Database  Data Model  Query Model.