

Abstract

Graph database is a tool for modeling simple data and complex data. By containing nodes and edges, the data can be modeled to facilitate the analysis of a process in the form of a query. Graph databases are superior relational database because it can handle the data that is unstructured and semi-structured. Modeling data into graph form can vary. For example, the case of email, that are on a large scale and dynamic.

One email address can accommodate hundreds of thousands of emails from many users with different email addresses. Database presented will take a lot of tables with the same attributes, only different contents. For each destination address, it needs to establish a new table that holds the data communication between the users. Not if using the graph database modeling.

Those cases involve a framework approach with decomposition-based and selectivity-Aware for processing sub-graph query, namely graphREL. With decomposition-based, graphREL can apply the concept of B-Tree that are commonly only used in relational database modeling.

Keywords: graph database, email, framework relational, decomposition-based, selectivity-aware, graphREL, B-Tree