Optimizing the analysis of billing information using graph databases

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In today's world of diverse social ties their analysis becomes significant to identify different patterns to detect specific communities within a social network. Due to continuous and rapid growth of such information in recent years a large number of so-called NoSQL data stores have emerged to replace or supplement the traditional relational databases. Graph databases provide the most natural representation and additional means of effective implementation of algorithms for the analysis of relationships in social networks. In this paper main tasks of processing the billing information are considered and the option of optimizing the solution of these problems by using graph databases is discussed. Brief survey of Sones, Neo4J and DEX graph databases as well as their integrated tools for graph querying is carried out. Performance and memory requirements of typical queries are compared between the considered databases and a relational DBMS Microsoft SQL Server 2012. Finally, the applicability of databases according to the amount of data being processed is analyzed.

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