

**Abstract**

The main goal of the thesis is to investigate the development of the technology of graph databases. Descriptive and comparative analysis demonstrate the difference between MySQL and Neo4j database. It has been confirmed that graph databases are able to deal with complex relationships between data points much better. They enable to create entities to investigate relationships between data to make it easier to understand them because they are based on one table model.

What is more, graph databases seem to offer profoundly prime results. As a consequence, it is easier to gain the outcome by applying graph databases. In addition, provided that an actor wants to add a new relationship, it is not necessary to reconstruct the database one more time. Finally, as to the time execution of all processes, the retrieval time is faster with graph databases. Therefore, graph databases are more suitable for commercial reasons, such as development of the social network.

**Keywords:** Graph, Neo4j, MySQL