SQL2Cypher: Automated Data and Query Migration from RDBMS to GDBMS

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Background

- **GDBMS**: graph database management systems
- **RDBMS**: relational database management system
- Graph databases offer better performance in querying complex relational queries than relational database
- Migrating datasets requires a lot of repetitive operations (e.g.: rewrite queries and redefining schema)
Motivation

- Less time consuming to migrate databases
- Current solutions are either outdated or incomplete
  - Neo4j-ETL
  - Converting relational to graph database
  - D2r map-a database to rdf mapping language
Features of SQL2Cypher

- Data Migration from relational database (RDBMS) to graph database (GDBMS)
  - Relational database: MySQL, postgresql etc.
  - Graph database: Neo4j, Patmat etc.
- Query translation from SQL to Cypher
System Architecture

- User services
  - Configuration
  - Connect relationships of tables
  - Query translation

- Application layer
  - Process background task

- Configuration
  - RDBMS and GDBMS configuration
  - Load methods
Demonstration steps

- Add configuration information
  - RDBMS, GDBMS and load methods
- First scenario: IMDB relationships modification
  - Modifying the relationship of a table
- Second scenario: COVID-19 database migration
  - Treating tables as edge property
  - Translation of query
Thanks for listening