ST207 - Databases: Assignment 2

Question 2A - Neo4j Property Graph Data Model Figures

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1 2A.1: Property Graph Data Model

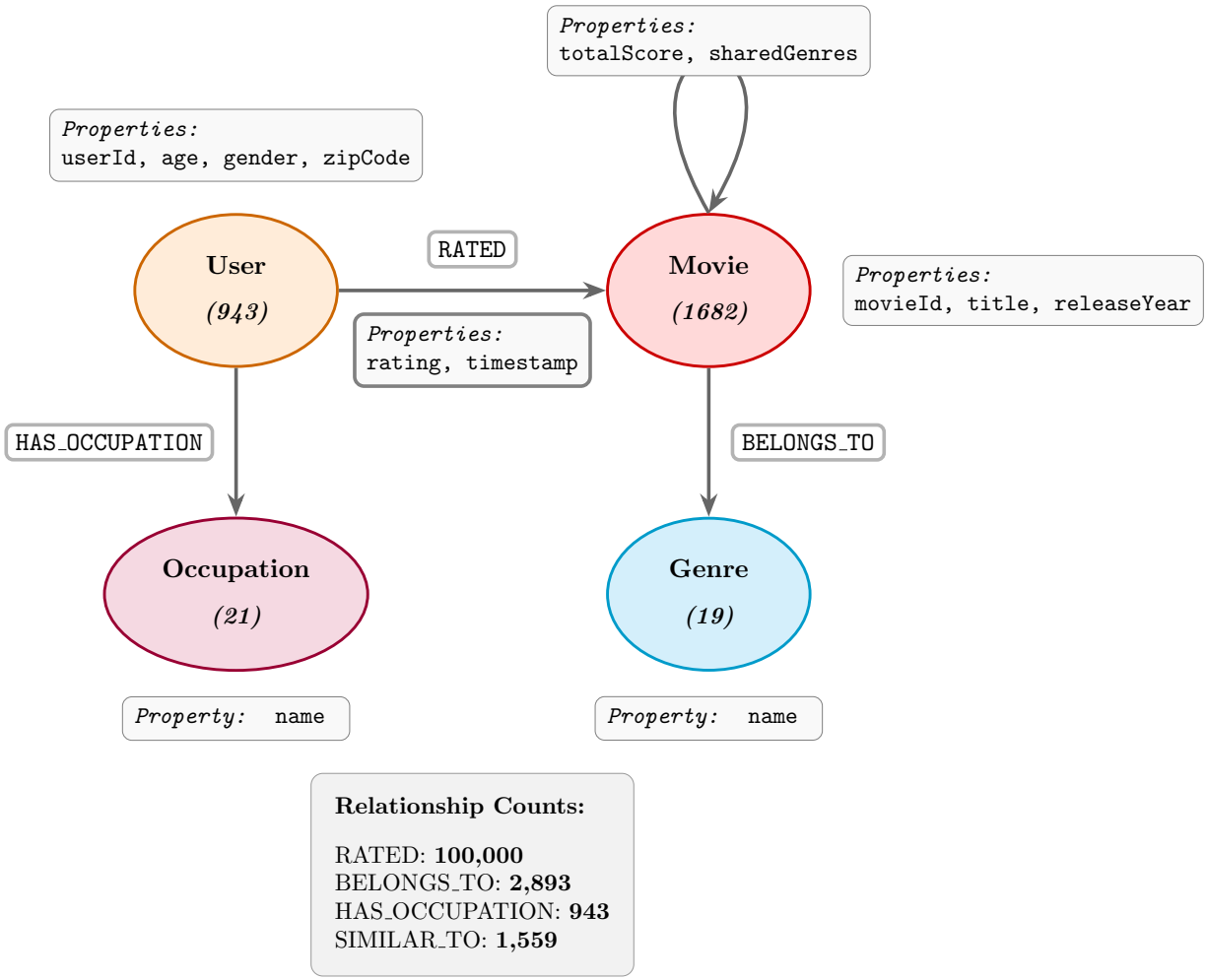

Figure 1: Property Graph Data Model for MovieLens 100K Movie Recommendation System

Figure 1: Node Types (User, Movie, Genre, Occupation) and their relationships. The model supports collaborative filtering, genre-based analysis, and movie similarity computations through a well-structured graph with 2,665 nodes and 105,395 relationships.

2 2A.2: Graph Visualization and Statistics

2.1 Neo4j AuraDB Browser Visualization

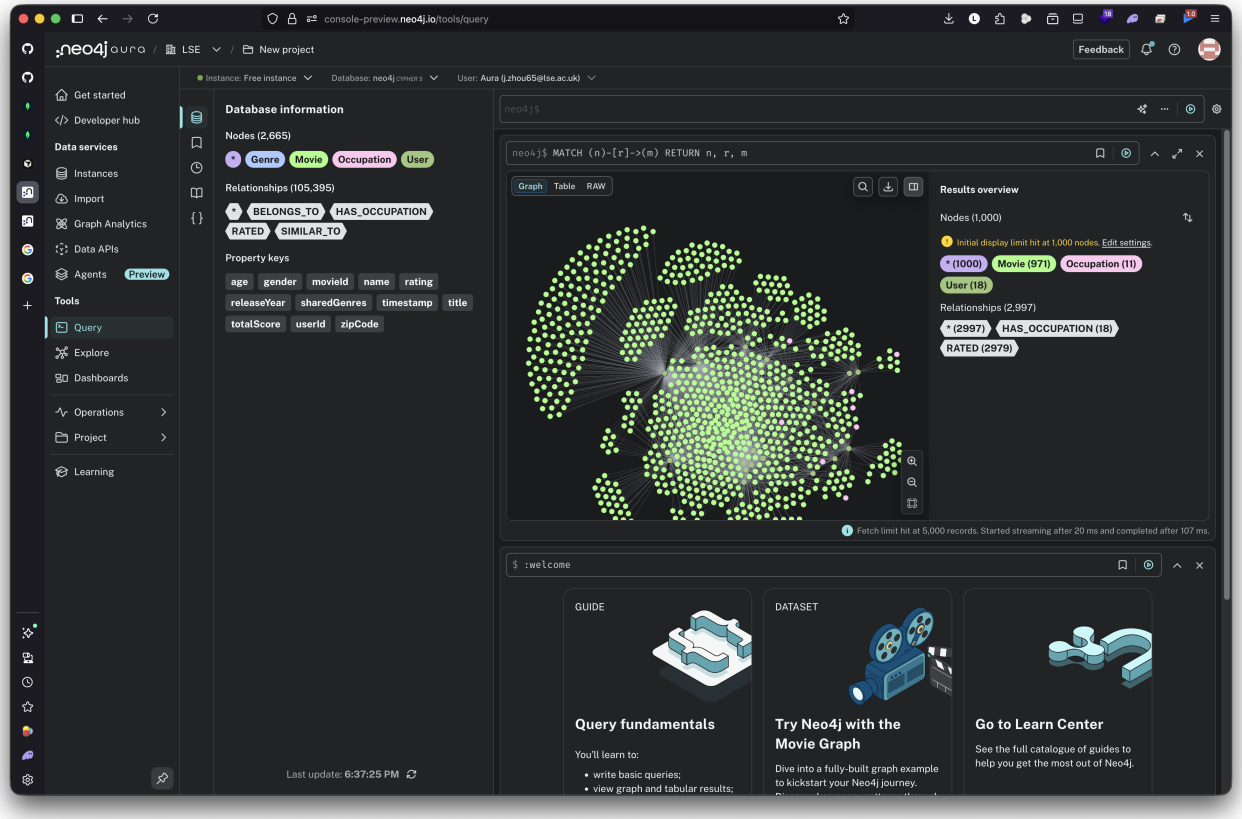

Figure 2: Neo4j AuraDB Browser: Interactive Graph Visualization

Figure 2: Neo4j AuraDB Browser visualization of the MovieLens 100K graph. The screenshot shows the complete database interface including node and relationship statistics (2,665 nodes and 105,395 relationships), and the interactive graph visualization displaying the interconnected structure with Users (orange), Movies (pink), Genres (cyan), and Occupations (purple) nodes, along with all relationship types (RATED, BELONGS_TO, HAS_OCCUPATION, SIMILAR_TO).

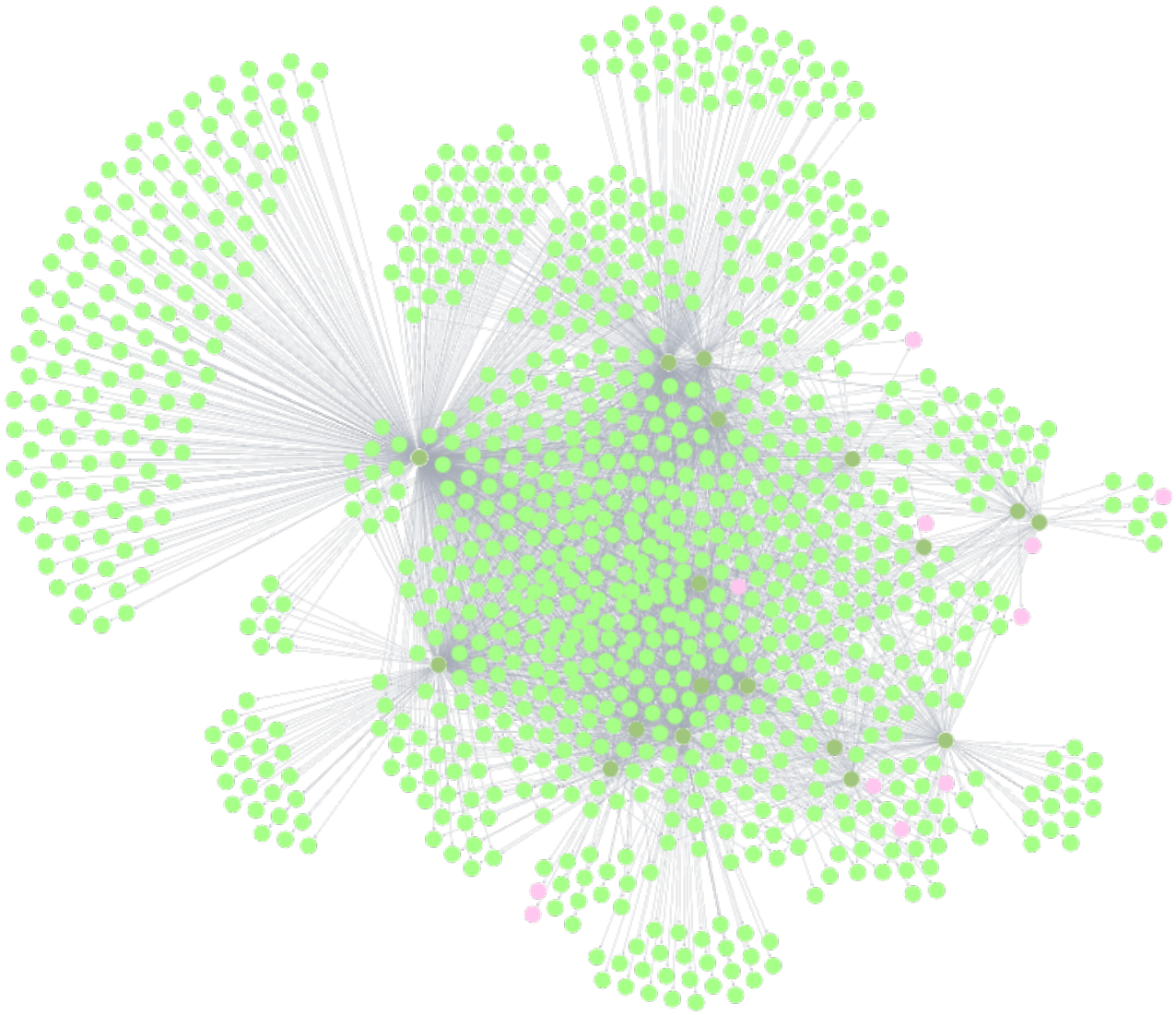

Figure 3: Graph Structure: Detailed View of Node and Relationship Distribution

Figure 3: Detailed view of the graph structure showing the distribution and connectivity of nodes. This is an enlarged view of the graph visualization from Figure 2, demonstrating the hub-and-spoke

pattern characteristic of movie recommendation systems, with Movies as central hubs connected to Users (through RATED relationships), Genres (through BELONGS_TO), and other Movies (through SIMILAR_TO).