

Graph Data Science

Concept Note: Social Network Analysis

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Abstract

This document serves to deliver the Graph Porperty Model and show the populated data in the form of a graph.

1 Import Query

Here is the import query for the KSE-30 companies.

2 Cypher Query for Import

Listing 1: Cypher query

```
LOAD CSV WITH HEADERS FROM 'file:///KSE_30_Formatted.csv' AS row
WITH row
WHERE row.Board of Directors IS NOT NULL AND TRIM(row.Board of Directors)
WITH row, SPLIT(row.Board of Directors, ";") AS directors
UNWIND directors AS directorDetails
WITH row, directorDetails
WHERE TRIM(directorDetails) <> "" AND directorDetails IS NOT NULL
WITH row, TRIM(SPLIT(directorDetails, "(")[0]) AS DirName, TRIM(SPLIT(SPL

WITH row, DirName, position
WHERE row.Year IS NOT NULL AND TRIM(row.Year) <> ""
WITH row, DirName, position
WHERE row.Company Sector IS NOT NULL AND TRIM(row.Company Sector) <> ""
WITH row, DirName, position
WHERE row.Secretary IS NOT NULL AND TRIM(row.Secretary) <> ""
WITH row, DirName, position
WHERE row.Chairperson IS NOT NULL AND TRIM(row.Chairperson) <> ""
```

```

WITH row,DirName,position
WHERE row.Company Symbol IS NOT NULL AND TRIM(row.Company Symbol) <> ""
WITH row,DirName,position
WHERE row.Company Name IS NOT NULL AND TRIM(row.Company Name) <> ""
WITH row,DirName,position
WHERE row.Company CEO IS NOT NULL AND TRIM(row.Company CEO) <> ""

MERGE (company:Company {name: row.Company Name, symbol: row.Company Symbol})
MERGE (sector:Sector {name: row.Company Sector})
MERGE (chairperson:Person {name: row.Chairperson})
MERGE (secretary:Person {name: row.Secretary})
MERGE (ceo:Person {name: row.Company CEO})

WITH company, sector, chairperson, secretary, ceo, row, DirName, position
WHERE position IS NOT NULL AND TRIM(position) <> ""
MERGE (director:Person {name:DirName})
MERGE (director)-[:BOARD_MEMBER_OF {position: position}]->(company)

MERGE (chairperson)-[:CHAIRPERSON_OF]->(company)
MERGE (secretary)-[:SECRETARY_OF]->(company)
MERGE (ceo)-[:CEO_OF]->(company)
MERGE (company)-[:BELONGS_TO_SECTOR]->(sector);

```

3 Data Model

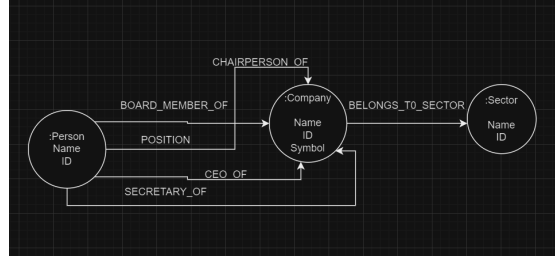


Figure 1: Graph Property Model Image

4 csv File

You can download the CSV file from the following link: [Download CSV](#)