



**北京理工大学**  
BEIJING INSTITUTE OF TECHNOLOGY

# **Graph DB and Neo4j Experiment Report**

Subject : Big Data Analysis

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## Objectives:

build a graph DB more than 100 nodes, more than 3 relations; cover the grammar key words exercises, which includes create, match, return, where, delete, order by, set and etc. record the screenshot of each results

## Results:

The image displays two screenshots of the Neo4j Query Editor interface, showing the results of a series of queries executed on a database.

**Top Screenshot:**

- Database Information:** Shows 200 Nodes (Person, Product) and 0 Relationships. Property keys include age, data, id, name, nodes, price, relationships, style, and visualisation.
- Query Results:**
  - Query 1: `neo4j$ // Create 100 Product nodes UNWIND range(101, 200) as id CREATE (:Product {id: id, name: 'Product ' + id})`. Result: Created 100 nodes, set 200 properties, added 100 labels. Completed after 61ms.
  - Query 2: `1 // Create 100 Person nodes 2 UNWIND range(1, 100) as id 3 CREATE (:Person {name: 'Person ' + id, age: id})`. Result: Created 100 nodes, set 200 properties, added 100 labels. Completed after 99ms.

**Bottom Screenshot:**

- Database Information:** Shows 200 Nodes (Person, Product) and 4,950 Relationships (KNOWS). Property keys include age, data, id, name, nodes, price, relationships, style, and visualisation.
- Query Results:**
  - Query 1: `1 MATCH (p1:Person), (p2:Person) 2 WHERE p1.age < p2.age 3 CREATE (p1)-[:KNOWS]->(p2)`. Result: Created 4950 relationships. Completed after 311ms. A note indicates: "This query builds a cartesian product between disconnected patterns."
  - Query 2: `neo4j$ // Create 100 Product nodes UNWIND range(101, 200) as id CREATE (:Product {id: id, name: 'Product ' + id})`. Result: Created 100 nodes, set 200 properties, added 100 labels. Completed after 61ms.
  - Query 3: `neo4j$ // Create 100 Person nodes UNWIND range(1, 100) as id CREATE (:Person {name: 'Person ' + id, age: id})`. Result: Created 100 nodes, set 200 properties, added 100 labels. Completed after 99ms.

Database Information

Nodes (200)

Person

Product

Relationships (4,950)

KNOWS

Property keys

age

data

id

name

nodes

price

relationships

style

visualisation

Last update: 11:31:25 PM

neo4j\$

1 MATCH (p1:Person)-[:KNOWS]→(p2:Person)

2 WHERE p1.age > 50

3 RETURN p1, p2

Graph

Table

RAW

Results Overview

Nodes (50)

Person (50)

Started streaming 1225 records after 74ms and completed after 204ms.

Database Information

Nodes (200)

Person

Product

Relationships (4,950)

KNOWS

Property keys

age

data

id

name

nodes

price

relationships

style

visualisation

Last update: 11:31:25 PM

neo4j\$

1 MATCH (p1:Person)-[:KNOWS]→(p2:Person)

2 WHERE p1.age > 50

3 RETURN p1, p2

Graph

Table

RAW

p1	p2
(:Person {name: "Person 51", age: 51})	(:Person {name: "Person 88", age: 88})
(:Person {name: "Person 51", age: 51})	(:Person {name: "Person 79", age: 79})
(:Person {name: "Person 51", age: 51})	(:Person {name: "Person 87", age: 87})
(:Person {name: "Person 51", age: 51})	(:Person {name: "Person 53", age: 53})
(:Person {name: "Person 51", age: 51})	(:Person {name: "Person 68", age: 68})
(:Person {name: "Person 51", age: 51})	(:Person {name: "Person 91", age: 91})

Started streaming 1225 records after 74ms and completed after 204ms.

Database Information

Nodes (199)

Person

Product

Relationships (4,851)

KNOWS

Property keys

age

data

id

name

nodes

price

relationships

style

visualisation

neo4j\$

1 MATCH (p:Person {name: 'Person 1'})

2 DETACH DELETE p

Deleted 1 node, deleted 99 relationships

Completed after 61ms

neo4j\$ MATCH (p1:Person)-[:KNOWS]→(p2:Person) WHERE p1.age > 50 RETURN

Graph

Table

RAW

Database Information

Nodes (199)

Person

Product

Relationships (4,851)

KNOWS

Property keys

age

data

id

name

nodes

price

relationships

style

visualisation

Last update: 11:33:19 PM

neo4j\$

1 MATCH (p:Person)

2 RETURN p

3 ORDER BY p.age DESC

Graph

Table

RAW

Started streaming 99 records after 52ms and completed after 59ms.

Results Overview

Nodes (99)

Person (99)

Database Information

Nodes (199)

Person

Product

Relationships (4,851)

KNOWS

Property keys

age

data

id

name

nodes

price

relationships

style

visualisation

Last update: 11:33:19 PM

neo4j\$

1 MATCH (p:Person)

2 RETURN p

3 ORDER BY p.age DESC

Graph

Table

RAW

Started streaming 99 records after 52ms and completed after 59ms.

p

(:Person {name: "Person 100", age: 100})

(:Person {name: "Person 99", age: 99})

(:Person {name: "Person 98", age: 98})

(:Person {name: "Person 97", age: 97})

(:Person {name: "Person 96", age: 96})

(:Person {name: "Person 95", age: 95})

(:Person {name: "Person 94", age: 94})

(:Person {name: "Person 93", age: 93})

(:Person {name: "Person 92", age: 92})

Database Information

Nodes (199)

Person

Product

Relationships (4,851)

KNOWS

neo4j\$

1 MATCH (p:Person {name: 'Person 2'})

2 SET p.name = 'Juanna'

Set 1 property

Completed after 58ms

