

TP3 - Neo4J

Exercise 1 : Display 5 directors who have directed the largest number of films

```
match (p) - [:DIRECTED] ->(m) return p.name, count(m) as cnt order by cnt desc limit 5
```

```
neo4j$ match (p) - [:DIRECTED] ->(m) return p.name, count(m) as cnt order by cnt desc limit 5
```

	p.name	cnt
1	"Lana Wachowski"	5
2	"Lilly Wachowski"	5
3	"Ron Howard"	3
4	"Rob Reiner"	3
5	"Nora Ephron"	2

Exercise 2 : Add the KNOWS relationship between all the actors in the same movie

```
match (p1)-[:ACTED_IN]->(m1),(m2) <-[:ACTED_IN]-(p2) where m1.title=m2.title
merge (p1) -[:KNOWS]-> (p2)
```

The screenshot shows the Neo4j Cypher Shell interface. The command entered is: `neo4j$ match (p1)-[:ACTED_IN]->(m1),(m2) <-[:ACTED_IN]-(p2) where m1.title=m2.title merge...`. The status bar indicates "Created 724 relationships, completed after 51 ms." The interface includes a sidebar with icons for Table, Warn, and Code.

Exercise 3 : Recommend 3 actors with whom Keanu Reeves could work but this has never been the case

```
match (p)-[:ACTED_IN]-> (m) <-[:DIRECTED]-(d) where p.name = 'Keanu Reeves' and not (p)-[:KNOWS]->(d) return distinct d.name limit 3
```

```
4j$ match (p)-[:ACTED_IN]-> (m) <-[:DIRECTED]-(d) where p.name = 'Keanu Reeves' a...
```

	d.name
1	"Lilly Wachowski"
2	"Lana Wachowski"
3	"Taylor Hackford"

This query first finds the people that have acted in and the directors that have directed those films. Then we define the person as Keanu and we want to find the people he does not know in the second part of the query. Finally, we return the distinct names and limit the number of names by 3.

```
match (p1)-[:KNOWS]-> (p2) where p1.name = 'Keanu Reeves' return distinct p2.name
```

Then we verify that these three names do not appear in the list of names of the people that Keanu knows.

There are 14 names in this list and these 3 names do not appear so our query is correct.


```
4j$ match (p1)-[:KNOWS]-> (p2) where p1.name = 'Keanu Reeves' return distinct p2.name
```


	p2.name
1	"Orlando Jones"
2	"Al Pacino"
3	"Hugo Weaving"
4	"Jack Nicholson"
5	"Gene Hackman"
6	"Charlize Theron"


- Display the actor “Tom Hanks”


```
match (tom{name:"Tom Hanks"}) return tom
```


```
neo4j$ match (tom{name:"Tom Hanks"}) return tom
```

Graph

Table

Text

Code



- Which actors have played in the same movie as Tom Hanks?

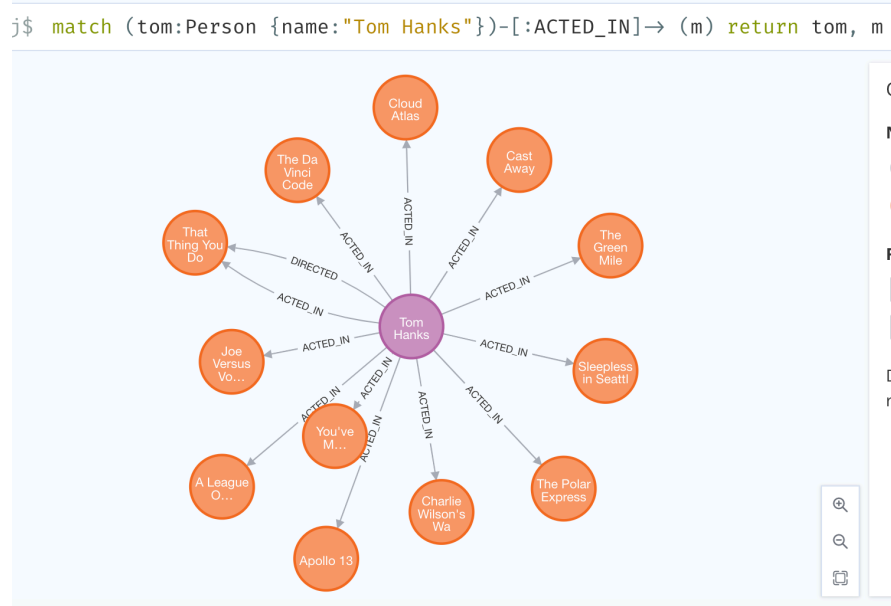
```
match (tom:Person {name:"Tom Hanks"})-[:ACTED_IN]-> (M)<-[:ACTED_IN]-(coactors) return coactors.name
```

```
4j$ match (tom:Person {name:"Tom Hanks"})-[:ACTED_IN]-> (M)<-[:ACTED_IN]-(coactors) return coactors.name
```

	coactors.name
1	"Julia Roberts"
2	"Philip Seymour Hoffman"
3	"Meg Ryan"
4	"Victor Garber"
5	"Bill Pullman"
6	"Rita Wilson"

- Display Tom Hanks movies

```
match (tom:Person {name:"Tom Hanks"})-[:ACTED_IN]-> (m) return tom, m
```



- Which director also played in a movie?

```
match (a)-[:ACTED_IN]->(m)<-[:DIRECTED]-(a) return a.name, m.title
```

```
o4j$ match (a)-[:ACTED_IN]->(m)<-[:DIRECTED]-(a) return a.name, m.title
```

	a.name	m.title
1	"Tom Hanks"	"That Thing You Do"
2	"Clint Eastwood"	"Unforgiven"
3	"Danny DeVito"	"Hoffa"

- How people are related to “Cloud Atlas”?

match (p)-[relatedTo]-(:Movie{title:"Cloud Atlas"}) **return** p.name, Type(relatedTo), relatedTo

```
cy4j$ match-(p)-[relatedTo]-(:Movie{title:"Cloud Atlas"})-return p.name, Type(relatedTo), relatedTo
```

	p.name	Type(relatedTo)	relatedTo
1	"Tom Hanks"	"ACTED_IN"	{ "identity": 137, "start": 71, "end": 105, "type": "ACTED_IN", "properties": { "roles": ["Zachry", "Dr. Henry Goose", "Isaac Sachs", "Dermot Hoggins"] }, "elementId": "137", "startNodeElementId": "71", "endNodeElementId": "105" }

- Directors who directed movies with Tom Hanks as actor

match (p)-[:ACTED_IN]->(m), (d)-[:DIRECTED]->(m) **where** p.name= "Tom Hanks" **return** d.name

```
cy4j$ match (p)-[:ACTED_IN]->(m), (d)-[:DIRECTED]->(m) where p.name= "Tom Hanks" return d.name
```

	d.name
1	"Nora Ephron"
2	"Nora Ephron"
3	"John Patrick Stanley"
4	"Tom Hanks"
5	"Tom Tykwer"
6	"Lilly Wachowski"

- Actors who worked with Keanu Reeves but not when he played with Hugo Weaving

match (keanu:Person)-[:ACTED_IN]->(movie), (n)-[:ACTED_IN]->(movie), (hugo:Person) **where** keanu.name = "Keanu Reeves" **and** hugo.name="Hugo Weaving" **AND NOT** (hugo)-[:ACTED_IN]->(movie) **return distinct** n.name

```
cy4j$ match (keanu:Person)-[:ACTED_IN]->(movie), (n)-[:ACTED_IN]->(movie), (hugo:Person) where keanu.name = "Keanu Reeves" and hugo.name="Hugo Weaving" AND NOT (hugo)-[:ACTED_IN]->(movie) return distinct n.name
```

	n.name
1	"Diane Keaton"
2	"Jack Nicholson"
3	"Brooke Langton"
4	"Orlando Jones"
5	"Gene Hackman"
6	"Ice-T"
7	