TP : Neo4j

TP : 23/12/2024

```
CREATE (m1:Movie {title: 'The Matrix', released: 1999, tagline: 'Welcome to the Real World'})
CREATE (m2:Movie {title: 'Inception', released: 2010, tagline: 'Your mind is the scene of the crime'})
CREATE (m3:Movie {title: 'The Dark Knight', released: 2008, tagline: 'Why so serious?'})
CREATE (p1:Person {name: 'Keanu Reeves', born: 1964})
CREATE (p2:Person {name: 'Leonardo DiCaprio', born: 1974})
CREATE (p3:Person {name: 'Christian Bale', born: 1974})
CREATE (p4:Person {name: 'Christopher Nolan', born: 1970})
CREATE (p1)-[:ACTED_IN]→(m1)
CREATE (p2)-[:ACTED_IN]→(m2)
CREATE (p3)-[:ACTED_IN]→(m3)
CREATE (p4)-[:DIRECTED]→(m2)
CREATE (p4)-[:DIRECTED]→(m3)
```

Added 7 labels, created 7 nodes, set 17 properties, created 5 relationships, completed after 54 ms.

```
MATCH (p:Person {name: 'Keanu Reeves'})-[:ACTED_IN]→(m:Movie)
RETURN m.title AS Movie, m.released AS Year
```

	Movie	Year
1	"The Matrix"	1999
2	"The Matrix"	1999

```
MATCH (m:Movie {title: 'Inception'})←[:DIRECTED]-(p:Person)
RETURN p.name AS Director
```

	Director
1	"Christopher Nolan"
2	"Christopher Nolan"

```
MATCH (m:Movie)
WHERE m.released > 2000
RETURN m.title AS Movie, m.released AS Year
```

	Movie	Year
1	"Inception"	2010
2	"The Dark Knight"	2008
3	"Inception"	2010
4	"The Dark Knight"	2008
5	"Inception"	2010
6	"The Dark Knight"	2008

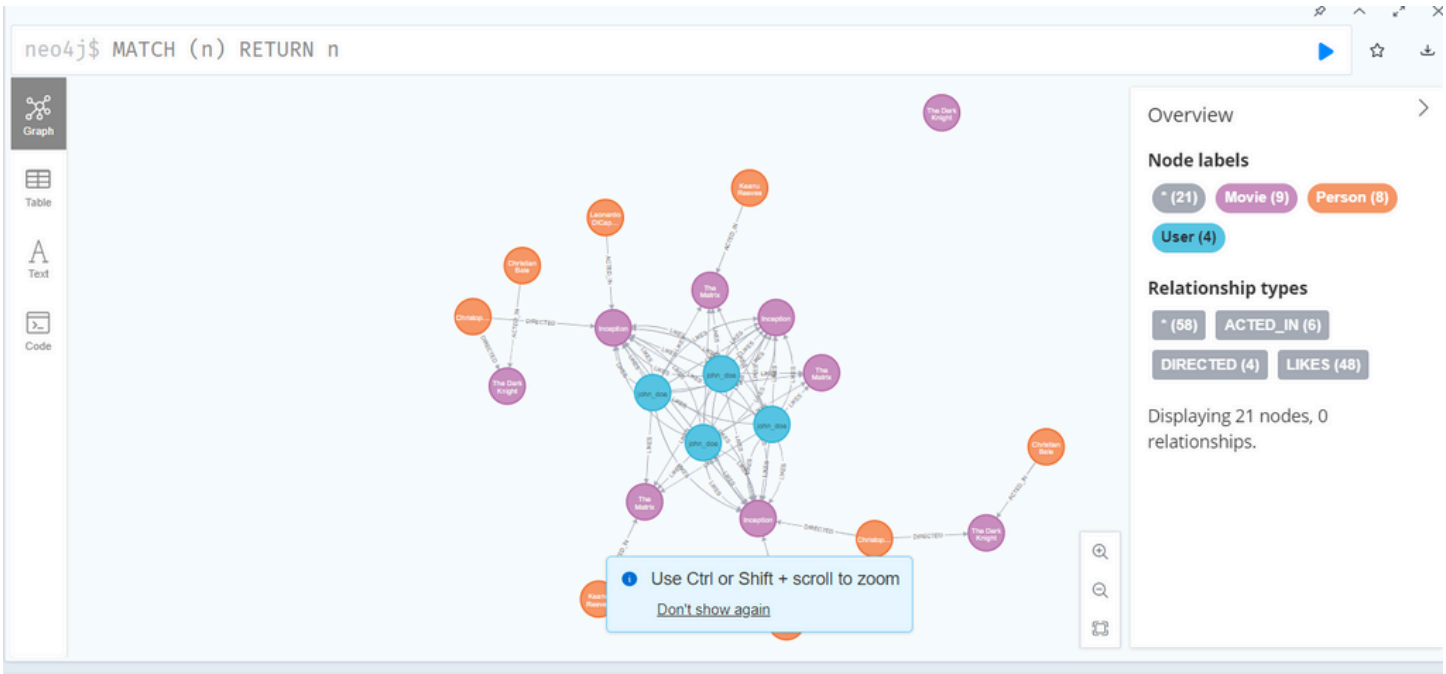
```
// Créer un utilisateur et aimer des films
CREATE (u1:User {username: 'john_doe'})
WITH u1
MATCH (m1:Movie {title: 'The Matrix'})
CREATE (u1)-[:LIKES]→(m1)
WITH u1
MATCH (m2:Movie {title: 'Inception'})
CREATE (u1)-[:LIKES]→(m2);

// Requête : films aimés par l'utilisateur 'john_doe'
MATCH (u:User {username: 'john_doe'})-[:LIKES]→(m:Movie)
RETURN m.title AS Movie;
```

```
neo4j$ CREATE (u1:User {username: 'john_doe'}) WITH u1 MATCH (m1:Movie…
neo4j$ MATCH (u:User {username: 'john_doe'})-[:LIKES]→(m:Movie) RETUR…
```

```
MATCH (m:Movie)←[:ACTED_IN]-(p:Person)
RETURN m.title AS Movie, p.name AS Person;
```

	Movie	Person
1	"The Matrix"	"Keanu Reeves"
2	"Inception"	"Leonardo DiCaprio"
3	"The Dark Knight"	"Christian Bale"
4	"The Matrix"	"Keanu Reeves"
5	"Inception"	"Leonardo DiCaprio"
6	"The Dark Knight"	"Christian Bale"

TP : 6/1/2025



```
neo4j$ CALL gds.graph.project( 'base-graph', ['User', 'Movie'], ['RATED'] );
```

nodeProjection	relationshipProjection	graphName	nodeCount	relationshipCount	projectMillis

<pre>{
  "User": {
  "label": "User",
  "properties": {
 	
  }
  },
  "Movie": {
  "label": "Movie",
  "properties": {
 	
  }
  }
}</pre>
	<pre>{
	  "RATED": {
	  "aggregation": "DEFAULT",
	  "orientation": "NATURAL",
	  "indexInverse": false,
	  "properties": {
	
	  },
	  "type": "RATED"
	  }
	}</pre>
		"base-graph"	15	1	226

```
$ CALL gds.graph.list();
```

degreeDistribution	graphName	database	databaseLocation	memoryUsage	sizeInBytes	nodeCount	relationshipCount	configuration	density	creationTime	modificationTime	schema	schemaWithOrientation
{min: 0, max: 1, p90: 0, p999: 1, p99: 1, p50: 0, p75: 0, p95: 1, mean: 0.0666666666667}	"base-graph"	"neo4j"	"local"	"302 KiB"	309944	15	1	{relationshipProjection: {RATED: {aggregation: "DEFAULT", orientation: "NATURAL", indexInverse: false, properties: {}, type: "RATED"}}, nodeProjection: {User: {label: "User", properties: {}}, Movie: {label: "Movie", properties: {}}}, readConcurrency: 4, relationshipProperties: {}, nodeProperties: {}, jobId: "387a3ff1	0.00476190476190476	"2025-01-07T16:50:12.983005700+01:00[Europe/Paris]"	"2025-01-07T16:50:12.983005700+01:00[Europe/Paris]"	{graphProperties: {}, nodes: {User: {}, Movie: {}}, relationships: {RATED: {}}}	{graphProperties: {}, nodes: {User: {}, Movie: {}}, relationships: {RATED: {direction: "DIRECTED", properties: {}}}}

```
CALL gds.degree.stream('base-graph')
YIELD nodeId, score
RETURN gds.util.asNode(nodeId).title AS movieTitle, score AS degree
ORDER BY degree DESCENDING
LIMIT 10;
```

movieTitle	degree
null	1.0
"The Dark Knight"	0.0
"Inception"	0.0
"Inception"	0.0
"The Dark Knight"	0.0
"The Matrix"	0.0
"The Matrix"	0.0
"The Dark Knight"	0.0
null	0.0
"Inception"	0.0

```
CALL gds.graph.project(
  'reverse-graph-v2',
  ['User', 'Movie'],
  {RATED_BY: {type: 'RATED', orientation: 'REVERSE'}}
);
```

nodeProjection	relationshipProjection	graphName	nodeCount	relationshipCount	projectMillis
{User: {label: "User", properties: {}}, Movie: {label: "Movie", properties: {}}}	{RATED_BY: {aggregation: "DEFAULT", orientation: "REVERSE", indexInverse: false, properties: {}, type: "RATED"}}	"reverse-graph-v2"	15	1	23

```
CALL gds.degree.stream('reverse-graph')
YIELD nodeId, score
RETURN gds.util.asNode(nodeId).title AS movieTitle, score AS ratingCount
ORDER BY ratingCount DESCENDING
LIMIT 10;
```

movieTitle	ratingCount
"The Matrix"	1.0
"The Dark Knight"	0.0
"Inception"	0.0
"Inception"	0.0
"The Dark Knight"	0.0
"The Matrix"	0.0
"The Matrix"	0.0
"The Dark Knight"	0.0
null	0.0
"Inception"	0.0

```
CALL gds.graph.project(
  'undirectedGraph',
  ['User', 'Movie'],
  {
    RATED: {
      type: 'RATED',
      orientation: 'UNDIRECTED'
    }
  }
)
```

nodeProjection	relationshipProjection	graphName	nodeCount	relationshipCount	projectMillis
{User: {label: "User", properties: {}}, Movie: {label: "Movie", properties: {}}}	{RATED: {aggregation: "DEFAULT", orientation: "UNDIRECTED", indexInverse: false, properties: {}, type: "RATED"}}	"undirectedGraph"	15	2	48

```
CALL gds.degree.stream('undirectedGraph')
YIELD nodeId, score
RETURN gds.util.asNode(nodeId).title AS Node, score AS Connections
ORDER BY Connections DESC;
```

Node	Connections
null	1.0
"The Matrix"	1.0
"The Matrix"	0.0
"Inception"	0.0
"The Dark Knight"	0.0
"The Matrix"	0.0
"Inception"	0.0
"The Dark Knight"	0.0
"The Matrix"	0.0
"Inception"	0.0
"The Dark Knight"	0.0
null	0.0
null	0.0
null	0.0
null	0.0