

## Similitud de Cosenos

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### Procedimiento

- Creación de nodos

```
CREATE (french:Cuisine {name:'French'})
```

```
CREATE (italian:Cuisine {name:'Italian'})
```

```
CREATE (indian:Cuisine {name:'Indian'})
```

```
CREATE (lebanese:Cuisine {name:'Lebanese'})
```

```
CREATE (portuguese:Cuisine {name:'Portuguese'})
```

```
CREATE (british:Cuisine {name:'British'})
```

```
CREATE (mauritian:Cuisine {name:'Mauritian'})
```

```
CREATE (zhen:Person {name: 'Zhen'})
```

```
CREATE (praveena:Person {name: 'Praveena'})
```

```
CREATE (michael:Person {name:'Michael'})
```

```
CREATE (arya:Person {name: 'Arya'})
```

```
CREATE (karin:Person {name: 'Karin'})
```

```
CREATE (praveena)-[:LIKES {score: 9}]->(indian)
```

```
CREATE (praveena)-[:LIKES {score: 7}]->(portuguese)
```

```
CREATE (praveena)-[:LIKES {score: 8}]->(british)
```

```
CREATE (praveena)-[:LIKES {score: 1}]->(mauritian)
```

```
CREATE (zhen)-[:LIKES {score: 10}]->(french)
```

```
CREATE (zhen)-[:LIKES {score: 6}]->(indian)
```

```
CREATE (zhen)-[:LIKES {score: 2}]->(british)
```

```
CREATE (michael)-[:LIKES {score: 8}]->(french)
```

```
CREATE (michael)-[:LIKES {score: 7}]->(italian)
```

```
CREATE (michael)-[:LIKES {score: 9}]->(indian)
```

```
CREATE (michael)-[:LIKES {score: 3}]->(portuguese)
```

```

CREATE (arya)-[:LIKES {score: 10}]->(lebanese)
CREATE (arya)-[:LIKES {score: 10}]->(italian)
CREATE (arya)-[:LIKES {score: 7}]->(portuguese)
CREATE (arya)-[:LIKES {score: 9}]->(mauritian)
CREATE (karin)-[:LIKES {score: 9}]->(lebanese)
CREATE (karin)-[:LIKES {score: 7}]->(italian)
CREATE (karin)-[:LIKES {score: 10}]->(portuguese)

```

```

neo4j$ CREATE (french:Cuisine {name:'French'}) CREATE (italian:Cuisine {name:'Italian'}) CREATE (indian:Cuisine...

```

Added 12 labels, created 12 nodes, set 30 properties, created 18 relationships, completed after 10 ms.

- Match de los nodos creados.



- Probamos con la similitud entre Michael y Arya.

```

MATCH (p1:Person {name: 'Michael'})-[likes1:LIKES]->(cuisine)
MATCH (p2:Person {name: 'Arya'})-[likes2:LIKES]->(cuisine)
RETURN p1.name AS from,
p2.name AS to,
gds.alpha.similarity.cosine(collect(likes1.score), collect(likes2.score)) AS similarity

```

```
neo4j$ MATCH (p1:Person {name: 'Michael'})-[likes1:LIKES]->(cuisine) MATCH (p2:Person {name: 'Arya'})-[like...
```

	from	to	similarity
1	"Michael"	"Arya"	0.9788908326303921

- Ahora procedemos a hallar la similitud de Coseno de Michael con otras personas en común.

```
MATCH (p1:Person {name: 'Michael'})-[likes1:LIKES]->(cuisine)
```

```
MATCH (p2:Person)-[likes2:LIKES]->(cuisine) WHERE p2 <> p1
```

```
RETURN p1.name AS from,
```

```
p2.name AS to,
```

```
gds.alpha.similarity.cosine(collect(likes1.score), collect(likes2.score)) AS similarity
```

```
ORDER BY similarity DESC
```

```
neo4j$ MATCH (p1:Person {name: 'Michael'})-[likes1:LIKES]->(cuisine) MATCH (p2:Person)-[likes2:LIKES]->(cui...
```

	from	to	similarity
1	"Michael"	"Arya"	0.9788908326303921
2	"Michael"	"Zhen"	0.9542262139256075
3	"Michael"	"Praveena"	0.9429903335828894
4	"Michael"	"Karin"	0.8498063272285821