

# Prova 2 - CSI 30 - 2025

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## 1 Script de criação do grafo em Cypher

### 1.1 Criar os nós

A seguir, o comando para criação dos nós no grafo:

```
1 CREATE
2   // Pessoas
3   (martin:Person {name: 'Martin'}),
4   (pramod:Person {name: 'Pramod'}),
5   (barbara:Person {name: 'Barbara'}),
6   (elizabeth:Person {name: 'Elizabeth'}),
7   (anna:Person {name: 'Anna'}),
8   (carol:Person {name: 'Carol'}),
9   (dawn:Person {name: 'Dawn'}),
10  (jill:Person {name: 'Jill'}),
11
12  // Empresa
13  (bigco:Company {name: 'BigCo'}),
14
15  // Livros
16  (nosql:Book {title: 'NoSQL Distililled'}),
17  (dbref:Book {title: 'Database Refactoring'}),
18  (refac:Book {title: 'Refactoring'}),
19
20  // Categoria
21  (dbCat:Category {name: 'Databases'});
```

### 1.2 Criar os relacionamentos

Em seguida, o comando para criação dos relacionamentos entre os nós já criados:

```
1 MATCH
2   (martin:Person {name: 'Martin'}),
3   (pramod:Person {name: 'Pramod'}),
4   (barbara:Person {name: 'Barbara'}),
```

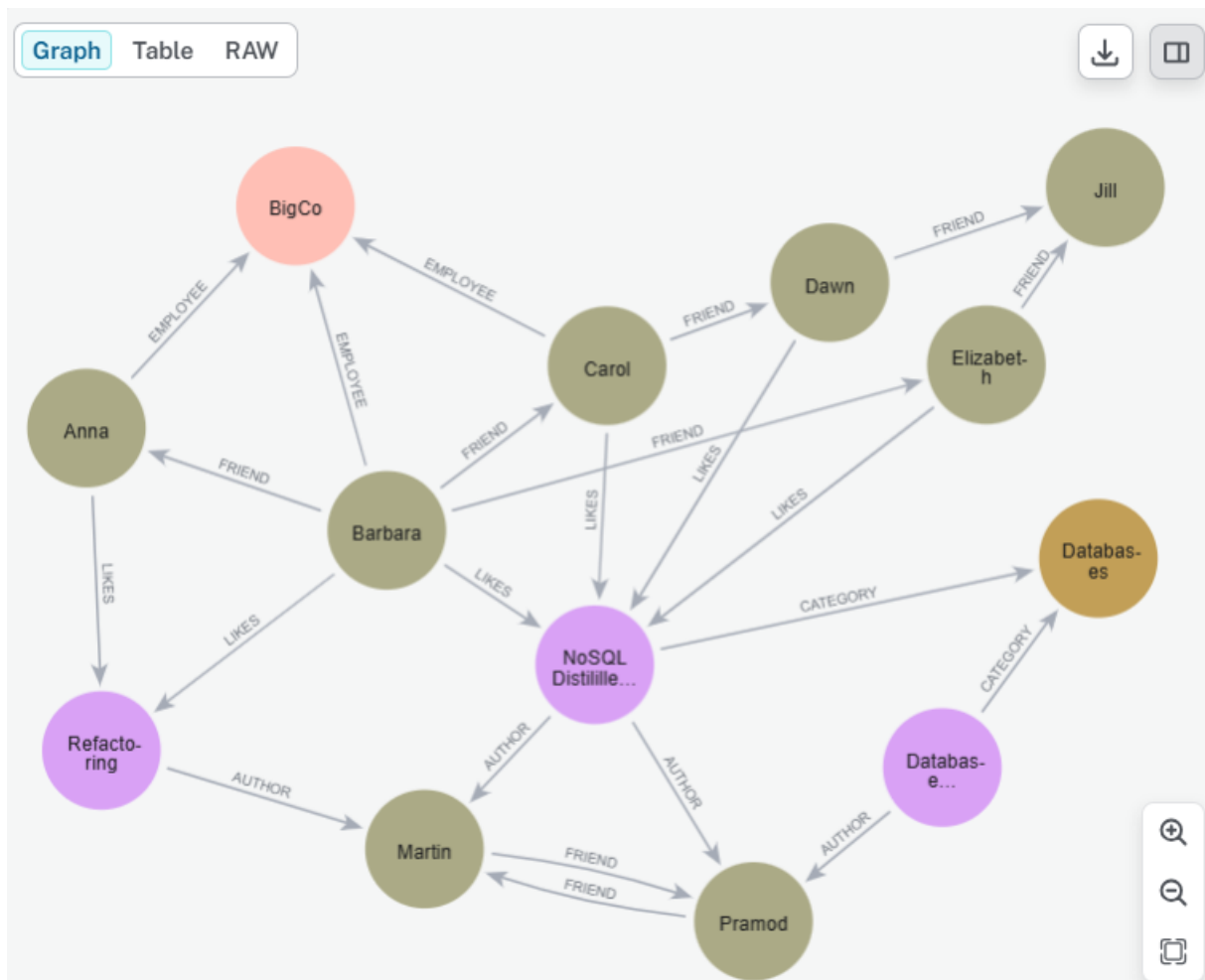
```

5  (elizabeth:Person {name: 'Elizabeth'}),
6  (anna:Person {name: 'Anna'}),
7  (carol:Person {name: 'Carol'}),
8  (dawn:Person {name: 'Dawn'}),
9  (jill:Person {name: 'Jill'}),
10 (bigco:Company {name: 'BigCo'}),
11 (nosql:Book {title: 'NoSQL Distililled'}),
12 (dbref:Book {title: 'Database Refactoring'}),
13 (refac:Book {title: 'Refactoring'}),
14 (dbCat:Category {name: 'Databases'})
15 CREATE
16 // author
17 (nosql)-[:AUTHOR]->(martin),
18 (nosql)-[:AUTHOR]->(pramod),
19 (dbref)-[:AUTHOR]->(pramod),
20 (refac)-[:AUTHOR]->(martin),
21
22 // category
23 (dbref)-[:CATEGORY]->(dbCat),
24 (nosql)-[:CATEGORY]->(dbCat),
25
26 // friend
27 (martin)-[:FRIEND]->(pramod),
28 (pramod)-[:FRIEND]->(martin),
29 (barbara)-[:FRIEND]->(elizabeth),
30 (barbara)-[:FRIEND]->(anna),
31 (barbara)-[:FRIEND]->(carol),
32 (carol)-[:FRIEND]->(dawn),
33 (dawn)-[:FRIEND]->(jill),
34 (elizabeth)-[:FRIEND]->(jill),
35
36 // employee
37 (carol)-[:EMPLOYEE]->(bigco),
38 (anna)-[:EMPLOYEE]->(bigco),
39 (barbara)-[:EMPLOYEE]->(bigco),
40
41 // likes
42 (anna)-[:LIKES]->(refac),
43 (barbara)-[:LIKES]->(refac),
44 (barbara)-[:LIKES]->(nosql),
45 (carol)-[:LIKES]->(nosql),
46 (dawn)-[:LIKES]->(nosql),
47 (elizabeth)-[:LIKES]->(nosql);

```

## 2 Grafo resultante

Abaixo, está o print do grafo completo gerado pelo script acima:



### 3 Script de consultas e print das respostas

Abaixo, estão os scripts das consultas com as respectivas respostas:

#### 3.1 Consulta 1: Quem são os funcionários da BigCo?

```
1 MATCH (p:Person)-[:EMPLOYEE]->(:Company {name: 'BigCo'})
2 RETURN p.name AS funcionario;
```

```
1 MATCH (p:Person)-[:EMPLOYEE]->(:Company {name: 'BigCo'})
2 RETURN p.name AS funcionario;
```

Table

RAW

funcionario

1 "Barbara"

2 "Anna"

3 "Carol"

Started streaming 3 records after 18 ms and completed after 19 ms.

### 3.2 Consulta 2: Quais são os livros que os funcionários da BigCo gostam?

```
1 MATCH (p:Person)-[:EMPLOYEE]->(c:Company {name: 'BigCo'})
2 MATCH (p)-[:LIKES]->(b:Book)
3 RETURN DISTINCT b.title AS livro;
```

The screenshot shows a query editor with the following Cypher query:

```
1 MATCH (p:Person)-[:EMPLOYEE]->(c:Company {name: 'BigCo'})
2 MATCH (p)-[:LIKES]->(b:Book)
3 RETURN DISTINCT b.title AS livro;
```

Below the query, there are tabs for 'Table' and 'RAW'. The 'Table' tab is selected, and the results are displayed as a table with one column named 'livro'. The results are:

livro
1 "NoSQL Distililled"
2 "Refactoring"

At the bottom, a status message reads: "Started streaming 2 records after 36 ms and completed after 37 ms."

### 3.3 Consulta 3: Quem são os autores dos livros que os funcionários da BigCo gostam?

```
1 MATCH (p:Person)-[:EMPLOYEE]->(c:Company {name: 'BigCo'})
2 MATCH (p)-[:LIKES]->(b:Book)-[:AUTHOR]->(a:Person)
3 RETURN DISTINCT a.name AS autor;
```

The screenshot shows a query editor with the following Cypher query:

```
1 MATCH (p:Person)-[:EMPLOYEE]->(c:Company {name: 'BigCo'})
2 MATCH (p)-[:LIKES]->(b:Book)-[:AUTHOR]->(a:Person)
3 RETURN DISTINCT a.name AS autor;
```

Below the query, there are tabs for 'Table' and 'RAW'. The 'Table' tab is selected, and the results are displayed as a table with one column named 'autor'. The results are:

autor
1 "Martin"
2 "Pramod"

At the bottom, a status message reads: "Started streaming 2 records after 50 ms and completed after 51 ms."

### 3.4 Consulta 4: Quem gosta de livro da categoria Databases?

```
1 MATCH (p:Person)-[:LIKES]->(b:Book)-[:CATEGORY]->(c:Category {name: 'Databases'})
2 RETURN DISTINCT p.name AS pessoa;
```

```
1 MATCH (p:Person)-[:LIKES]->(b:Book)-[:CATEGORY]->(c:Category {name: 'Databases'})
2 RETURN DISTINCT p.name AS pessoa;
```



Table RAW



pessoa

1 "Dawn"

2 "Barbara"

3 "Elizabeth"

4 "Carol"

Started streaming 4 records after 41 ms and completed after 42 ms.