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Área: Ciência da Computação

Disciplina: Estrutura de dados

LISTA 01

Google drive do código:

<https://drive.google.com/drive/folders/1mdE3mPYVjga8UuFEMpp5sXHNEbtfltFT?usp=sharing>

File Edit View Window Help Developer

neo4j\$

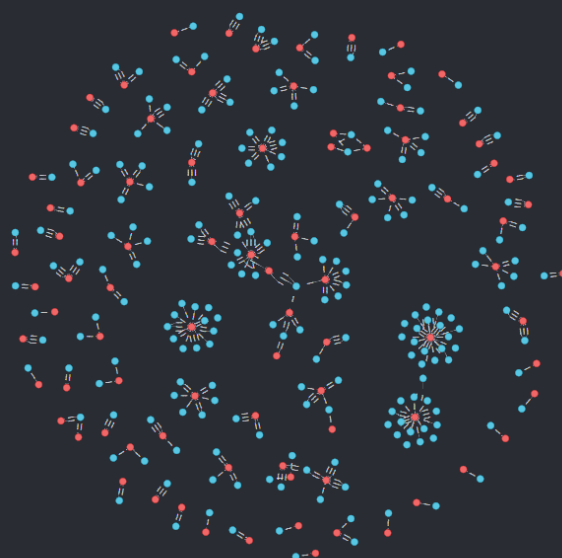
neo4j\$ // Ver grafos MATCH (n)-[r]→(m) RETURN n, r, m LIMIT 1000

Graph

Table

Text

Code



?

neo4j\$ //Quantidade de nós MATCH (n) RETURN COUNT(n) AS total_nodes;

Table

Text

Code

| total_nodes |
|-------------|
| 7498 |

MAX COLUMN WIDTH:

neo4j\$ // Quantidades de arestas MATCH ()-[r]→() RETURN COUNT(r) AS num_edges;

Table

Text

Code

| num_edges |
|-----------|
| 14345 |

MAX COLUMN WIDTH:

```
1 // Saída da Tabela com Métricas, Contagem de Arestas por Tipo de Mensagem
2 MATCH ()-[r:MESSAGED]->()
3 RETURN r.type AS message_type, COUNT(r) AS num_edges
```

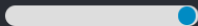
Table

| message_type | num_edges |
|------------------|-----------|
| "general" | 8258 |
| "viral" | 3776 |
| "misinformation" | 2311 |

Text

Code

MAX COLUMN WIDTH:



Local scripts

// Saída da Tabela com Métricas

1. Grau de centralidade geral

2. Força geral

3. Grau de centralidade viral (ass...

4. Força viral (somatório dos pes...

5. Grau de centralidade de desinf...

6. Força de desinformação (som...

os 5 usuários mais ativos.

os 5 usuários mais conectados.

os 5 usuários mais influentes.

os 5 usuários que mais espalha...

Quantidade de nós

Quantidades de arestas

Ver grafos

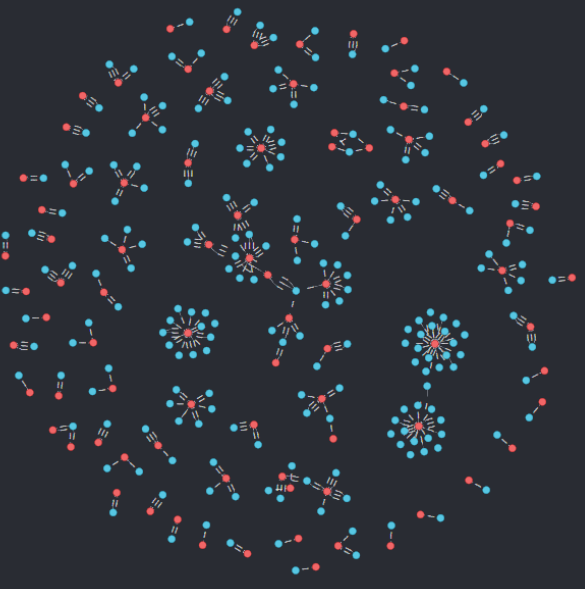
neo4j\$ // Ver grafos MATCH (n)-[r]→(m) RETURN n, r, m LIMIT 1000

Graph

Table

Text

Code



Search

Zoom In

Zoom Out

```
1 //os 5 usuários mais conectados.
2 MATCH (u:User)-[r:MESSAGED]→()
3 RETURN u.id AS user_id, COUNT(r) AS degree
4 ORDER BY degree DESC
5 LIMIT 5
```



Table



Text



Code

| user_id | degree |
|------------------------------------|--------|
| "b13078dee3bc11bc63ddf84ad4b53665" | 18 |
| "636d779b3346efeaf0afa0818981f356" | 17 |
| "13b1df470cce593f181509dd0e4bf687" | 16 |
| "14d1b9abcb06c66321063794cd46bcad" | 16 |
| "07b500eb69e22025c71d578212121404" | 16 |

MAX COLUMN WIDTH:



```
1 // os 5 usuários mais influentes.
2 MATCH (u:User)-[r:MESSAGED]→()
3 RETURN u.id AS user_id, COUNT(r) AS degree, SUM(r.weight) AS strength
4 ORDER BY degree DESC, strength DESC
5 LIMIT 5
```



Table



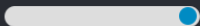
Text



Code

| user_id | degree | strength |
|------------------------------------|--------|----------|
| "b13078dee3bc11bc63ddf84ad4b53665" | 18 | 1438 |
| "636d779b3346efeaf0afa0818981f356" | 17 | 682 |
| "4b44334cc5e4c42d35213f08916bdcab" | 16 | 945 |
| "14dlb9abcb06c66321063794cd46bcad" | 16 | 16 |
| "13b1df470cce593f181509dd0e4bf687" | 16 | 16 |

MAX COLUMN WIDTH:



```
1 //os 5 usuários que mais espalham desinformação.
2 MATCH (u:User)-[r:MESSAGED]→()
3 WHERE r.type = 'misinformation'
4 RETURN u.id AS user_id, COUNT(r) AS misinformation_count
5 ORDER BY misinformation_count DESC
6 LIMIT 5
```

Table

Text

Code

| user_id | misinformation_count |
|------------------------------------|----------------------|
| "4b44334cc5e4c42d35213f08916bdcab" | 6 |
| "b13078dee3bc11bc63ddf84ad4b53665" | 6 |
| "5edf52cacaced85501ff2c59d316d696" | 5 |
| "636d779b3346efeaf0afa0818981f356" | 5 |
| "3b7dfe232868b409b22d6717df3e3851" | 4 |

MAX COLUMN WIDTH:


```
1 //os 5 usuários mais ativos.
2 MATCH (u:User)-[r:MESSAGED]→()
3 RETURN u.id AS user_id, COUNT(r) AS activity_count
4 ORDER BY activity_count DESC
5 LIMIT 5
```

Table

Text

Code

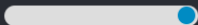
| user_id | activity_count |
|------------------------------------|----------------|
| "b13078dee3bc11bc63ddf84ad4b53665" | 18 |
| "636d779b3346efeaf0afa0818981f356" | 17 |
| "13b1df470cce593f181509dd0e4bf687" | 16 |
| "14d1b9abcb06c66321063794cd46bcad" | 16 |
| "07b500eb69e22025c71d578212121404" | 16 |

MAX COLUMN WIDTH:

```
1 //6. Força de desinformação (somatório dos pesos das mensagens de desinformação)
2 MATCH (u:User)-[r:MESSAGED {type: 'misinformation'}]-(g:Group)
3 RETURN u.id AS user_id, SUM(r.weight) AS strength_misinformation
4 ORDER BY strength_misinformation DESC
5 LIMIT 5
```

| user_id | strength_misinformation |
|------------------------------------|-------------------------|
| "c2b374a51f8bc0ff08ba7b1e64b32f88" | 303 |
| "b632aa10c44879310730bbfced256e20" | 285 |
| "f0e309ae6ce7e83b9a508b14549d69a3" | 173 |
| "a5595c3d215d032fe4dd43d236553b92" | 169 |
| "c369f0bfab115c81038b39f5e3bd790d" | 116 |

MAX COLUMN WIDTH:



```
1 //5. Grau de centralidade de desinformação (assumindo que o misinformation_score ≥ 0.7)
2 MATCH (u:User)-[:MESSAGED {type: 'misinformation'}]-(g:Group)
3 RETURN u.id AS user_id, COUNT(DISTINCT g) AS degree centrality misinformation
4 ORDER BY degree centrality misinformation DESC
5 LIMIT 5
```

| user_id | degree centrality misinformation |
|------------------------------------|----------------------------------|
| "4b44334cc5e4c42d35213f08916bdcab" | 6 |
| "b13078dee3bc11bc63ddf84ad4b53665" | 6 |
| "636d779b3346efeaf0afa0818981f356" | 5 |
| "5edf52cacaced85501ff2c59d316d696" | 5 |
| "e6022a7e3955297a7a4c3028f0f2a99d" | 4 |

MAX COLUMN WIDTH:

```
1 //4. Força viral (somatório dos pesos das mensagens virais)
2 MATCH (u:User)-[r:MESSAGED {type: 'viral'}]→(g:Group)
3 RETURN u.id AS user_id, SUM(r.weight) AS strength_viral
4 ORDER BY strength_viral DESC
5 LIMIT 5
```

Table

Text

Code

| user_id | strength_viral |
|------------------------------------|----------------|
| "d49cc6c9b024321630d3e6d75ab93705" | 386 |
| "3545bf472c131392f18ed78a07f7552e" | 304 |
| "ef496106907ece8b169c6219e5470b2c" | 283 |
| "4ea1b3ee637da811b7d2d0df32db21f9" | 268 |
| "ba228d9bb41cb909e669b83bcd01c9d2" | 244 |

MAX COLUMN WIDTH:

```
1 //3. Grau de centralidade viral (assumindo que mensagens virais têm viral_score > 0.5)
2 MATCH (u:User)-[:MESSAGED {type: 'viral'}]-(g:Group)
3 RETURN u.id AS user_id, COUNT(DISTINCT g) AS degree centrality_viral
4 ORDER BY degree centrality_viral DESC
5 LIMIT 5
```

Table

| user_id | degree centrality_viral |
|------------------------------------|-------------------------|
| "9a6740f834ae96bdad8ef0539f44a251" | 8 |
| "13b1df470cce593f181509dd0e4bf687" | 8 |
| "07b500eb69e22025c71d578212121404" | 8 |
| "14d1b9abcb06c66321063794cd46bcad" | 8 |
| "ea6413274d99e9be73bc5c095d3f10" | 7 |

Text

Code

MAX COLUMN WIDTH:



```
1 //2. Força geral
2 MATCH (u:User)-[r:MESSAGED {type: 'general'}]→(g:Group)
3 RETURN u.id AS user_id, SUM(r.weight) AS strength_general
4 ORDER BY strength_general DESC
5 LIMIT 5
```

| user_id | strength_general |
|------------------------------------|------------------|
| "ef496106907ece8b169c6219e5470b2c" | 4663 |
| "4ea1b3ee637da811b7d2d0df32db21f9" | 4412 |
| "3d4e77cea17b1812993b55543e81400e" | 3646 |
| "c5fff63b6151f93e1ce86d12f8acbee1" | 3325 |
| "cc00fce4892b0f78f86556a888376c16" | 3191 |

MAX COLUMN WIDTH:

```
1 //1. Grau de centralidade geral
2 MATCH (u:User)-[:MESSAGED {type: 'general'}]→(g:Group)
3 RETURN u.id AS user_id, COUNT(DISTINCT g) AS degree centrality
4 ORDER BY degree centrality DESC
5 LIMIT 5
```

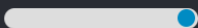
Table

Text

Code

| user_id | degree centrality |
|------------------------------------|-------------------|
| "14d1b9abcb06c66321063794cd46bcad" | 8 |
| "9a6740f834ae96bdad8ef0539f44a251" | 8 |
| "07b500eb69e22025c71d578212121404" | 8 |
| "13b1df470cce593f181509dd0e4bf687" | 8 |
| "ea6413274d99e9be73bcaf5c095d3f10" | 7 |

MAX COLUMN WIDTH:



```
1 // Graus e forças gerais número total de relacionamentos
2 MATCH (u:User)-[r:MESSAGED]→()
3 WHERE r.type = 'general'
4 RETURN u.id AS user_id, COUNT(r) AS degree_general, SUM(r.weight) AS strength_general
5 ORDER BY strength_general DESC
6 LIMIT 5
```



Table



Text



Code

| user_id | degree_general | strength_general |
|------------------------------------|----------------|------------------|
| "ef496106907ece8b169c6219e5470b2c" | 3 | 4663 |
| "4ea1b3ee637da811b7d2d0df32db21f9" | 3 | 4412 |
| "3d4e77cea17b1812993b55543e81400e" | 1 | 3646 |
| "c5fff63b6151f93e1ce86d12f8acbee1" | 2 | 3325 |
| "cc00fce4892b0f78f86556a888376c16" | 1 | 3191 |


```
1 // Graus e forças virais número total de relacionamentos
2 MATCH (u:User)-[r:MESSAGED]→()
3     WHERE r.type = 'viral'
4     RETURN u.id AS user_id, COUNT(r) AS degree_viral, SUM(r.weight) AS strength_viral
5     ORDER BY strength_viral DESC
6     LIMIT 5
```

Table

Text

Code

| user_id | degree_viral | strength_viral |
|------------------------------------|--------------|----------------|
| "d49cc6c9b024321630d3e6d75ab93705" | 2 | 386 |
| "3545bf472c131392f18ed78a07f7552e" | 3 | 304 |
| "ef496106907ece8b169c6219e5470b2c" | 3 | 283 |
| "4ea1b3ee637da811b7d2d0df32db21f9" | 3 | 268 |
| "ba228d9bb41cb909e669b83bcd01c9d2" | 1 | 244 |

MAX COLUMN WIDTH:

```
1 // Graus e forças de desinformação número total de relacionamentos
2 MATCH (u:User)-[r:MESSAGED]→()
3     WHERE r.type = 'misinformation'
4     RETURN u.id AS user_id, COUNT(r) AS degree_misinformation, SUM(r.weight) AS
strength_misinformation
5     ORDER BY strength_misinformation DESC
6     LIMIT 5
```

Table

Text

Code

| user_id | degree_misinformation | strength_misinformation |
|------------------------------------|-----------------------|-------------------------|
| "c2b374a51f8bc0ff08ba7b1e64b32f88" | 1 | 303 |
| "b632aa10c44879310730bbfced256e20" | 1 | 285 |
| "f0e309ae6ce7e83b9a508b14549d69a3" | 1 | 173 |
| "a5595c3d215d032fe4dd43d236553b92" | 1 | 169 |
| "c369f0bfab115c81038b39f5e3bd790d" | 1 | 116 |

MAX COLUMN WIDTH: