

Ten. Million. Questions. Let's celebrate [all we've done together](#).

Stack Overflow is a question and answer site for professional and enthusiast programmers. It's 100% free.

Take the 2-minute tour

Extract subgraph from Neo4j graph with Cypher

asked 4 months ago

viewed 84 times

active 4 months ago



0

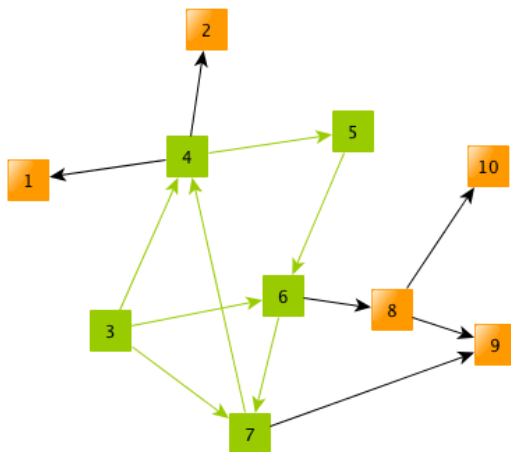


Suppose I have a collection of 5 nodes in Neo4j, such that each node in the collection is connected to at least one other node in the collection. I want to extract the subgraph formed by the collection of nodes and their interactions from Neo4j. Currently, I'm using a really primitive method that involves attempting to find a match from each gene in the system to every other gene:

```
MATCH p=(n)-[]->(m)
WHERE id(n) IN [3,4,5,6,7] AND id(m) IN [3,4,5,6,7]
RETURN relationships(p);
```

However, this query is both redundant and inefficient; it must go through every permutation of nodes in the collection (e.g. it will match node #3 and #4, and ALSO #4 and #3). Is there any more efficient way of getting the subgraph formed by these nodes using Cypher ONLY (no Java)?

Here's an example of what I mean by "subgraph":



I want Cypher to return all the relationships marked in green. Please note that the nodes in the collection don't have to be isolated from the rest of the graph; they can still have relationships with other nodes in the graph, but I want Cypher to return only the interactions in green.

graph neo4j cypher

Blog

[Why Stack Overflow is a Good Workplace for Women](#)

Looking for a job?

- System Engineer - Linux (m/f)
Helping GmbH
Berlin, Deutschland
mysql mongodb
- Sr. Development Engineer & Architect
Stage 3 Systems
Vancouver, BC, Canada / remote
node.js php
- Head Of Engineering (Platform & Cloud)
INRIX
Kirkland, WA
java c#
- web-based application software developer
Function Point Productiv...
Vancouver, BC, Canada
php mysql

167 People Chatting

PHP

1 hour ago - tereško



JavaScript<ball pit>

1 hour ago - Nick



Related

- 3 Cypher query to list all disconnected graphs Neo4j graph DB?
- 0 find the group in Neo4j graph db
- 1 Neo4j - Cypher query for finding neighbourhood graph
- 1 Cypher query to find paths through directed weighted graph to populate ordered list
- 0 Neo4j visualizing particular relations

share improve this question

edited Apr 10 at 23:20

asked Apr 10 at 23:02



Shrey Gupta

2,444 ● 1 ● 21 ● 53

add a comment

2 Answers

active

oldest

votes



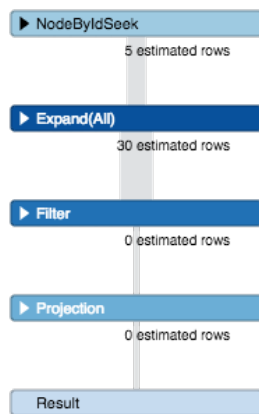
2



I want to extend on Richards answer, you can also restrict it to nodes whose id's are in separate groups.

```
MATCH (n) WHERE id(n) IN [3,4,5,6,7]
MATCH p=(n)-->(m)
WHERE id(n) < id(m) AND id(m) IN [3,4,5,6,7]
RETURN relationships(p);
```

results in



share improve this answer

answered Apr 10 at 23:34



Michael Hunger

25.2k ● 2 ● 21 ● 41

Nice answer. Do not the relationship between 7 and 4 be lost? I mean in the table result and not in the visualization of browser. – [Richard Günzl](#) Apr 10 at 23:45

Hey Michael, is this currently the most efficient way to get the subgraph from Neo4j? Or is there another way to do this without effectively trying every node combination? I'm just concerned that this may not function well with something on the order of ~50-100 nodes. – [Shrey Gupta](#) Apr 14 at 16:42

add a comment

5 Neo4j time dependent graph model

1 Construct NEO4J Cypher Graph Query to show intermediate nodes in path

0 Neo4j - slow cypher query - big graph with hierarchies

1 Find nodes and their connected subgraphs with Neo4j + Cypher

1 Finding Nodes with lots of relations pointing to it in neo4j using cypher

Hot Network Questions

F My 4.5 yrs old son has no dominant hand

WE Could an autotrophic civilisation develop, or will evolving life forms always eat each other?

JF Was フリスマスケーキ used metaphorically about women?

Why are carpenter's pencils flat?

What can I do when I accidentally gave out an overpowered item?

Does touching the tent outer wall from the inside make it leak?

Compact way of writing $(a + b == c \text{ or } a + c == b \text{ or } b + c == a)$

An "outside the box" sequence

Two definitions of Green's function

¿Puede "hopefully" traducirse como "ojalá"?

ELL Is Let us = Let's?

Using siunitx, \ohm results in an italic Omega

Select polygons one by one and export them using arcpy

Is it 'Batman' or 'Batmans'?

When does the designer pay for a reprint

Lunch with the CEO

How to show pagination "go to page" text box?

Does Lebanon ban the diary of Anne Frank?

Weird performance increase in simple benchmark

Aerofoil that gives reasonably good lift for both flow directions: forward and backward

[more hot questions](#)



0



This modification of your query helps with the redundancy of arrays.

```
WITH [3,4,5,6,7] AS arr
MATCH p=(n)-[]->(m)
WHERE id(n) IN arr AND id(m) IN arr
RETURN relationships(p);
```

You can use labels of nodes or types of relationships for differentiation (eventual subgraphs) and efficient querying but it depends on your case.

share improve this answer

answered Apr 10 at 23:18



Richard Günzl



Unless I'm mistaken, this query just improves the syntax a bit. Does it help the performance in any way? –

[Shrey Gupta](#) Apr 10 at 23:21

@ShreyGupta: You don't mistaken, it just improve the syntax. It can be helpful just when the query is saved in script and the query is more complicated. Then you can edit script just on one place. – [Richard Günzl](#) Apr 10 at 23:36


[add a comment](#)


Your Answer


B *I* [link](#) [quote](#) [code](#) [image](#) [list](#) [table](#) [undo](#) [redo](#)

Sign up or [log in](#)

Post as a guest

 Sign up using Google

 Sign up using Facebook

 Sign up using Stack Exchange

Name

Email

required, but never shown

Post Your Answer

By posting your answer, you agree to the [privacy policy](#) and [terms of service](#).

Not the answer you're looking for? Browse other questions tagged [graph](#) [neo4j](#) [cypher](#) or [ask your own question](#).

 [question feed](#)

[tour](#) [help](#) [blog](#) [chat](#) [data](#) [legal](#) [privacy policy](#) [work here](#) [advertising info](#) [mobile](#) [contact us](#) [feedback](#)

TECHNOLOGY

[Stack Overflow](#)
[Server Fault](#)
[Super User](#)
[Web Applications](#)
[Ask Ubuntu](#)
[Webmasters](#)
[Game Development](#)
[TeX - LaTeX](#)

[Programmers](#)
[Unix & Linux](#)

[Ask Different \(Apple\)](#)

[WordPress Development](#)

[Geographic Information Systems](#)

[Electrical Engineering](#)

[Android Enthusiasts](#)

[Information Security](#)

[Database Administrators](#)
[Drupal Answers](#)

[SharePoint](#)

[User Experience](#)

[Mathematica](#)

[Salesforce](#)

[ExpressionEngine® Answers](#)

[more \(13\)](#)

LIFE / ARTS

[Photography](#)
[Science Fiction & Fantasy](#)

[Graphic Design](#)

[Movies & TV](#)

[Seasoned Advice \(cooking\)](#)

[Home Improvement](#)

[Personal Finance & Money](#)

[Academia](#)

[more \(9\)](#)

CULTURE / RECREATION

[English Language & Usage](#)

[Skeptics](#)

[Mi Yodeya \(Judaism\)](#)

[Travel](#)

[Christianity](#)

[Arqade \(gaming\)](#)

[Bicycles](#)

[Role-playing Games](#)

[more \(21\)](#)

SCIENCE

[Mathematics](#)

[Cross Validated \(stats\)](#)

[Theoretical Computer Science](#)

[Physics](#)

[MathOverflow](#)

[Chemistry](#)

[Biology](#)

[more \(5\)](#)

OTHER

[Stack Apps](#)

[Meta Stack Exchange](#)

[Area 51](#)

[Stack Overflow Careers](#)

