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Neo4j query optimization



▲ at Neo4j Graph Academy (<http://neo4j.com/graphacademy/online-course/>) I read at "(L2) -- (Aggregation)" section:

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▼ Oftentimes you're interested in the top-n results, which result from a count aggregation. This is achieved by counting first and the ordering the results in a DESCending manner and then LIMITing the results by the top n. If we would be interested in the top ten actors, who acted in the most movies, the query would look like this.



```
MATCH (a:Person)-[:ACTED_IN]->(m)
RETURN a.name, count(m)
ORDER BY count(m) DESC
LIMIT 10;
```

However, I'm wondering if it is clever enough to not calculate multiple times the count(m) there, that is if a syntax similar to the following is better:

```
MATCH (a:Person)-[:ACTED_IN]->(m)
RETURN a.name, count(m) AS c
ORDER BY c DESC
LIMIT 10;
```

neo4j

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asked Apr 7 at 12:00



George Birbilis
528 ● 2 ● 12

1 Answer

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▲ The answer is that the query plans are exactly identical, and one is not better than the other.

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▼ Using the PROFILE keyword before the query, you can ask neo4j how it would execute each query. So don't take my word for it, profile both queries and see if the plans are any different. If they're not, then the execution of both will be the same.



Here's what the query profile looks like:

asked 4 months ago

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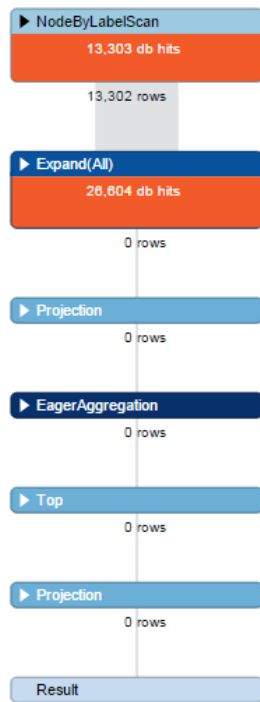
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I think the `count()` is happening in `EagerAggregation`, and it's happening prior to the `top` operation irrespective of how you express that count.

Cypher query optimization is making progress these days. With version 2.2, there's a new cost based planner in there, PROFILE. I see they use the "AS" pattern for similar query with "count", but optimizer is working well, then there may be any difference between those two queries. See, if two queries are **semantically** equivalent, then the optimizer's job is always to re-write your query into the fastest-executing version of itself that's semantically equivalent. As far as I'm concerned, as long as the PROFILE is the same it's a matter of personal preference. Using AS clauses is nice to rename things though, since by default the column would be named `count(x)` which is a lousy name. So I like the AS convention too.

This provides some leeway, ... you to write less than perfect cypher but still get good results. In general, I wouldn't overcomplicate your queries to speed them up until you have a real performance problem ("premature optimization is the root of all evil"). If you want to know whether a different formulation of a query would even help, use PROFILE.

Your Answer

answered Apr 7 at 12:34

FrobberOfBits

8,397 • 7 • 29

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