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Howto handle dates in neo4j

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I'm an historian of medieval history and i'm trying to code networks between kings, dukes, popes etc. over a period of time of about 50 years (From 1220 to 1270) in medieval Germany. As I'm not a specialist for graph-databases I'm looking for a posibility to handle dates and date-ranges. Are there any posibilities to handle over a date-range to an edge so that the edges, which represents a relationship, disappers after e.g. 3 years ?

Are there any posibility to ask for relationships who have their date-tag in a date-range ?

Would be nice to get some advice, greetings,

Andreas Kuczera

date   neo4j   date-range

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asked Mar 30 at 10:23
▦ Andreas Kuczera
　41 ● 3

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2 Answers

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The common way to deal with dates in Neo4j is storing them either as a string representation or as millis since epoch (aka msec passed since Jan 01 1970).

The first approach makes the graph more easily readable the latter allows you to do math e.g. calculate deltas.

In your case I'd store two properties called `validFrom` and `validTo` on the relationships. You queries need to make sure you're looking for the correct time interval.

E.g. to find the king(s) in charge of France from Jan 01 1220 to Dec 31st 1221 you do:

```
MATCH (c:Country{name:'France'})-[r:HAS_KING]->(king)
WHERE r.validFrom >= -23667123600000 and r.validTo <=-23604051600000
RETURN king, r.validFrom, r.validTo
```

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answered Mar 30 at 10:51
🧑 Stefan Armbruster
　23k ● 2 ● 28 ● 51

> Thanks for the quick answer. For my project it would be important to get good readability and the posibility of calcutaing deltas. At the moment I'm using iso-data like "1220-02-05". Does neo4j have a function to translate iso-Data to the millisecond-data ? – Andreas Kuczera Mar 30 at 11:53
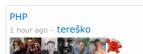
> Unfortunately such a conversion function does not yet exist. So you need to do it on client side. – Stefan Armbruster Mar 30 at 13:21

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You can also store the date in their iso-value representation in the following format: YYYY/MMDD

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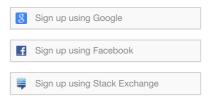
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You can also store the dates in their number representation in the following format: `YYYYMMDD`

In your case `12200101` would be Jan 1st 1221 and `12701231` would be Dec 31st 1270.

It's a useful and readable format and you can perform range searches like:

```
MATCH (h:HistoricEvent)
WHERE h.date >= 12200101 AND h.date < 12701231
RETURN h
```

It would also let you order by dates, if you need to.

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answered Mar 30 at 11:46

Amin Abu-Taleb
1,386 ● 2 ● 8 ● 29

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1   I'll take your proposal in consideration. Your example is human-readable and can be used for delta-calculation. Thanks. – Andreas Kuczera Mar 30 at 12:02 ✎

Hello, I'm trying your date-type but neo4j comes with an error: Don't know how to compare that. Left: "12230500" (String); Right: 12290225 (Long) -- Any Idea ? – Andreas Kuczera Mar 31 at 15:15

Yes @AndreasKuczera, your first object should be a Long as well. You should store longs and use longs as parameters for the queries – Amin Abu-Taleb Mar 31 at 15:21

I'm just storing all values the same way: `MATCH (from {id:line.id1}), (to {id:line.id2})` `create from-[:NEGATIV{reltype:line.rel1, datum:line.date,` `datenorm:line.datenorm, vorgID:line.vorgID}]->to;` Don't know why neo4j stores one number as long and the other as string. How can i force storing as long ? – Andreas Kuczera Mar 31 at 16:08

The number is stored with datenorm. – Andreas Kuczera Mar 31 at 16:09

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