Neo4J in CTools. How?

Yes, with kettle.

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Agenda

❏ Introduction
❏ Loading shapefile data on neo4j
❏ Querying neo4j in kettle
❏ Integrating with CTools
❏ What next?

Introduction

A while ago, while playing with neo4j browser, I thought "what would it do if I were to try and plot a world map?"

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It turned out to be a terrible idea. The end result is unrecognizable as a map of anything.

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So, we thought "why not CTools, with a fancy D3 visualisation on top of a neo4j graph?"

Step 1: finding the data

That's easy: https://www.naturalearthdata.com/

Step 2: loading the data

That's harder. Kettle is the answer.

Fortunately, Kettle has a Shapefile reader step.

Step 2: loading the data

Unfortunately, it has a few bugs*:

https://jira.pentaho.com/browse/PDI-18330
https://jira.pentaho.com/browse/PDI-18335
https://jira.pentaho.com/browse/PDI-15625
https://jira.pentaho.com/browse/PDI-18478
https://jira.pentaho.com/browse/PDI-18479

* they've been fixed in the meantime; shout out to Matt Casters and Jens Bleuel for their support. You'll need to download kettle remix to get it working.

Step 2: loading the data

We went through each shape, and each part of each shape. We calculated the area and the coordinates of the centroid of the largest part of each country.

These are our nodes.

Step 2: loading the data

We also went through another shapefile with all land borders and identified the countries on the each side.

These are our edges.

Step 2: loading the data

Using Matt Caster's neo4j plugins we loaded both nodes and edges on to a neo4j graph.

* you'll need the most recent version of the neo4j plugins (https://github.com/knowbi/knowbi-pentaho-pdi-neo4j-output/releases/tag/4.1.2)

Step 3: querying the data

Parameterized Cypher queries in kettle.

Step 4: displaying the data

❏ CTools dashboard with require.js support
❏ D3.js to render the map
❏ SVG glyph font for pretty icons
❏ The usual ~~techniques~~ magic to get all components rendering properly, ~~some~~ lots of CSS tweaking, et voila.

What next?

- ❏ Navigation on London underground
- ❏ Flight connections between remote airports
- ❏ Map your IT infrastructure
- ❏ Integrate graph and relational data in same dashboard

Questions?

Public Version:

https://bit.ly/33gbu74

Bart Maertens

it's hard to make CTools dashboards not look like shit, but they do work somewhat

Thank you!