Facilitator: **Brendon Page**
Date of Workshop: **12, 13 November**
Location: **Riversands Incubation Hub, Fourways, Johannesburg**
Cost: **R3100.00 incl VAT**
Bookings can be made at: **www.quicket.co.za/events/1115-graph-databases-workshop**

Day 1 of Workshop

(P) = Presentation
(G) = Guided Exercise
(E) = Self Directed Exercise

Day 1

- Welcome
  - Rules
  - Format
  - Logistics
- What are NoSql databases and how do they compare to relational databases? (P)
  - Scalability
  - High level overview of CAP Theorem
- Where do graph databases fit? (P)
  - What is a graph
  - Index free adjacency
- Overview of known use cases for a graph database (Social, routing, fraud detection, recommendations ... connectedness) (P)
- Why Neo4j over other options? (P)
- Neo4j package options (P)
- Neo4j license options (P)
- Get Neo4j running on everyone's laptops (G)
  - Through a bat file
  - As a windows service
- Introduction to the web UI (G)
  - Browser
  - Web Admin
- SQL to Cypher (P + G)
  - Insert simple data into the graph
  - Query simple data from the graph
  - Query paths from the graph
  - Query dynamic length paths from the graph
- Labels (P + G)
  - Create labels
  - Query using labels
  - Create indexes
  - Profile query with and without indexed labels
- Data Modelling (P + E)
  - Property graphs
  - Relational vs Graph modelling
  - Common modelling pitfalls

    - Model, Create and Query a social graph, exercise
    - Add extra data to social graph and do recommendation queries, exercise
- Rest API (P + G + E)
    - Navigating
    - Executing Cypher & Interpreting results
    - Transactions
    - Add extra data to social graph and query it, all using Cypher, over Rest API using curl exercise
- Backup social network graph
- Retro

Day 2 of Workshop

(P) = Presentation
(G) = Guided Exercise
(E) = Self Directed Exercise

Day 2

- Welcome
    - Rules
    - Format
    - Logistics
- Neo4j C# clients (P + E)
    - Overview up Neo4N, Neo4jClient and Cypher.NET
    - Write a console app that queries the social graph, exercise
- Every day Cypher (P + E)
    - Cypher ref card intro
    - Optional matches, exercise (graph to be decided)
    - Deleting and updating, exercise (graph to be decided)
    - Paging (coping with black holes), exercise (graph to be decided)
- Advanced Cypher(P + E)
    - Chaining using 'with' operator, exercise (graph to be decided)
    - Returning paths in one result row (collecting on patterns), exercise (graph to be decided)
    - Shortest path & weighted shortest path, exercise (graph to be decided)
- Bulk data import (P)
    - Importing CSV files
    - Import Tool
- Retro