

A Programmatic Introduction to Neo4j

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ABSTRACT

In this workshop we provide a hands-on introduction to the popular open source graph database Neo4j [1] through fixing a series of increasingly sophisticated, but broken, test cases each of which highlights an important graph modeling or API affordance.

Categories and Subject Descriptors

E.1 [Data Structures]: Graph and networks. E.2 [Data Storage Representations]: Object representation. D2.5 [Testing and Debugging]: Testing tools.

General Terms

Algorithms, Experimentation.

Keywords

NOSQL, Graph Databases, Neo4j, Java, JVM.

1. INTRODUCTION

Neo4j is a JVM-based NOSQL database. As the leading graph database, its model is intuitive and expressive, mapping closely to your whiteboard domain model. For highly connected data, Neo4j is thousands of times faster than relational databases, making it ideal for managing complex data across many domains, from finance to social, telecoms to geospatial.

2. WORKSHOP AGENDA

This workshop covers the core functionality of the Neo4j graph database. With a mixture of theory and entertaining hands-on coding sessions, attendees will learn how to manage highly connected real-world data [2] and build systems with Neo4j. Specifically we will cover:

- NOSQL and Graph Database overview
- Neo4j Fundamentals and Architecture
- The Neo4j Core API
- Indexing
- Neo4j Traverser API
- Declarative querying with Cypher
- Deployment and operational considerations for large systems

3. METHODOLOGY

Each session comprises a set of practical exercises designed to introduce and reinforce an aspect of the Neo4j stack. The practical parts of the tutorial consist of Koan-style lessons where a specific aspect of the Neo4j stack is presented as a set of failing unit tests that participants will work to fix.

The exercises gradually become more challenging until the attendees are capable of implementing sophisticated graph operations against Neo4j.

Participants will benefit from basic fluency with a modern IDE like Eclipse or IntelliJ to make the most rapid progress, though command-line programmers are encouraged to attend too.

4. REFERENCES

- [1] <http://neo4j.org>
- [2] <http://www.bbc.co.uk/doctorwho/dw>