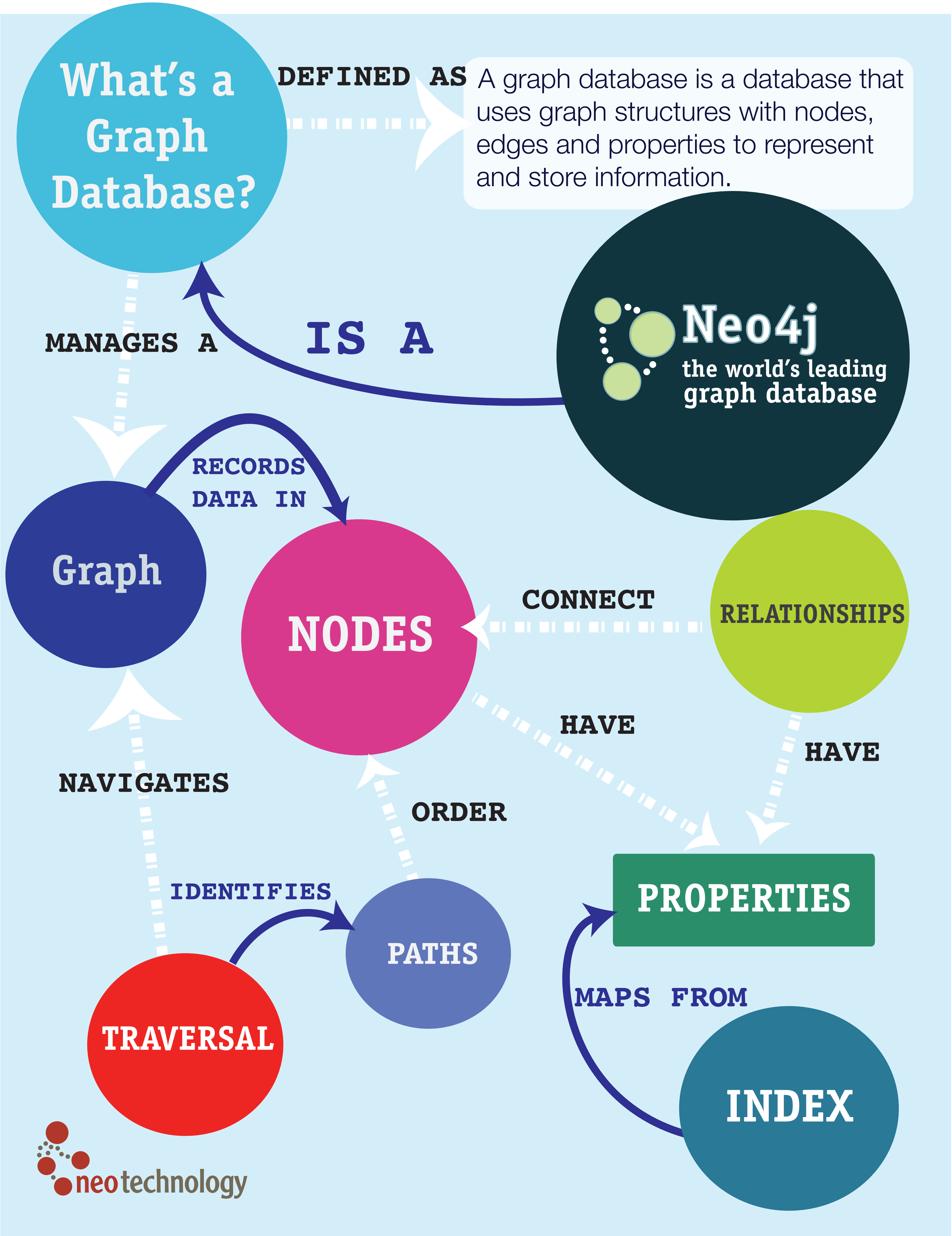
What's a Graph Database?



DEFINED AS

A graph database is a database that uses graph structures with nodes, edges and properties to represent and store information.

IS A

Neo4j
the world's leading graph database

MANAGES A

Graph

RECORDS DATA IN

NODES

CONNECT

RELATIONSHIPS

HAVE

HAVE

PROPERTIES

NAVIGATES

ORDER

IDENTIFIES

PATHS

TRAVERSAL

MAPS FROM

INDEX

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Graph Database

A **Graph Database** uses graph structures with **nodes**, edges, and **properties** to represent and store data.
A traditional relational database may tell you the average age of everyone at this conference, but a graph database will tell you who is most likely to buy you a beer.

Graph

A **Graph** records data in **Nodes** that in turn, have **Properties.** The simplest possible graph is a single **Node**, with one designated property. A **Node** could begin with a single **Property** and grow to a few million, although this structure would get a little awkward. At some point it makes sense to distribute the data into multiple **Nodes**, organized with explicit **Relationships.**

Nodes

Along with **Relationships**, **Nodes** are the core building blocks of a **Graph**. A **Node** has three major groups of operations: operations that deal with **Relationships**, operations that deal with **Properties** and operations that create traversers.

Relationships

A **Relationship** links between two **Nodes** in the **Graph**.
A relationship has a start **Node**, an end **Node** and a type. You can attach **Properties** to **Relationships** as well as **Nodes**. The fact that the **Relationship** API gives meaning to start and end **Nodes** implicitly means that all **Relationships** have a direction.

Properties

Properties are used to define your data and your **Node**. Both **Nodes** and **Relationships** can hold **Properties** in a key/value fashion.

Traversal

Traversing a **Graph** means visiting its **Nodes**, following relationships according to some rules. In most cases only a subgraph is visited, as you already know where in the **Graph** the interesting **Nodes** and **Relationships** are found.
A **Traversal** is how you query a **Graph**, and find answers to questions like “if this power supply goes down, what web services are affected?”

Indexes

Often, you want to find a specific **Node** or **Relationship** based on a **Property** it has. This special case of **Traversal** is optimized into an **Index** lookup.

Neo4j

the world’s leading
graph database

Neo4j, a high performance, scalable graph database that is transactional, durable, and can scale to handle complex, ever-changing data.
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