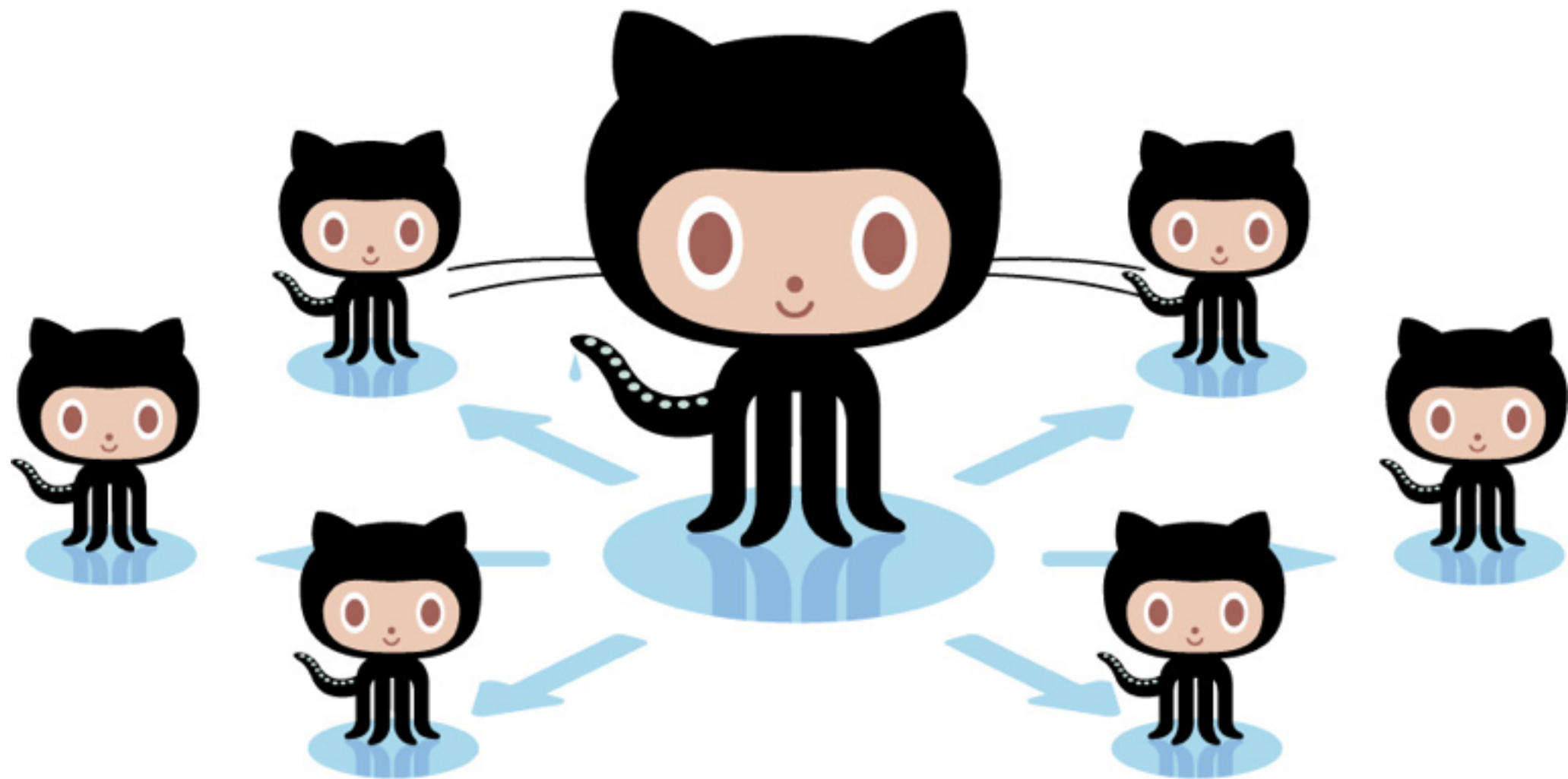


# Graph Databases with PHP and Neo4j

AmsterdamPHP



# About: Michelle Sanver

# About: Michelle Sanver



Co-President

# About: Michelle Sanver



**(Michelle)-[:LOVES]->(Neo4j)**

 **@michellesanver**

# About: Michelle Sanver



Zürich, Switzerland

# Why graphs?

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# Why graphs?

Graph theory has been studied since Leonard Euler's  
Bridges 1736

# Why graphs?

Graphs are really just connected data... They are everywhere

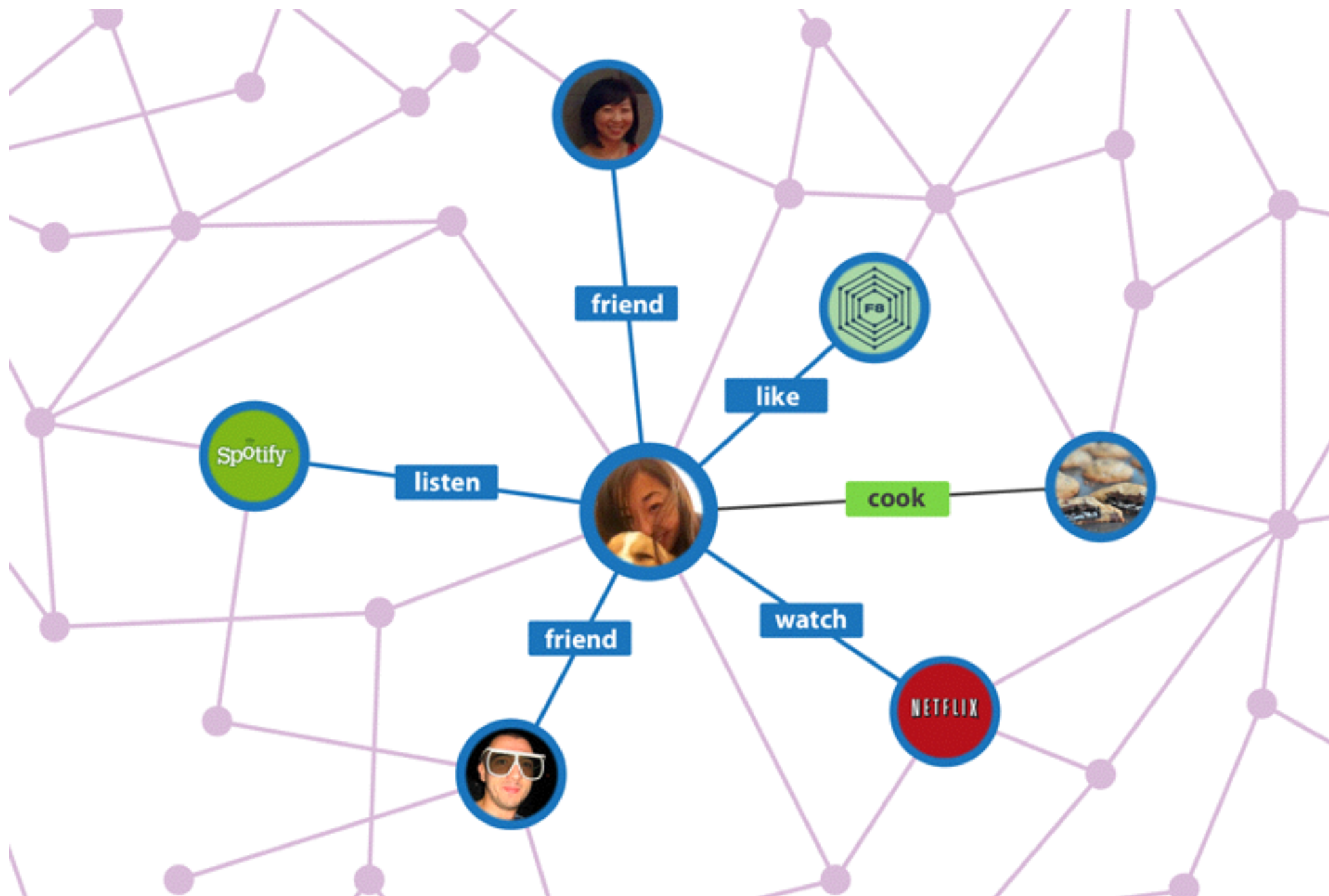


# Why graphs?

It's modern.

# Why graphs?

Facebook open graph

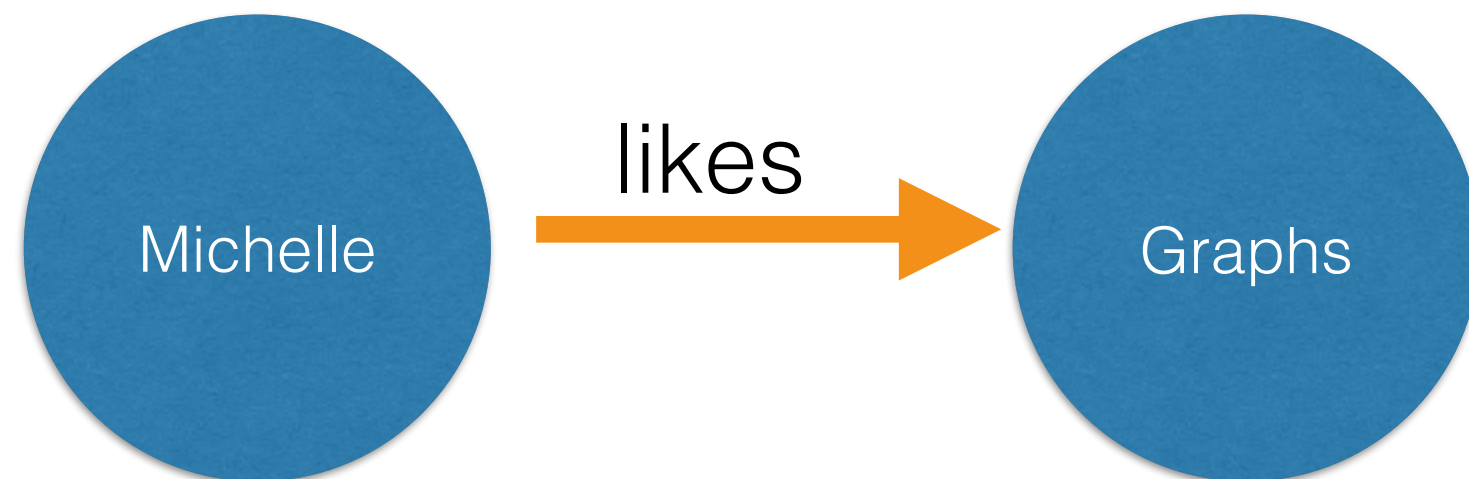


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# Why graphs?

A graph is an easy way to visualise connected data.



# Graphs vs. Relational databases

## **Relational question:**

Average age of everyone in this list?

## **Graph question:**

Who is most likely to hug you here?

# Graphs vs. Relational databases

**Relational databases have tables**



Recipes

# Graphs vs. Relational databases

**Tables have relationships**



Recipes



Groups

# Graphs vs. Relational databases

**Which causes a join table...**



Recipes



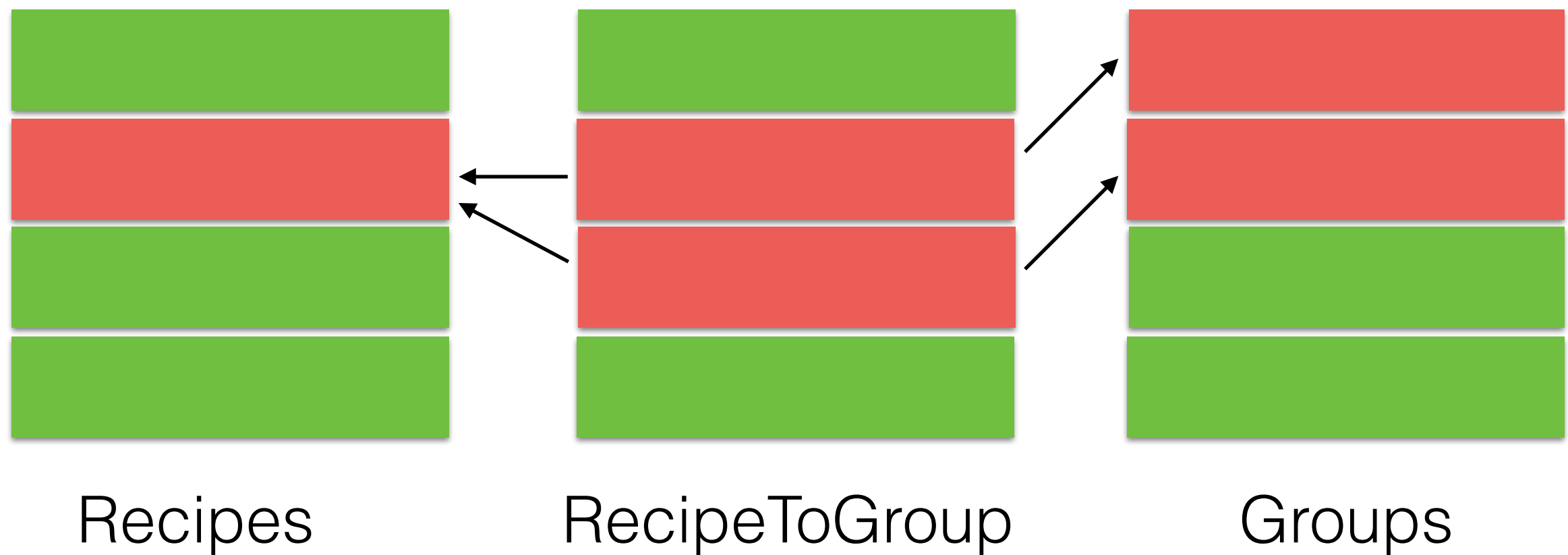
RecipeToGroup



Groups

# Graphs vs. Relational databases

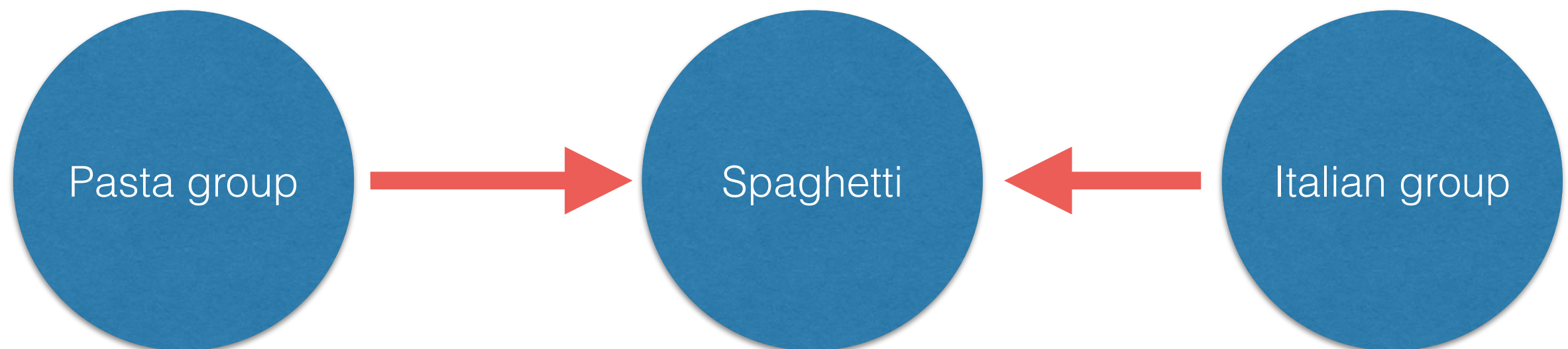
**You query via the table**



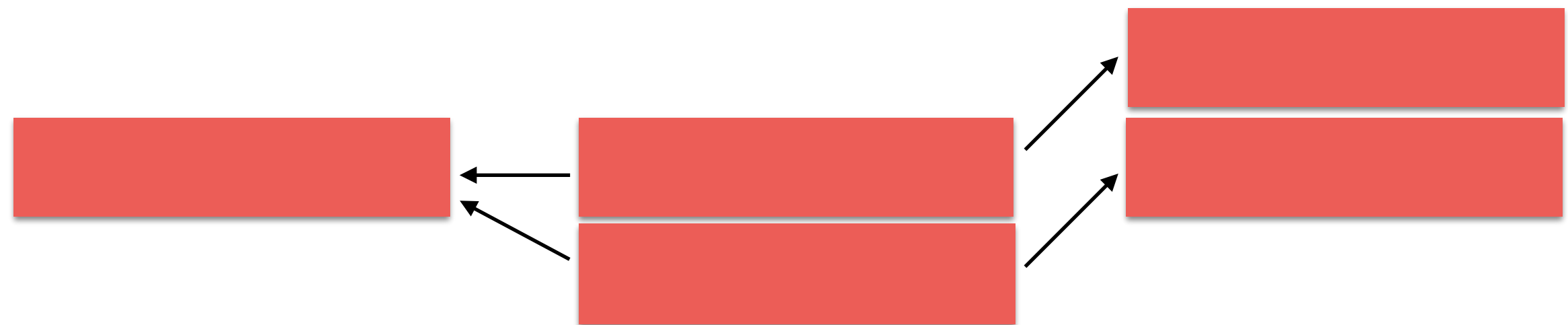


# Graphs vs. Relational databases

Imagine having **\*actual\*** relations



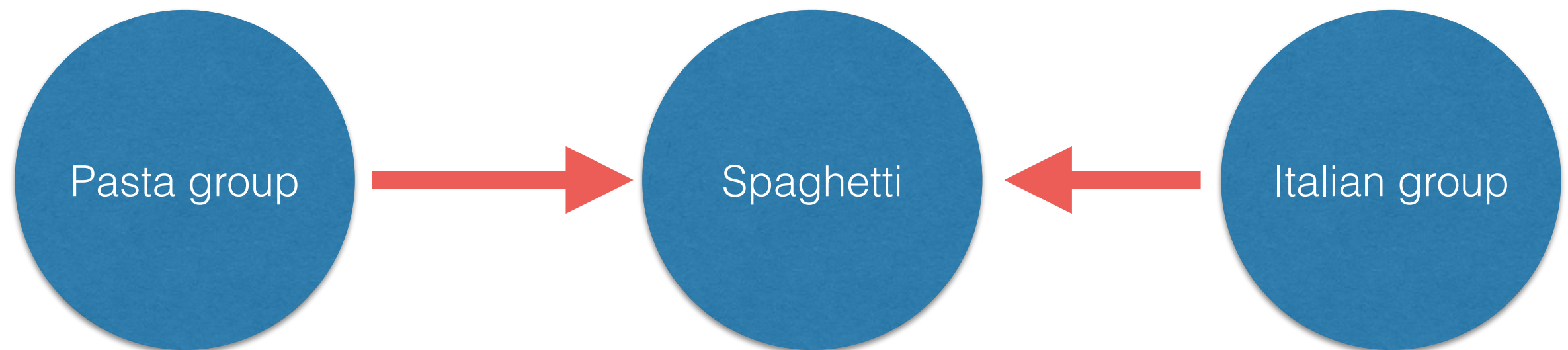
# Graphs vs. Relational databases



Recipes

RecipeToGroup

Groups



# Graphs vs. Relational databases

**Would you still pick relational?**

# Graphs and Neo4j

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# Neo4j

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**neo4j.org**

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 **@michellesanver**

**neotechnology.com**

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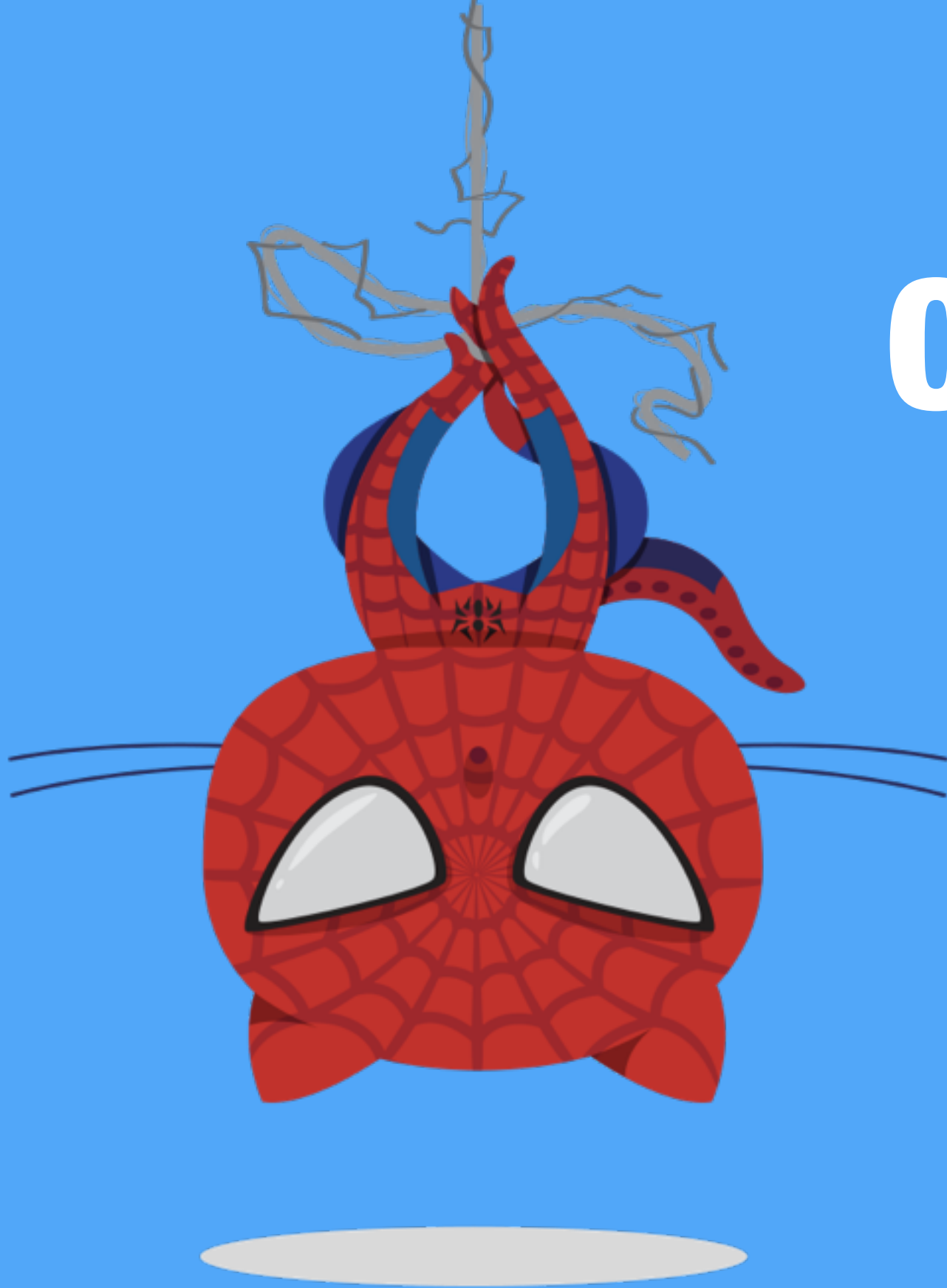
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# Java Based

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# Open Source!

[github.com/neo4j](https://github.com/neo4j)

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# Meetups everywhere

[neo4j.meetup.com](http://neo4j.meetup.com)

## Neo4j Meetup Groups



Groups  
**83**

Members  
**15,099**

Interested  
**1,863**

Cities  
**73**

Countries  
**23**

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# Graphs and Neo4j

Graphs have...

# Graphs and Neo4j

Nodes



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# Graphs and Neo4j

## Node Properties

As many as you want

Type:  
Person

Nick:  
geekie

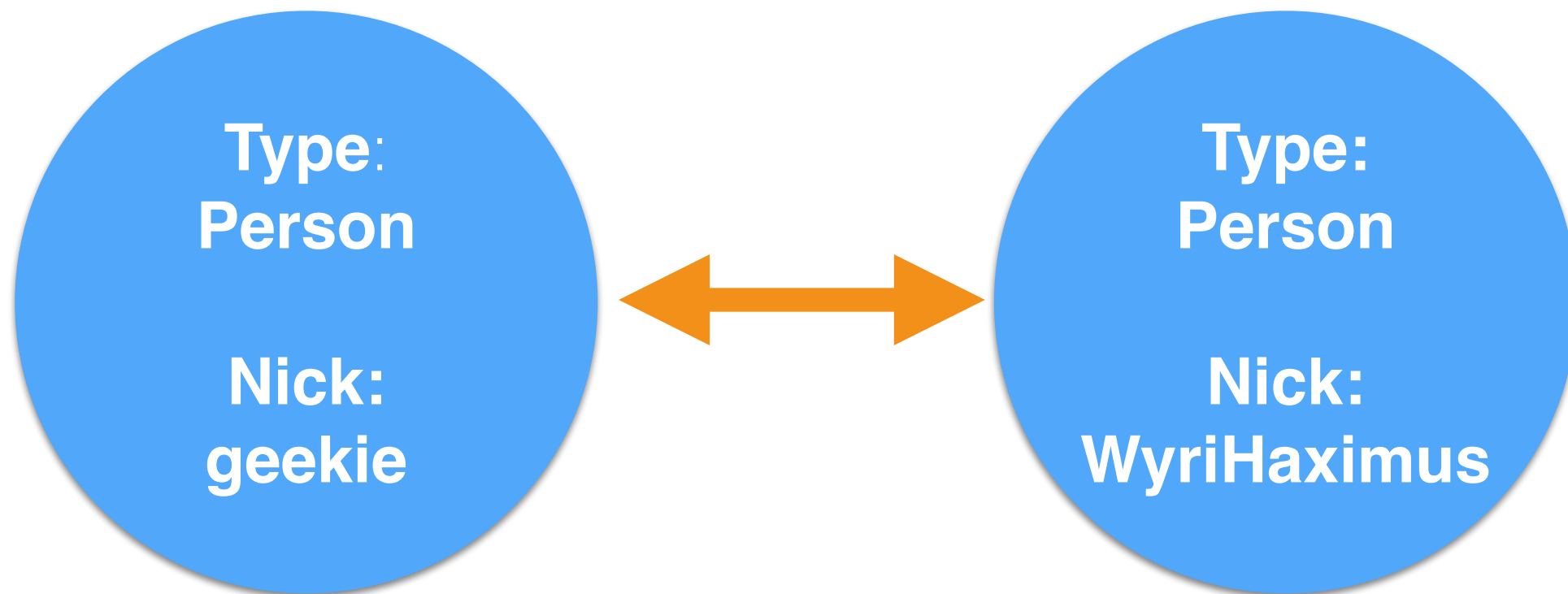
Type:  
Person

Nick:  
WyriHaximus

# Graphs and Neo4j

## Node Relationships

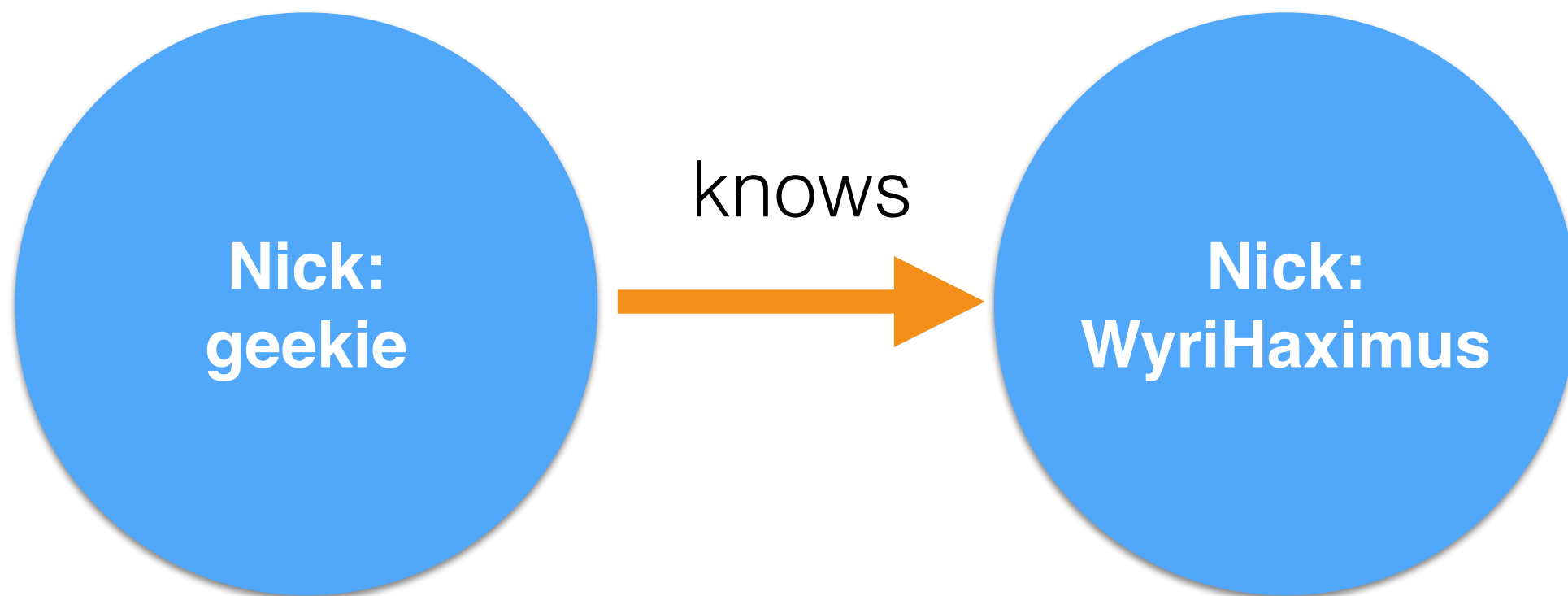
As many as you want



# Graphs and Neo4j

## Relationship properties

As many as you want



# Graphs and Neo4j

Labels



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# Graphs and Neo4j

Indexes for easy lookup

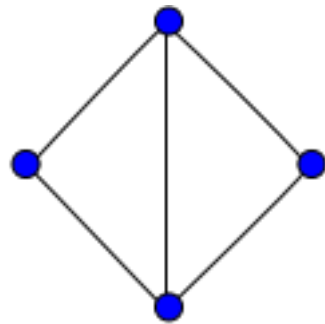


# Graphs and Neo4j

Common named graphs

# Graphs and Neo4j

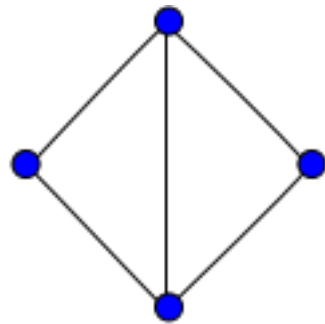
## Common named graphs



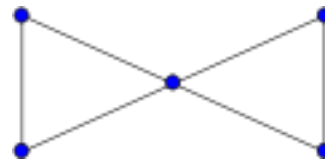
Diamond

# Graphs and Neo4j

## Common named graphs



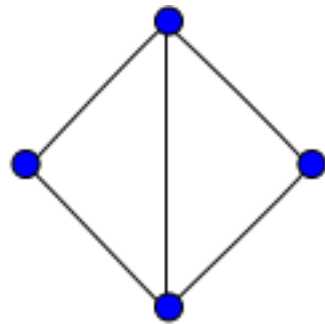
Diamond



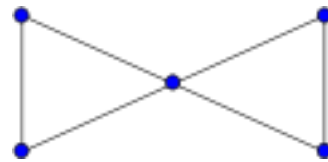
Butterfly

# Graphs and Neo4j

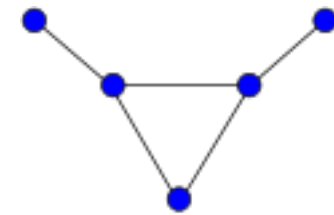
## Common named graphs



Diamond



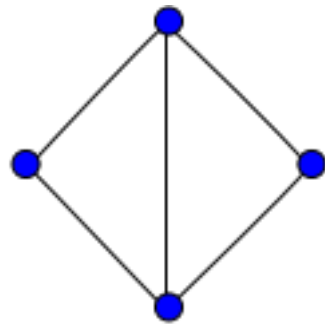
Butterfly



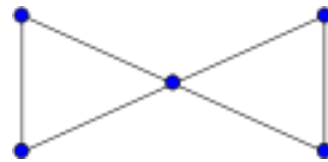
Bull

# Graphs and Neo4j

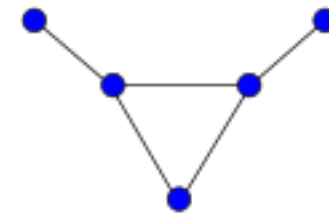
## Common named graphs



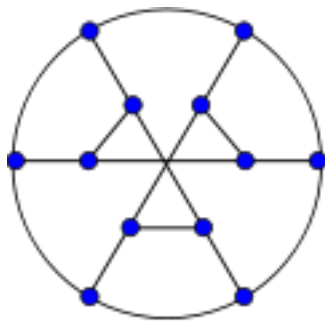
Diamond



Butterfly



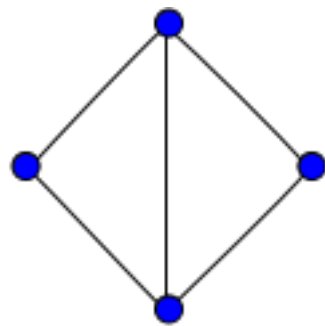
Bull



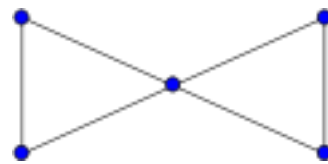
Franklin

# Graphs and Neo4j

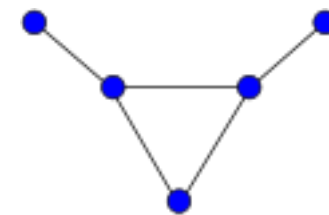
## Common named graphs



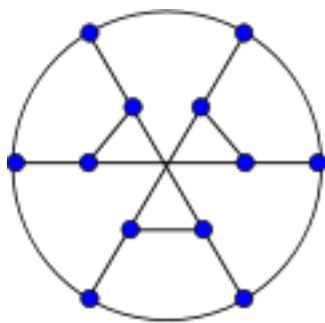
Diamond



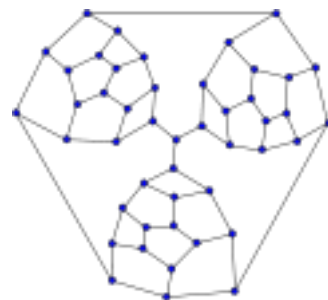
Butterfly



Bull



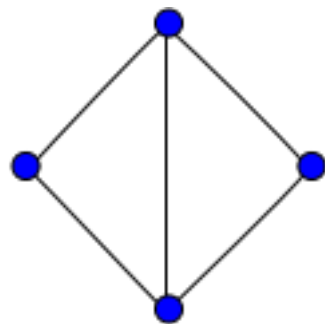
Franklin



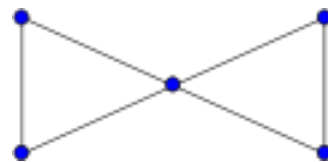
Tutte

# Graphs and Neo4j

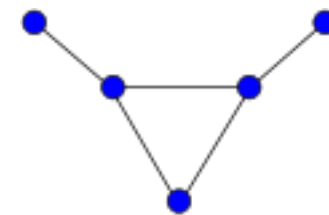
## Common named graphs



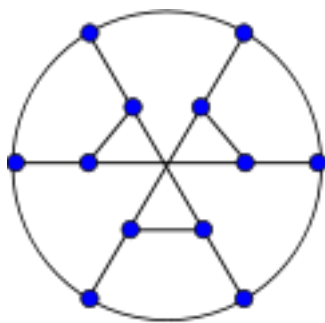
Diamond



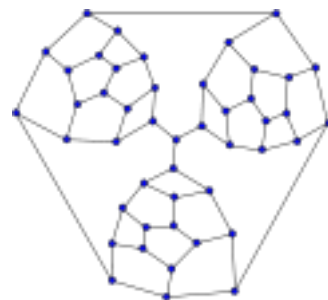
Butterfly



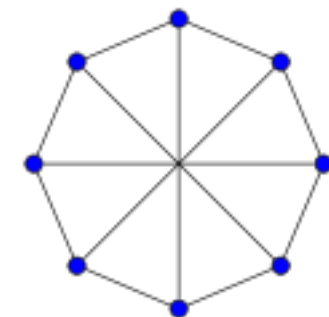
Bull



Franklin



Tutte

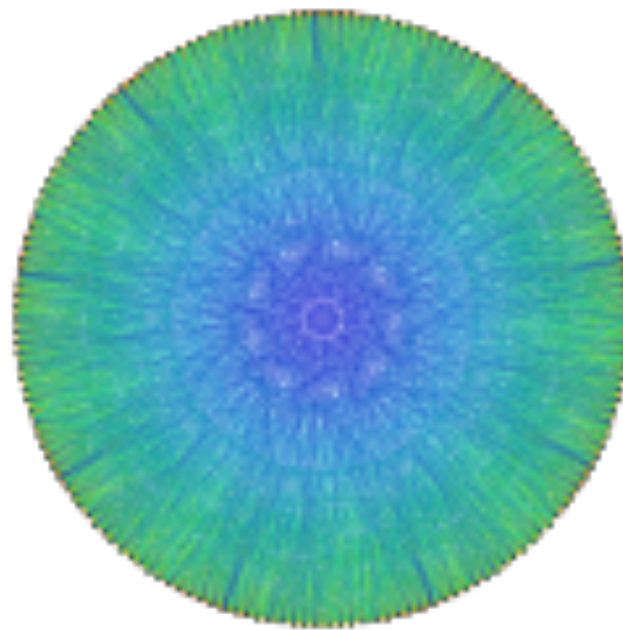


Wagner



# Graphs and Neo4j

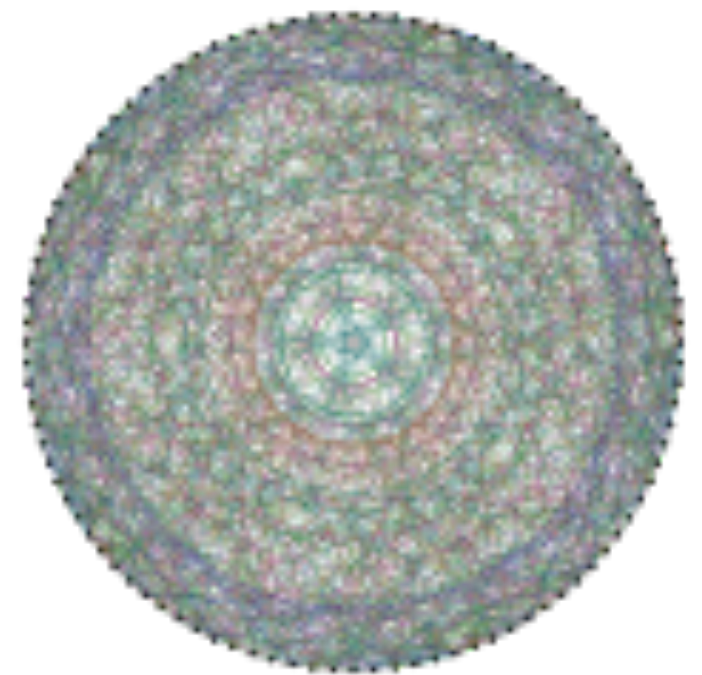
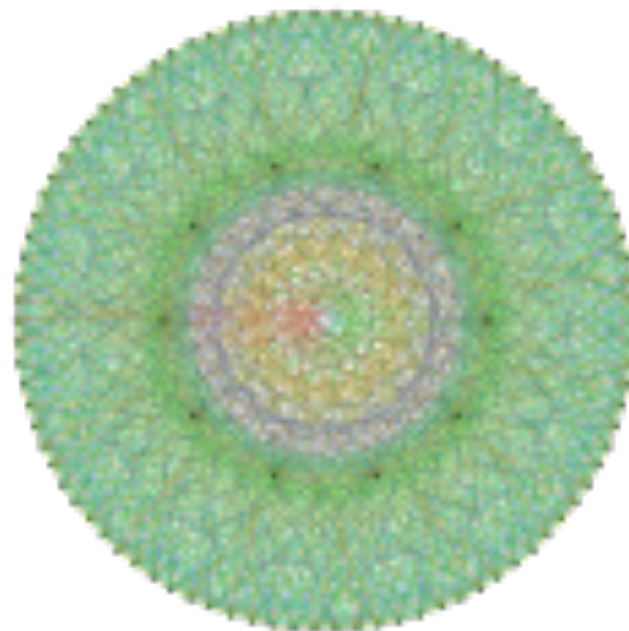
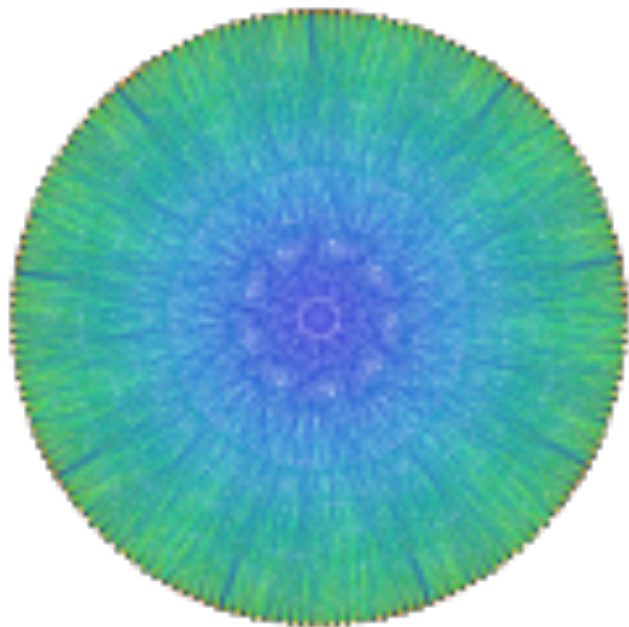
## Common named graphs



Local McLaughlin graph

# Graphs and Neo4j

You can make art out of your DB.  
(Don't)



# OmNomHub

<https://github.com/Omnomhub>

(Michelle)-[:LOVES]->(Neo4j)

 @michellesanver

# OmNomHub

**Like GitHub but for recipes!**

# OmNomHub

**Fork a recipe**

# OmNomHub

## See all forks

# OmNomHub

**Join groups**

**Search similar recipes**



# OmNomHub

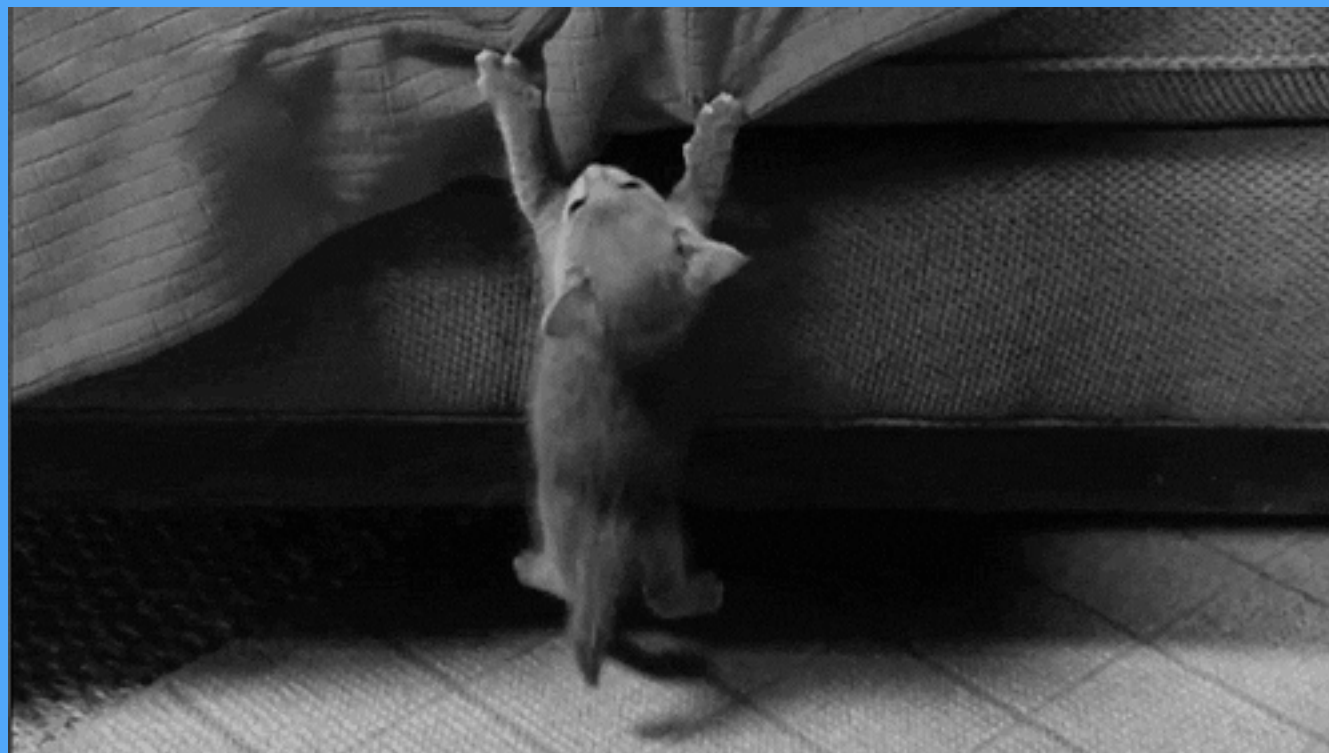
**Have fun! ;-)**

# Neo4j Browser

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# Hang in there



**(Michelle)-[:LOVES]->(Kittens)**

 [@michellesanver](https://twitter.com/michellesanver)

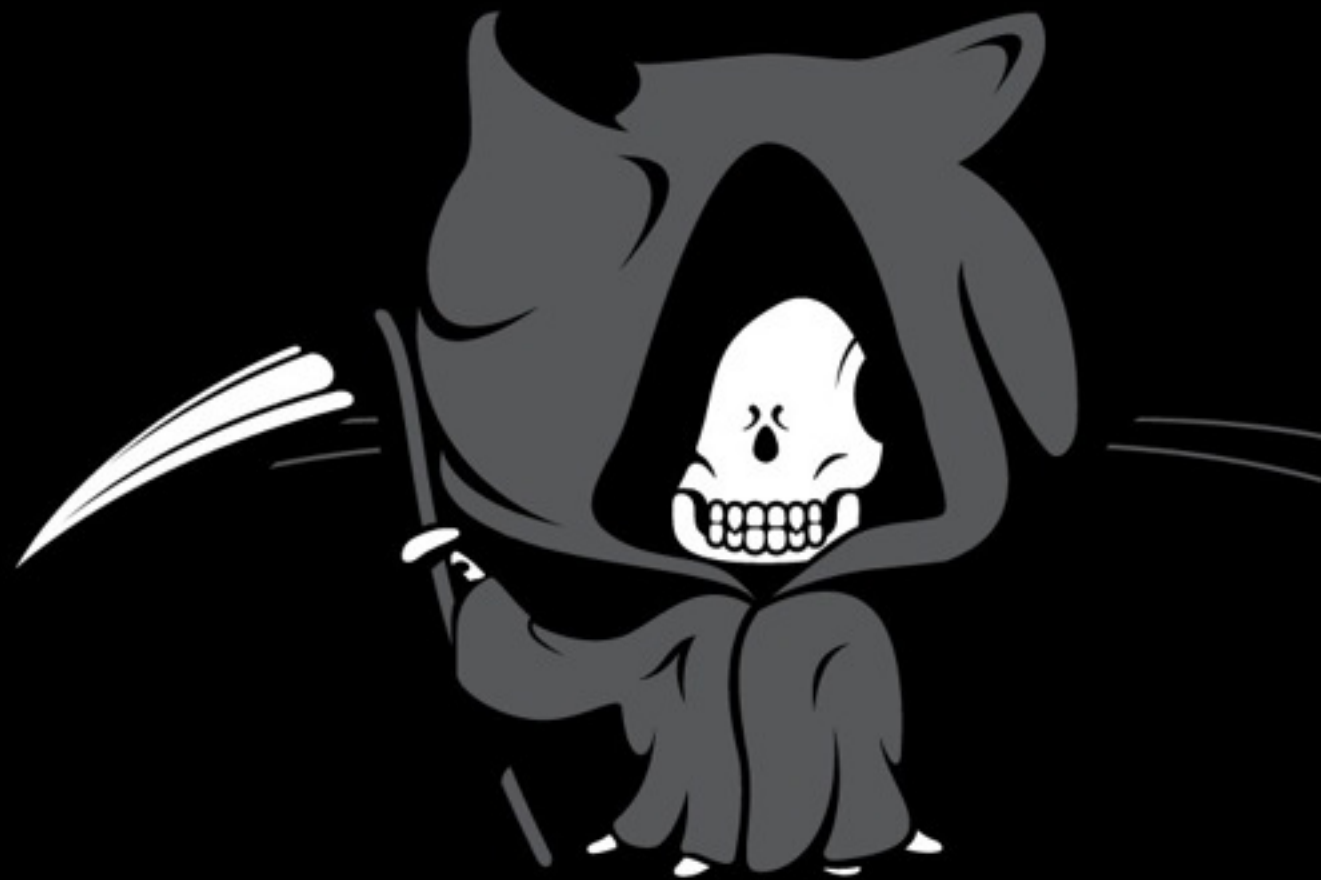
# Neo4j Browser

Makes it easy to visualise and  
query the data.

# Neo4j Browser

Let's learn cypher in the browser!

# DEMO



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# Neo4j in PHP

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# Neo4j in PHP

As we saw  
There's a REST interface!



# Neo4j in PHP

## Neo4jPHP

PHP Wrapper for the Neo4j graph database REST interface

**[github.com/jadell/neo4jphp](https://github.com/jadell/neo4jphp)**

# Neo4j in PHP

```
require( 'vendor/autoload.php' );  
  
$client =  
    new Everyman\Neo4\Client( 'localhost', 7474 );  
  
print_r( $client->getServerInfo() );
```

# Neo4j in PHP

Use **\$client** to do anything!

# Neo4j in PHP

## Creating a node with the client

```
$recipe = $client->makeNode();  
$recipe->setProperty('title', 'Spaghetti Bolognese')  
    ->setProperty('Description', 'Italian words')  
    ->setProperty('Ingredients', 'A lot')  
    ->save();  
  
$recipe->getId();
```

# Neo4j in PHP

Use **\$client** to do anything, even Cypher queries.

**You get the idea, it's well documented!**

<https://github.com/jadell/neo4jphp/wiki>

# Neo4j in PHP

**In OmNomHub we're using Symfony2**

There's a bundle for that.

<https://github.com/klaussilveira/neo4j-client-bundle>

# OmNomHub: Beyond Pizza

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# OmNomHub: Beyond Pizza

## Connecting users

“You both like”



# OmNomHub: Beyond Pizza

## Connecting recipes

“These have similar ingredients and user base”

# OmNomHub: Beyond Pizza

**Being smart**

“You might like”

# OmNomHub: Beyond Pizza

## Being smart

Smart recipe collections!

# OmNomHub: Beyond Pizza

**Being creepy**

“Don’t like meat huh?”

# Wrapup

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 [@michellesanver](https://twitter.com/michellesanver)

# Wrapup

Graphs are everywhere

# Wrapup

They make it easy to connect data

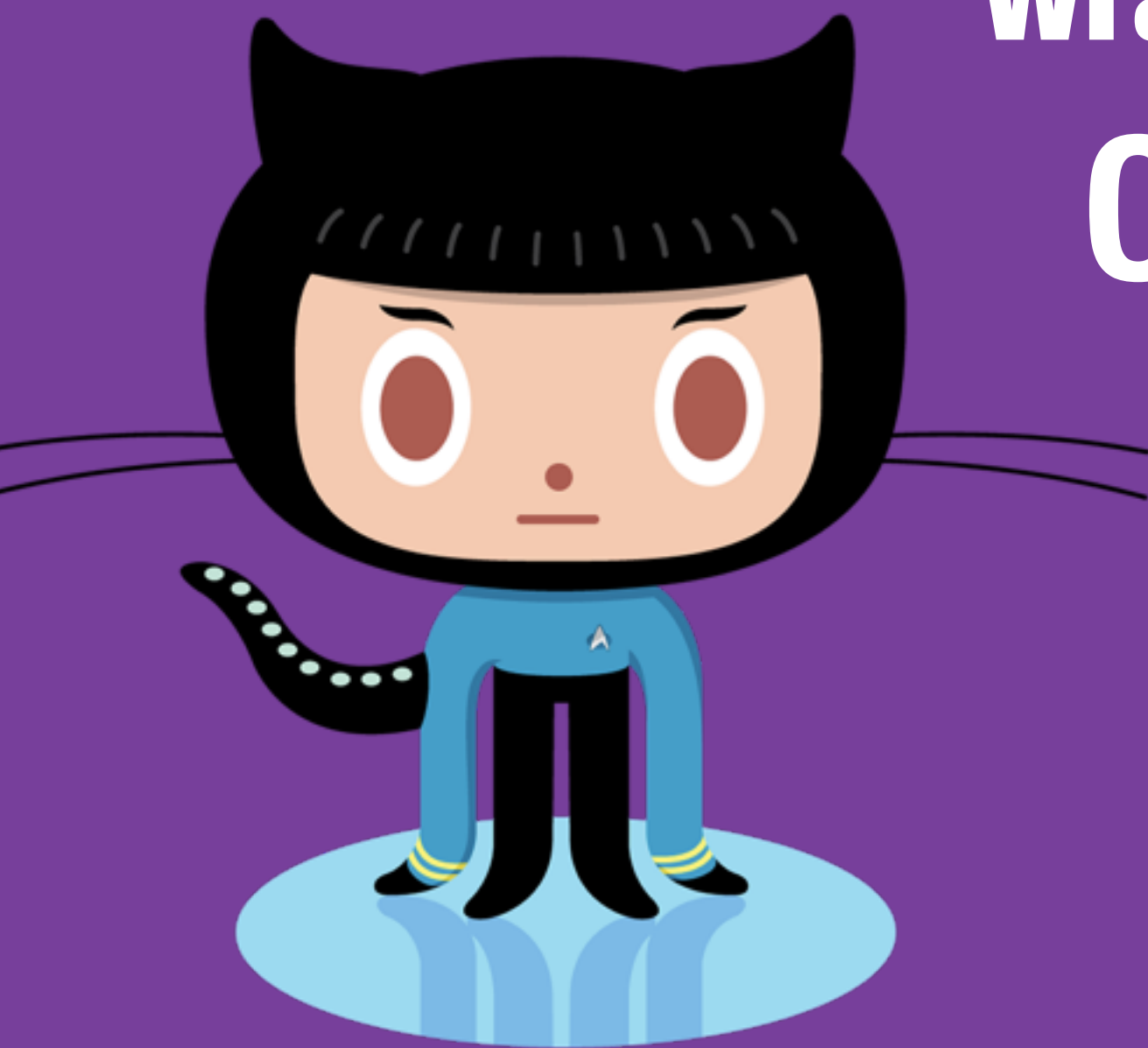
# Wrapup

Easier to be creepy <3



# Wrapup

OmNomHub will be **EPIC** :D



# Wrapup Open Source!

<https://github.com/Omnomhub>

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# Resources

[docs.neo4j.org](https://docs.neo4j.org)

**Graph Databases - Ian Robinson,**  
neo technology gives you the e-book version for free.

[neo4j.org/learn](https://neo4j.org/learn)

**(Michelle)-[:LOVES]->(Neo4j)**

 **@michellesanver**

# Questions?

**(Michelle)-[:LOVES]->(Neo4j)**

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# Thank you

## AmsterdamPHP

**(Michelle)-[:LOVES]->(Neo4j)**

 **@michellesanver**

# How would you use it?

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