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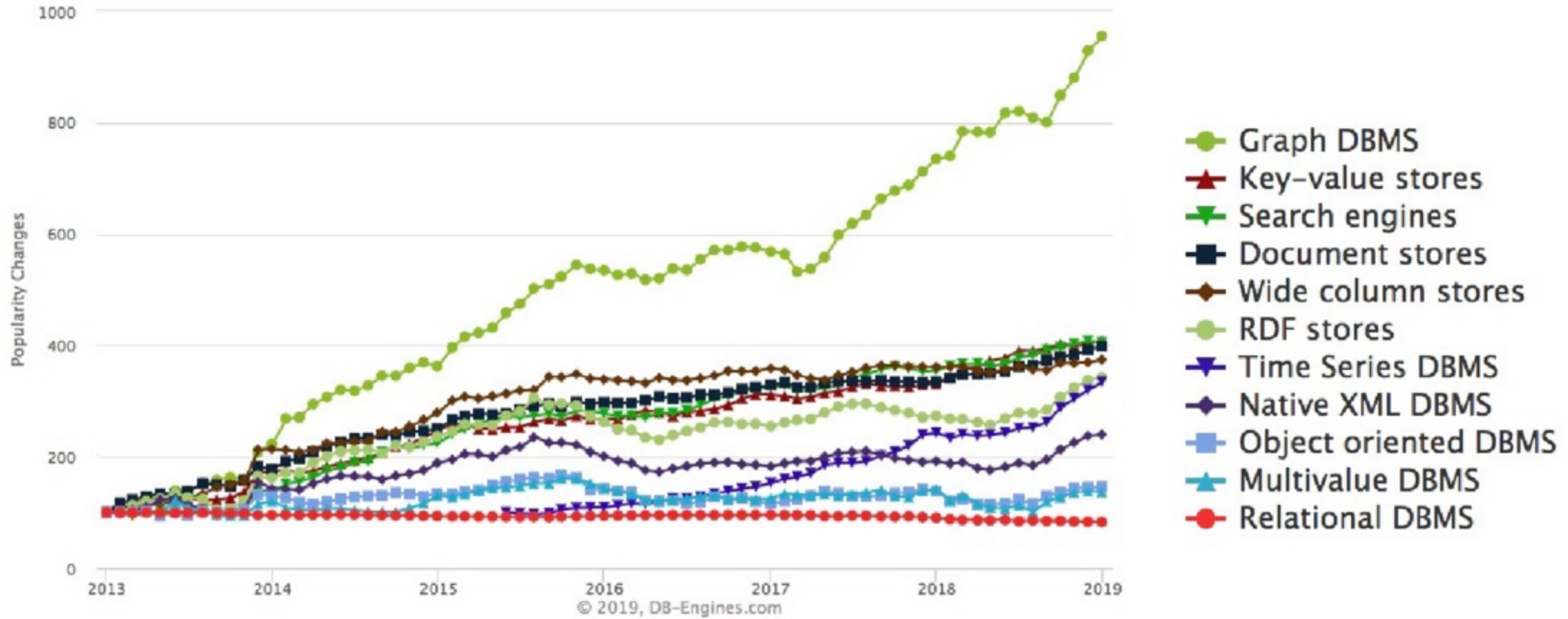
Graph Databases

Miracle Cure for Big Data

GRAPH DATABASE

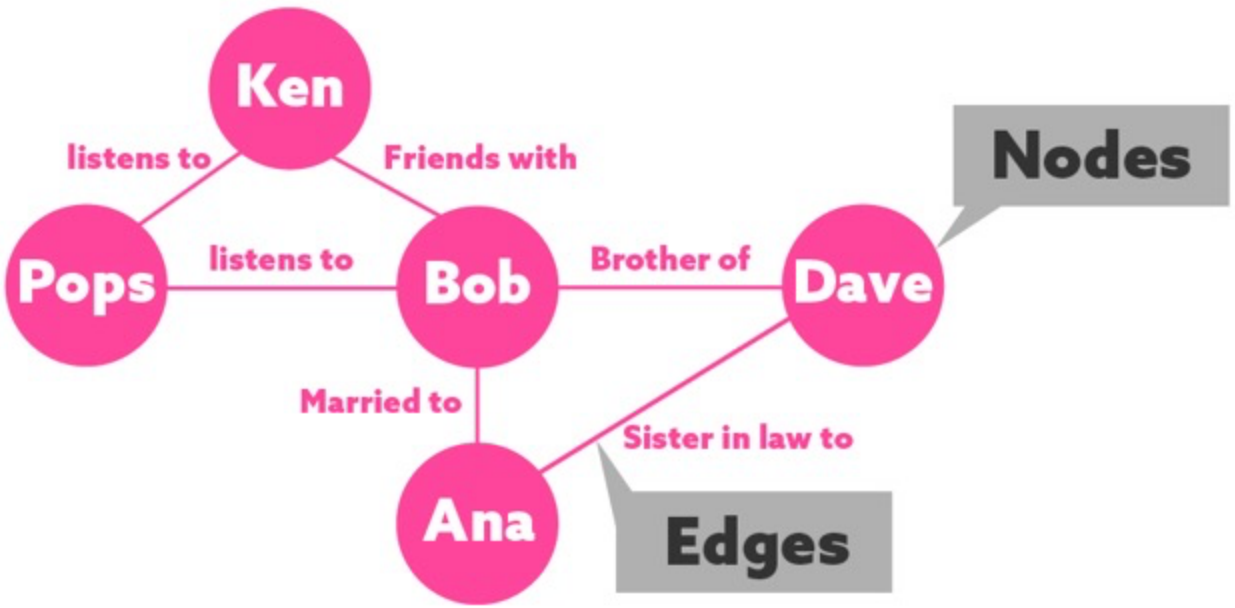
Complete trend, starting with January 2013



Popularity change rate by category from DB-Engines (http://db-engines.com/en/ranking_categories)

GRAPH DATABASE

- We can describe various relational structures as networks.
- These networks can be abstracted as a set of nodes and edges = graph.



WHY GRAPHS

- We often use tables, which use a "relational model" to manage our data.
- However, some search patterns are not appropriate with this model.

Account

Account ID	Owner ID	Creation Date
1111	200	2010-3-10
2222	100	2011-2-13
3333	400	2015-9-16
4444	300	2012-5-25
5555	100	...

Customer

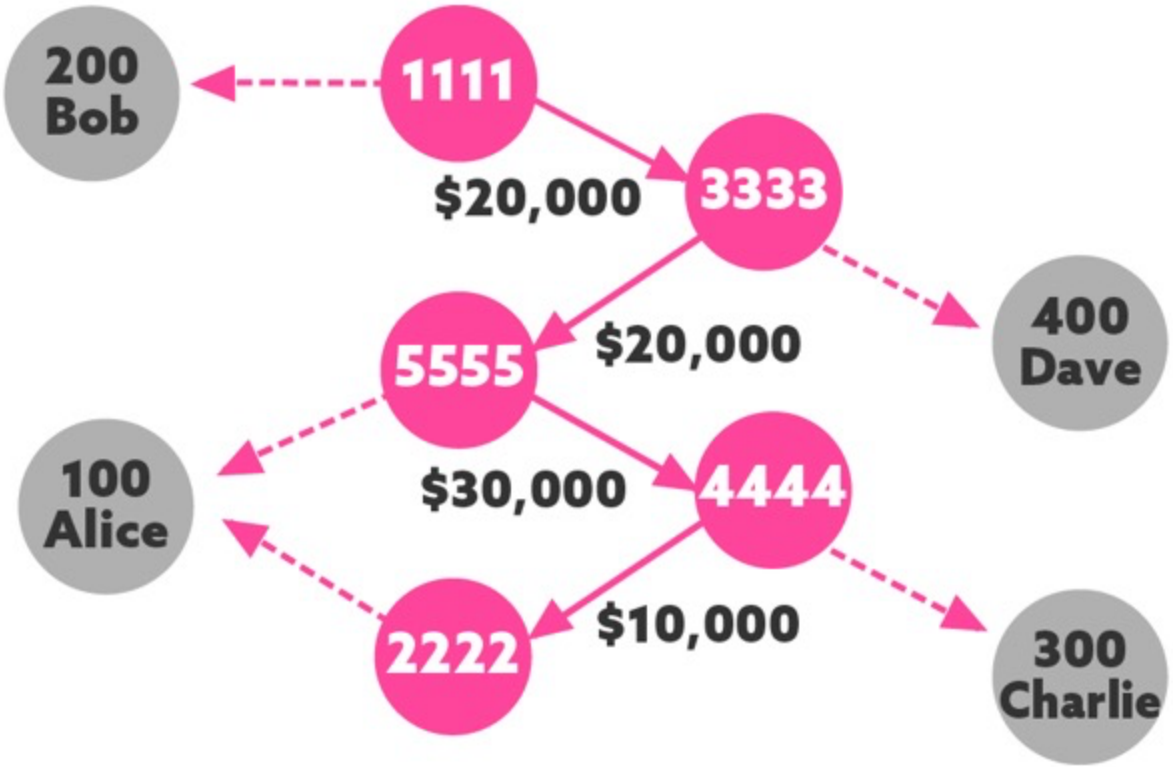
Owner ID	Name
200	Alice
100	Bob
400	Charlie
300	Dave
...	...

Transaction

SRC	DEST	Type	Amount
1111	3333	Wire	$20,000
5555	4444	Wire	$30,000
4444	2222	Recurring	$10,000
3333	5555	Wire	$20,000
...			

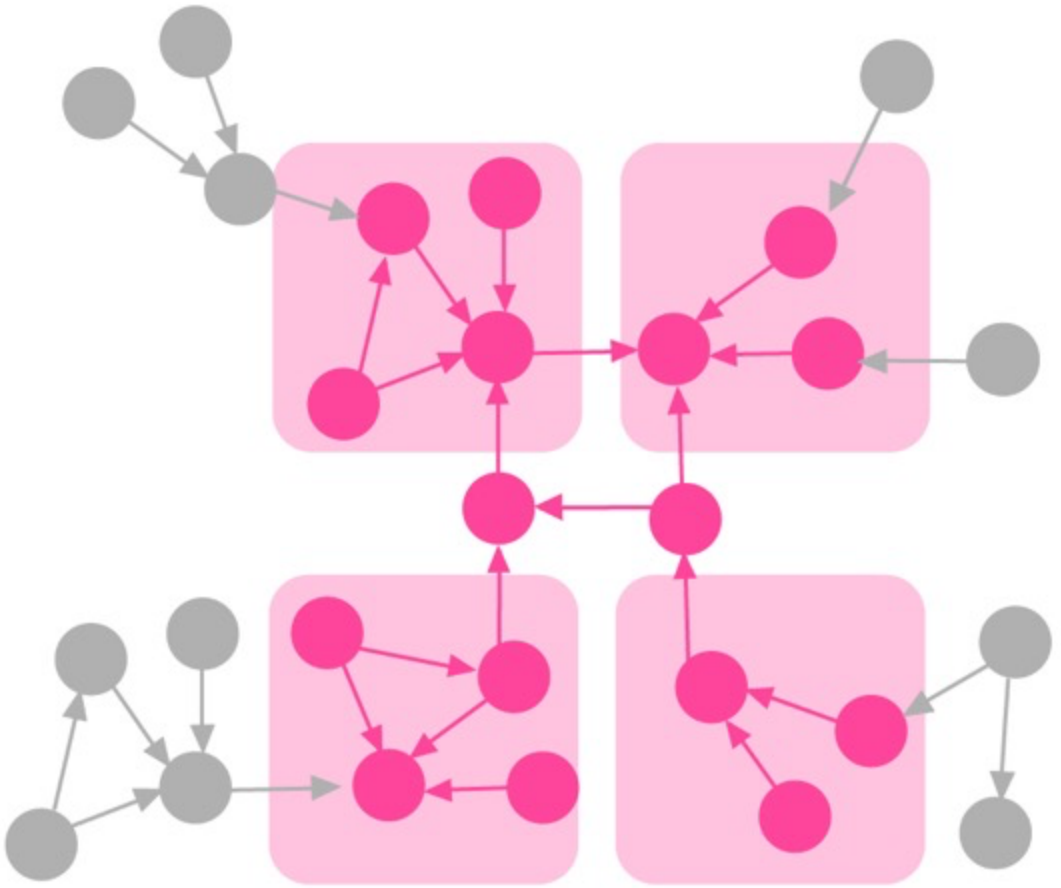
WHY GRAPHS

- Represent data as graphs
  - -Entity = node
  - -Relationship = edge
- The following questions may be answered more intuitively.



WHY GRAPHS

- The variety of graph algorithms can give us more insights from the data.
- Extract implicit relationships



CURRENT SITUATION

Visualizer

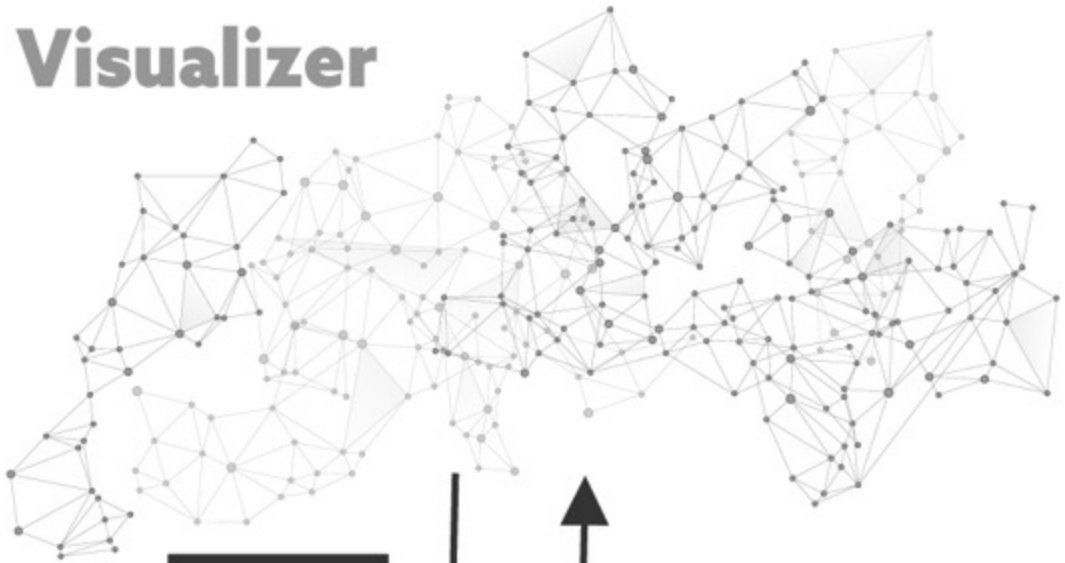
Graph Databases

neo4j

Oracle Labs
PGX

TigerGraph

IDEAL SITUATION



X2 (Cross-to)
Available on GitHub

https://github.com/g2glab/x2

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Thank you for listening!