

The
Technology
of

[kon-tekst]







Quintino Bocaiuva



Quintino Bocaiuva

Woman shot dead by drug gang after following Waze app's directions to wrong destination



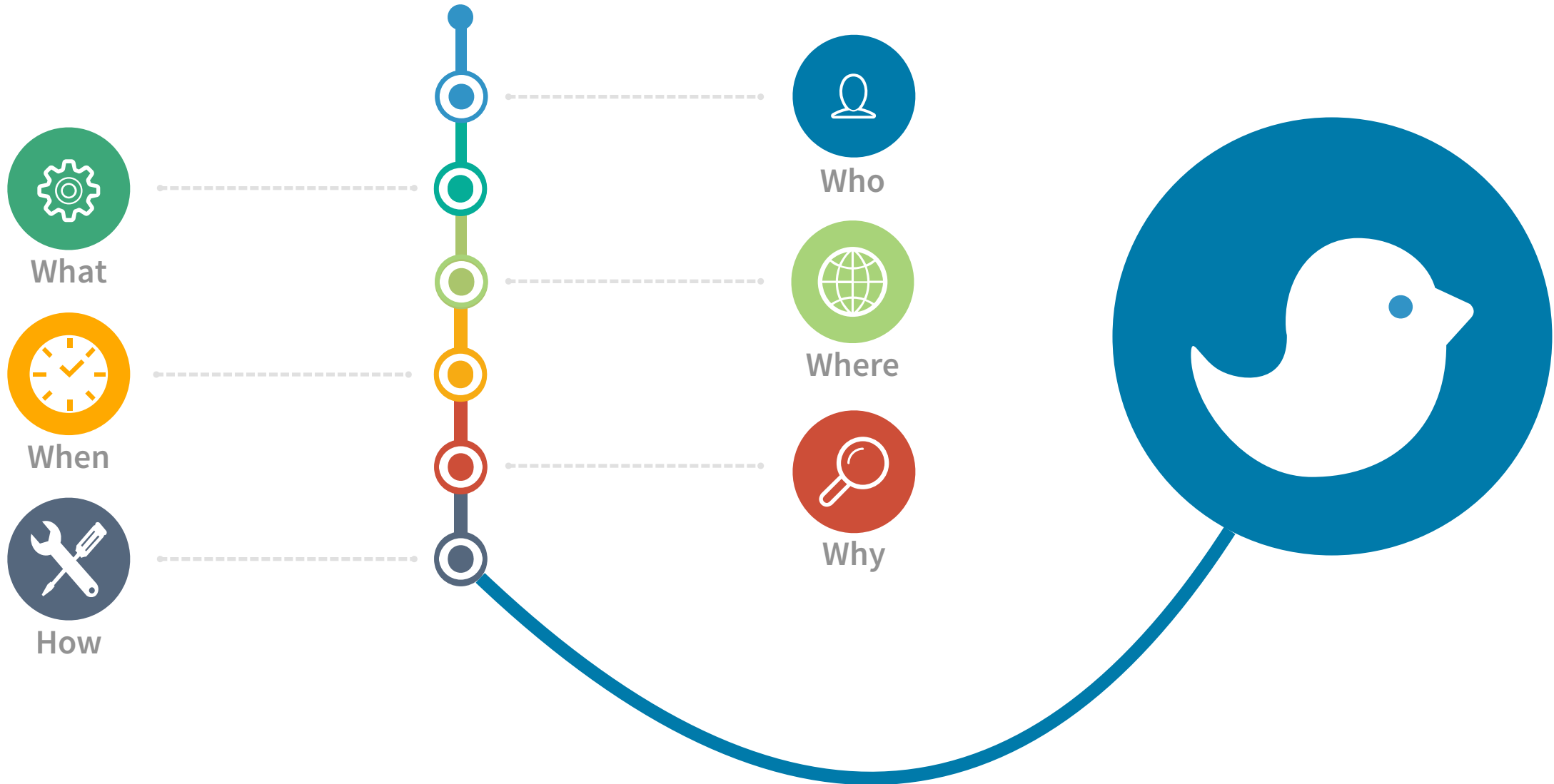
Courtesy of
boingboing.net

What is Context?

What is Context?



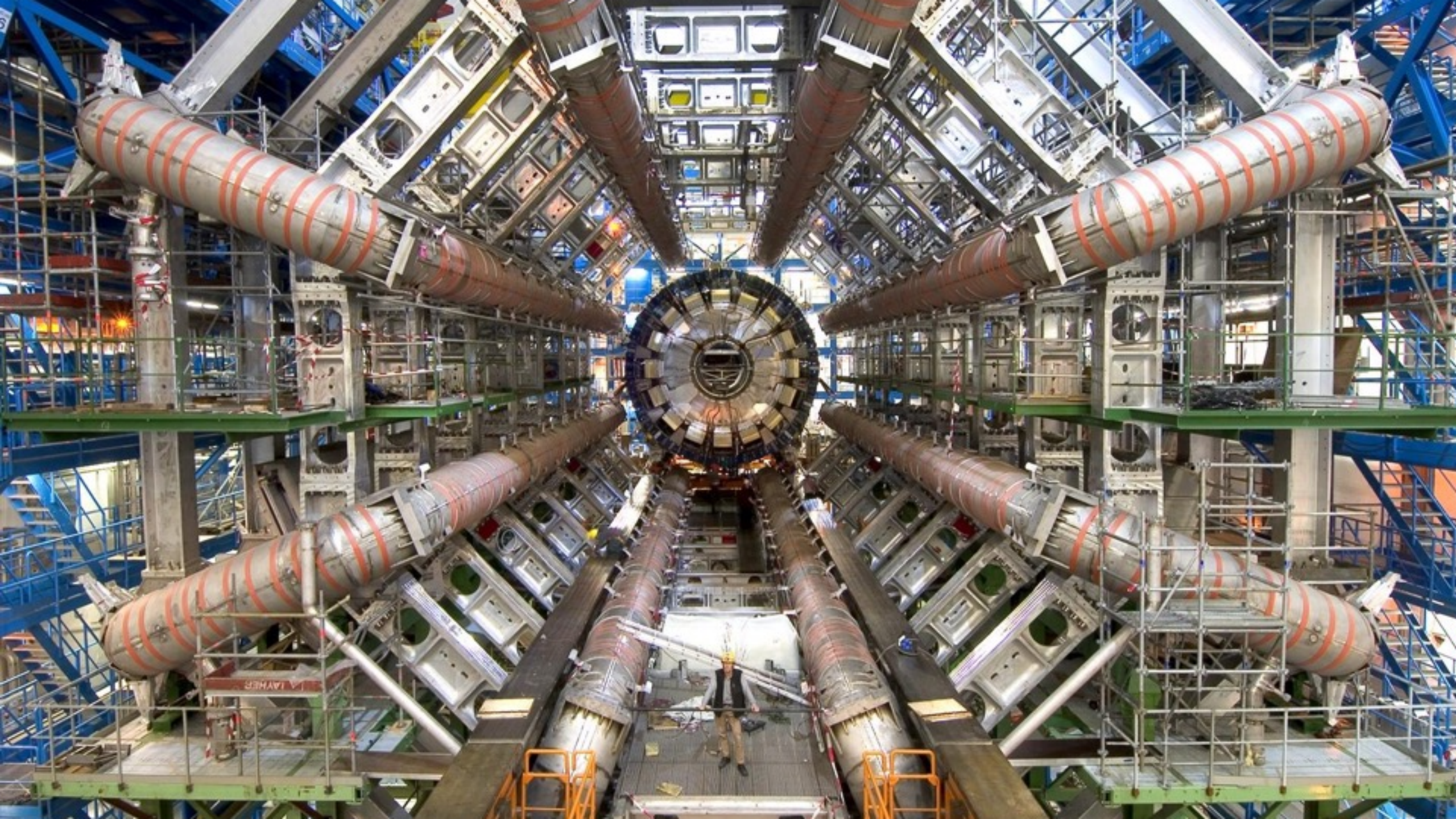
What is Context?

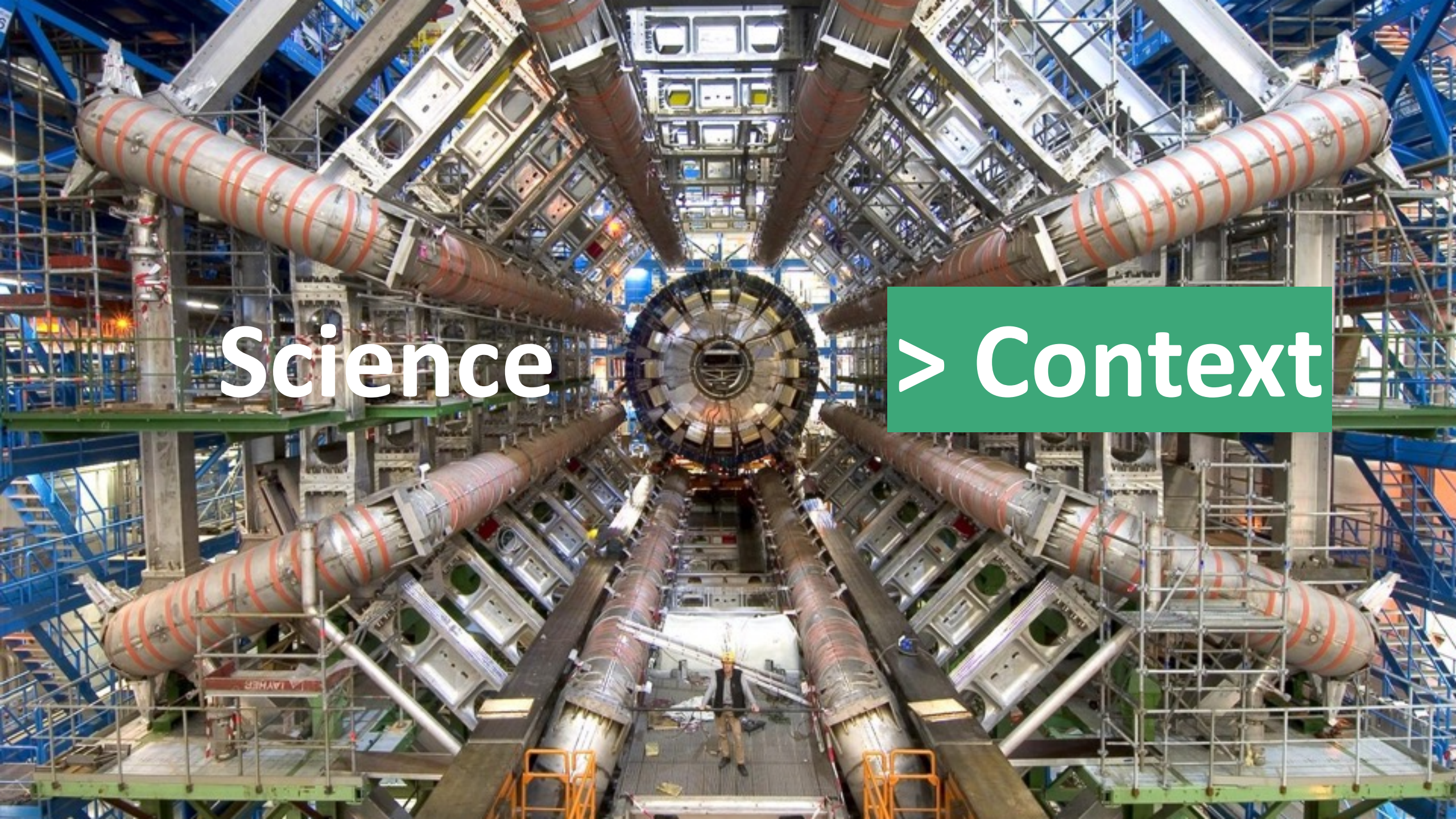


Imagine a world where all insight
and decisions were based in the
absence of context

A dramatic, high-angle view of a city skyline, likely New York City, completely consumed by intense orange and yellow flames. Thick black smoke billows from the burning buildings, filling the upper portion of the frame. The fire is widespread, covering almost all visible surfaces of the skyscrapers and lower buildings. The overall atmosphere is one of total destruction and chaos.

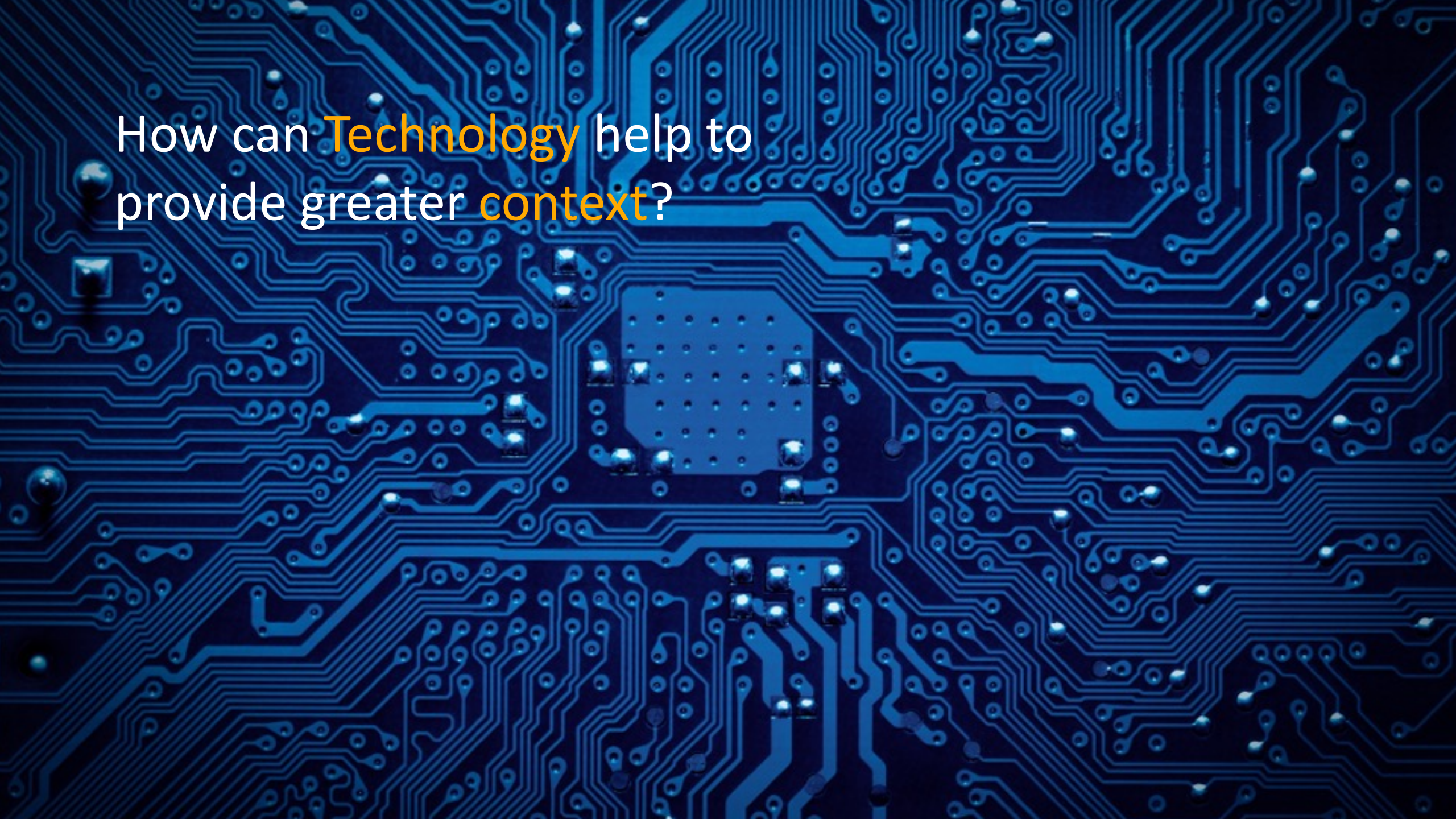
Imagine a world where all insight
and decisions were based in the
absence of context



A photograph of a large particle accelerator tunnel, likely the Large Hadron Collider (LHC). The tunnel is filled with complex machinery, including large cylindrical components with orange bands. A person is standing in the center of the tunnel, providing a sense of scale. The tunnel is illuminated by blue and white lights.

Science

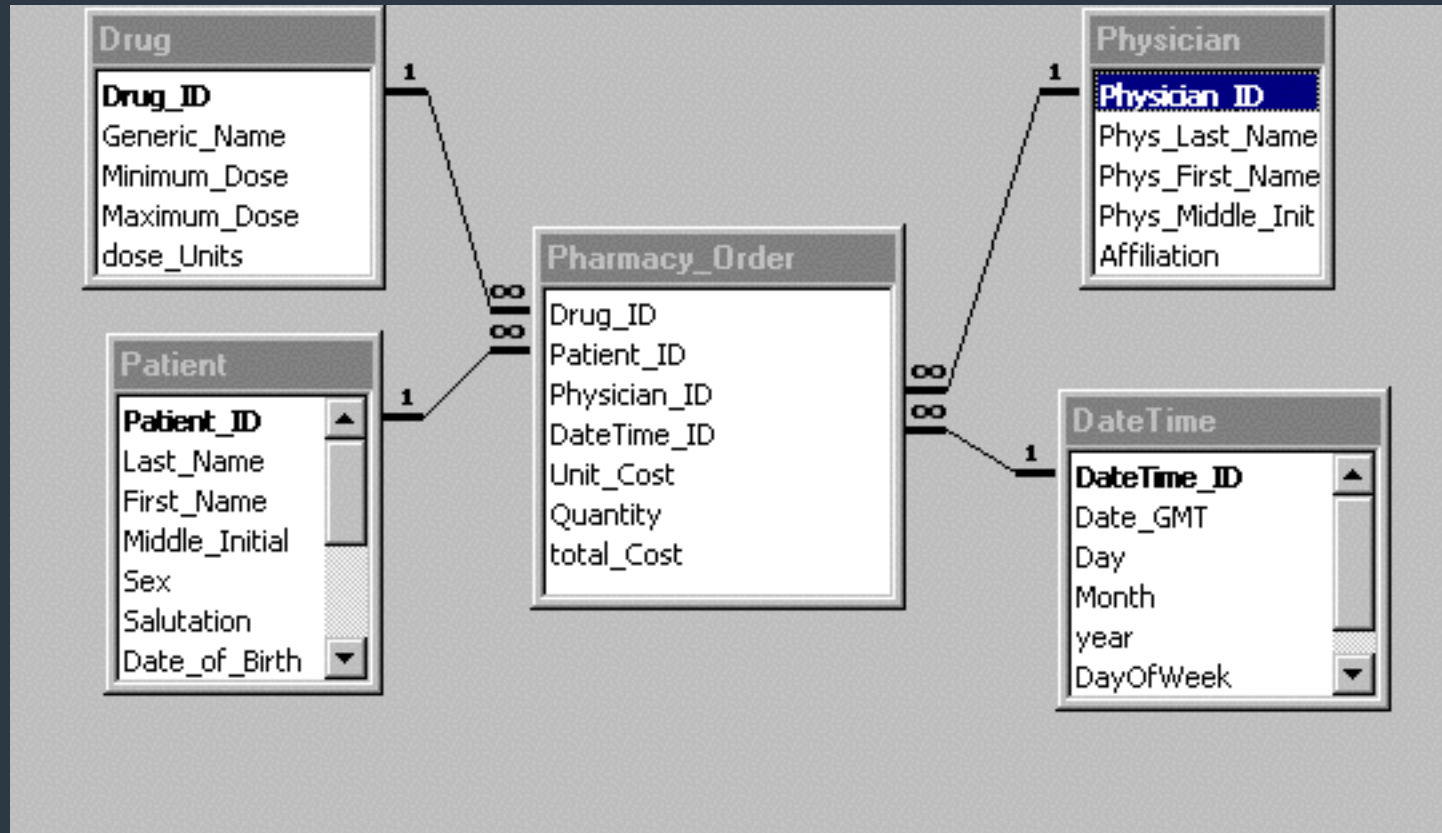
> Context

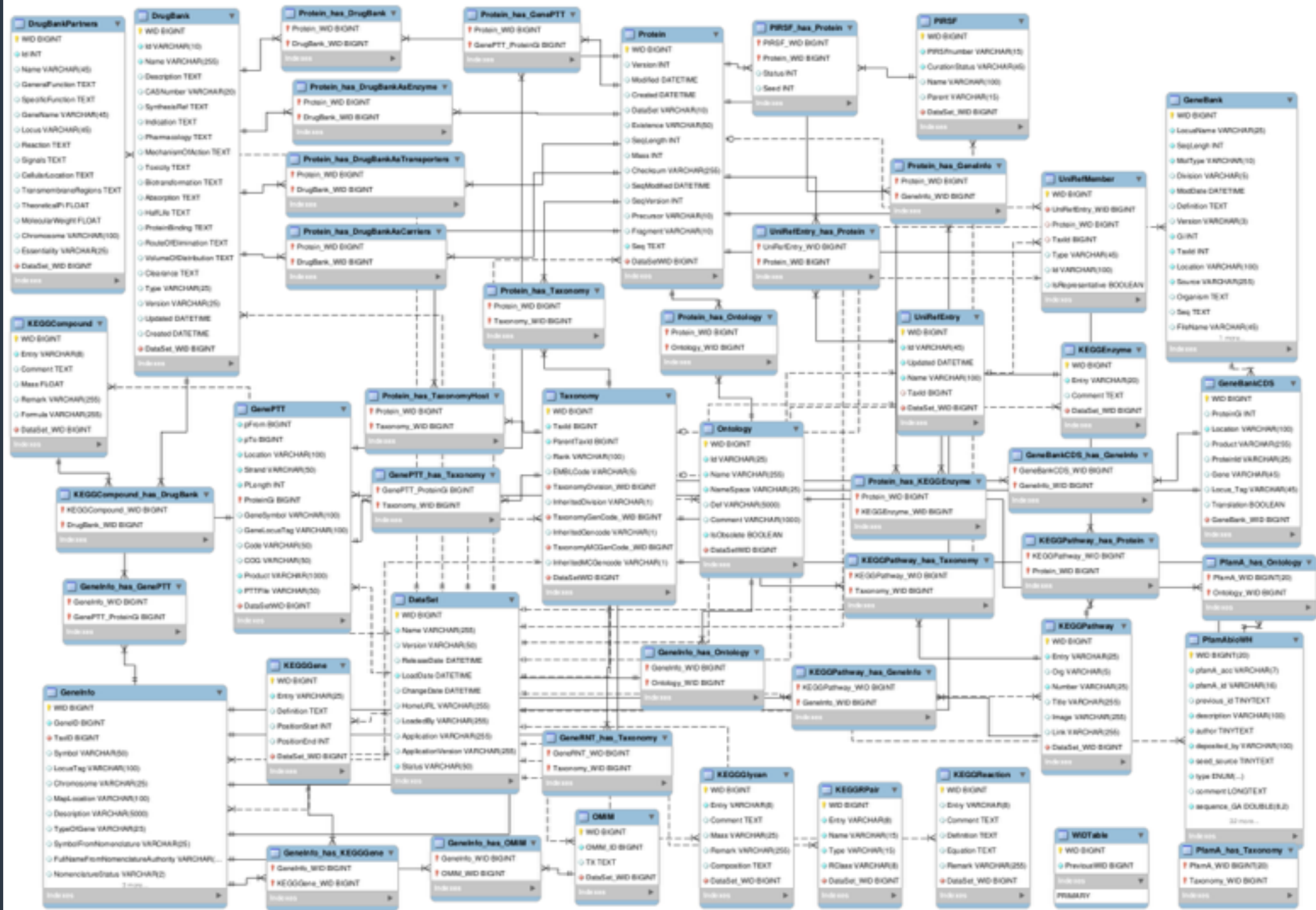


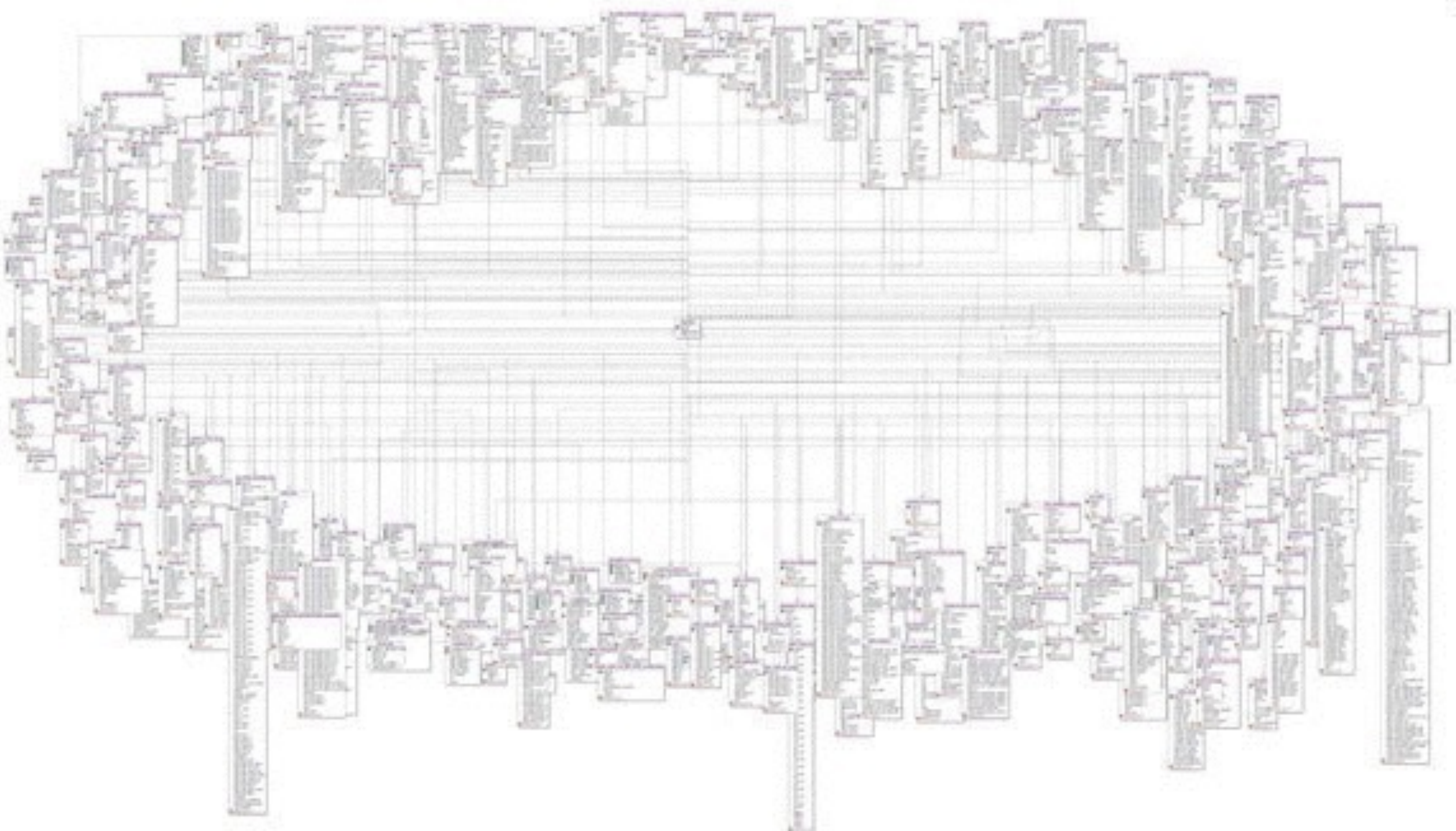
How can Technology help to
provide greater context?

Unstructured Databases

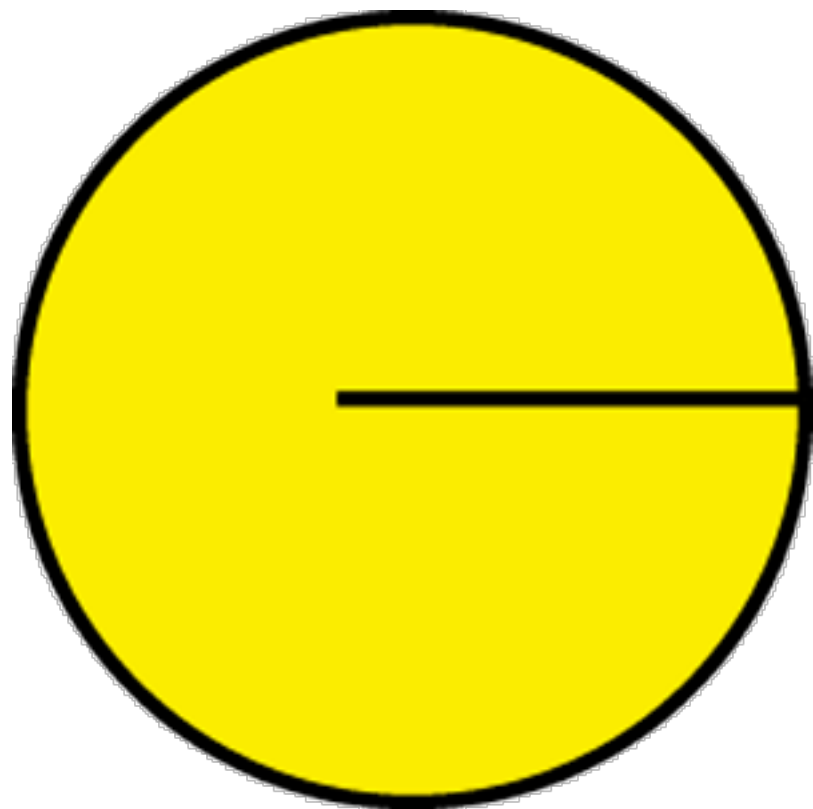
Relational Databases





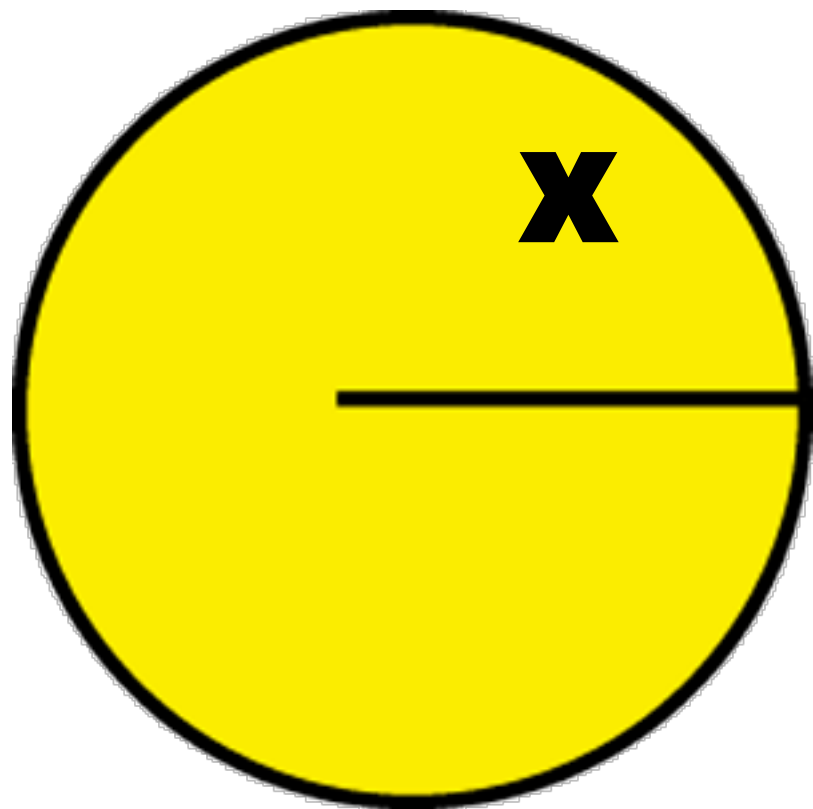


Pac Man RDB



Data

Pac Man RDB



Data

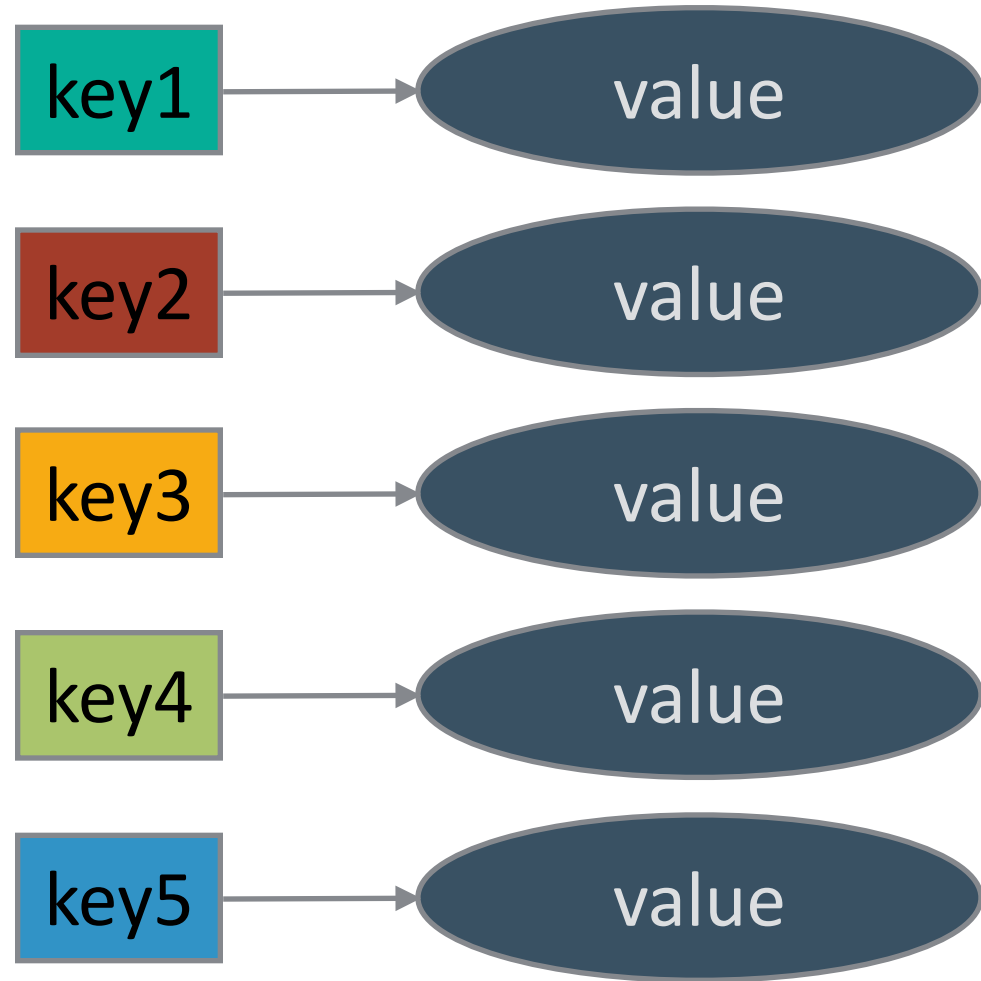
NoSQL Databases

Depends on **what** you are trying to do

NoSQL Databases

Depends on **what** you are trying to do

Key-Value

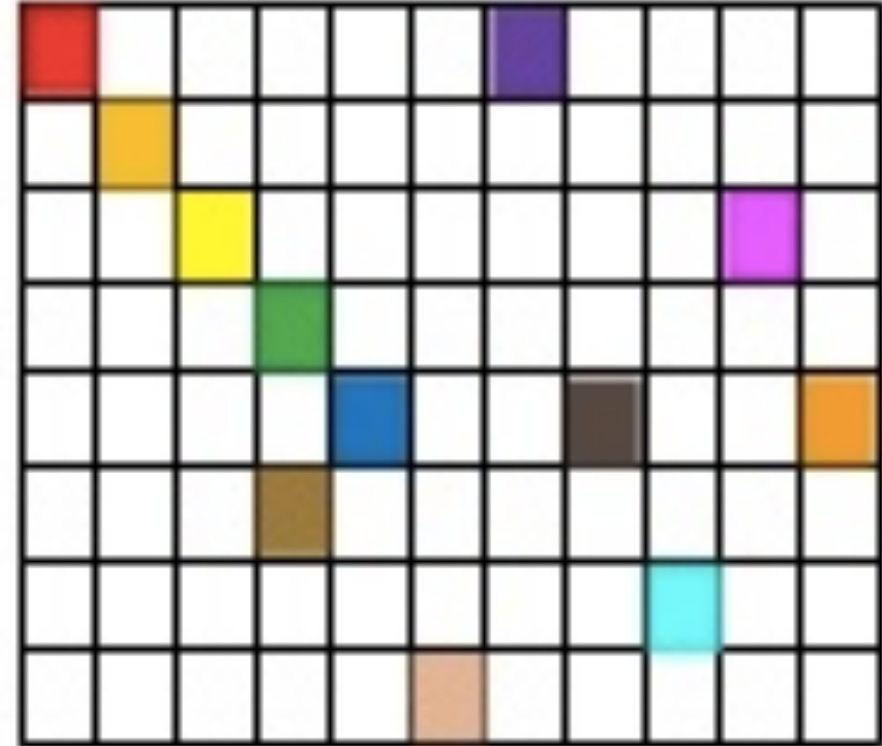


NoSQL Databases

Depends on **what** you are trying to do

Key-Value

Columnar



NoSQL Databases

Depends on **what** you are trying to do

Key-Value

Columnar

Document

```
{ "store": {  
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    { "category": "reference",  
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}
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NoSQL Databases

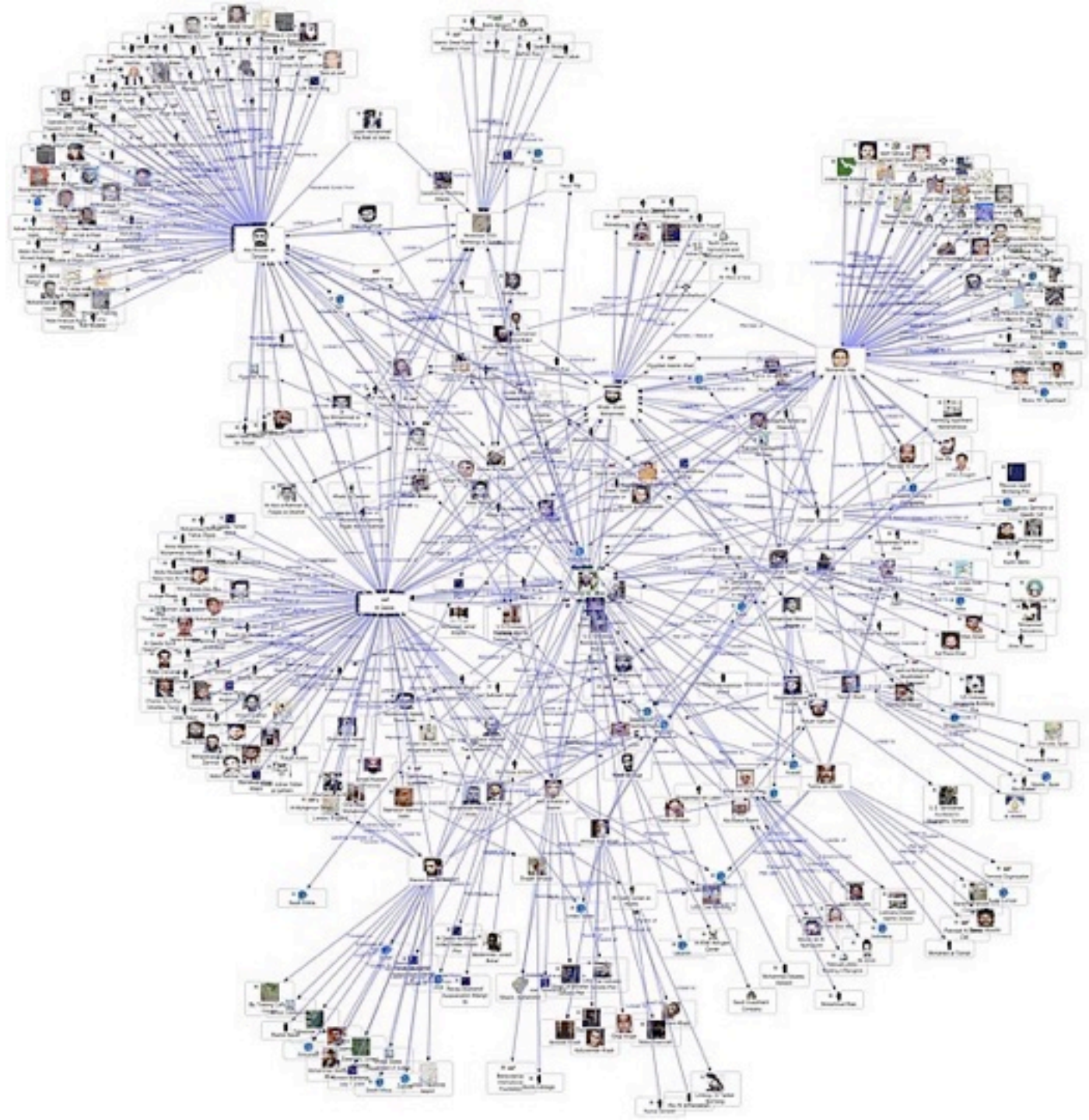
Depends on **what** you are trying to do

Key-Value

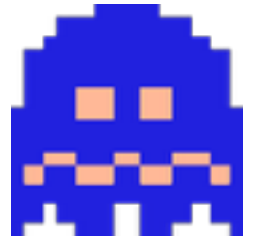
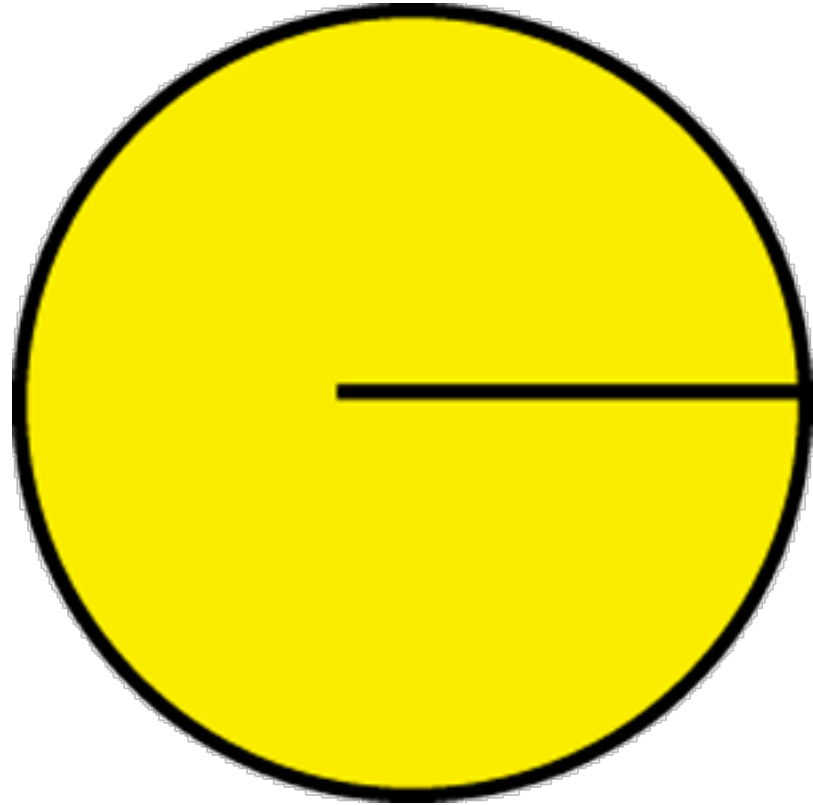
Columnar

Document

Graph



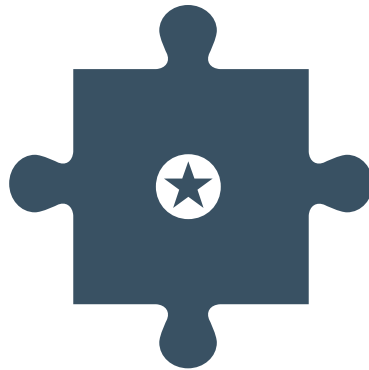
Pac Man NoSQL DB



Data

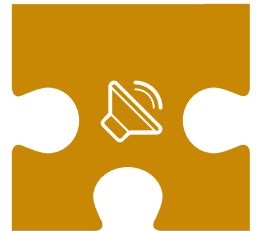
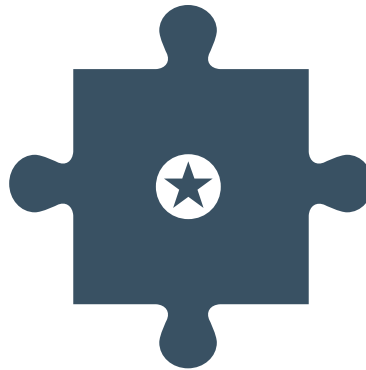
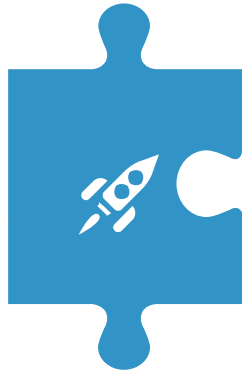
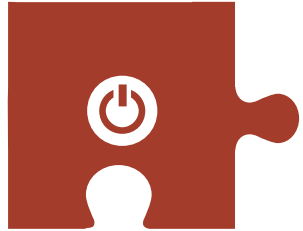
Context is Dynamic

Associated information changes



Context is Dynamic

Associated information changes



Context is Dynamic

Associated information changes





Directed Graph

Semantic Knowledge Modeling

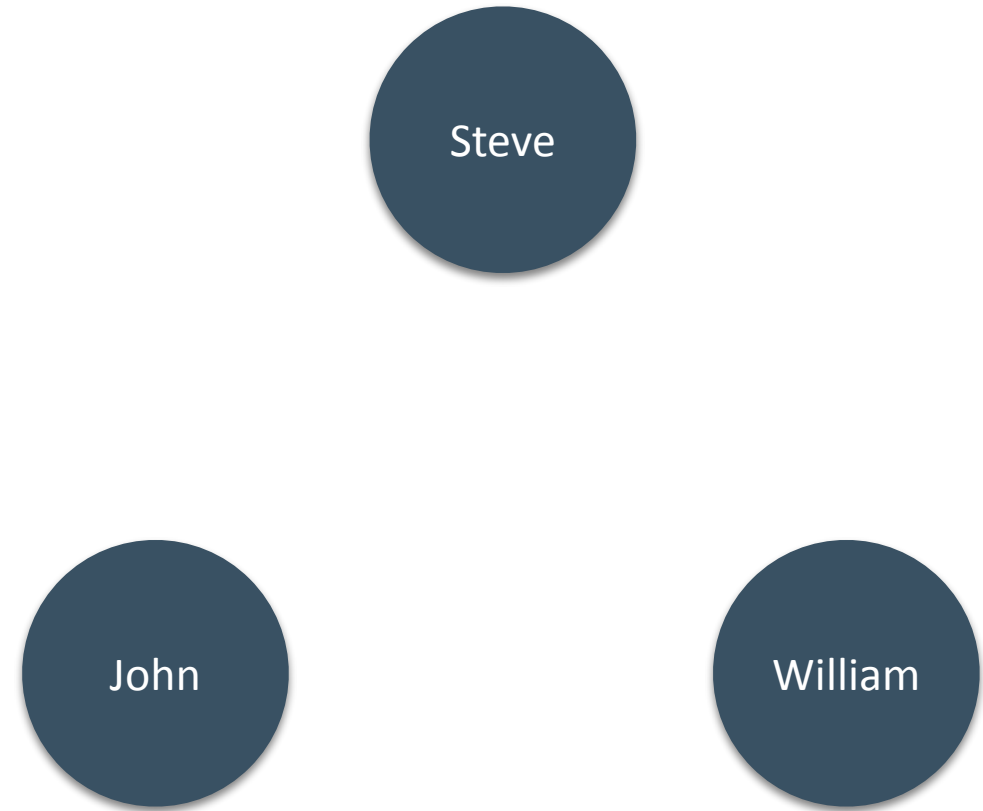
Nodes and Edges

Context can be modeled

Nodes and Edges

Context can be modeled

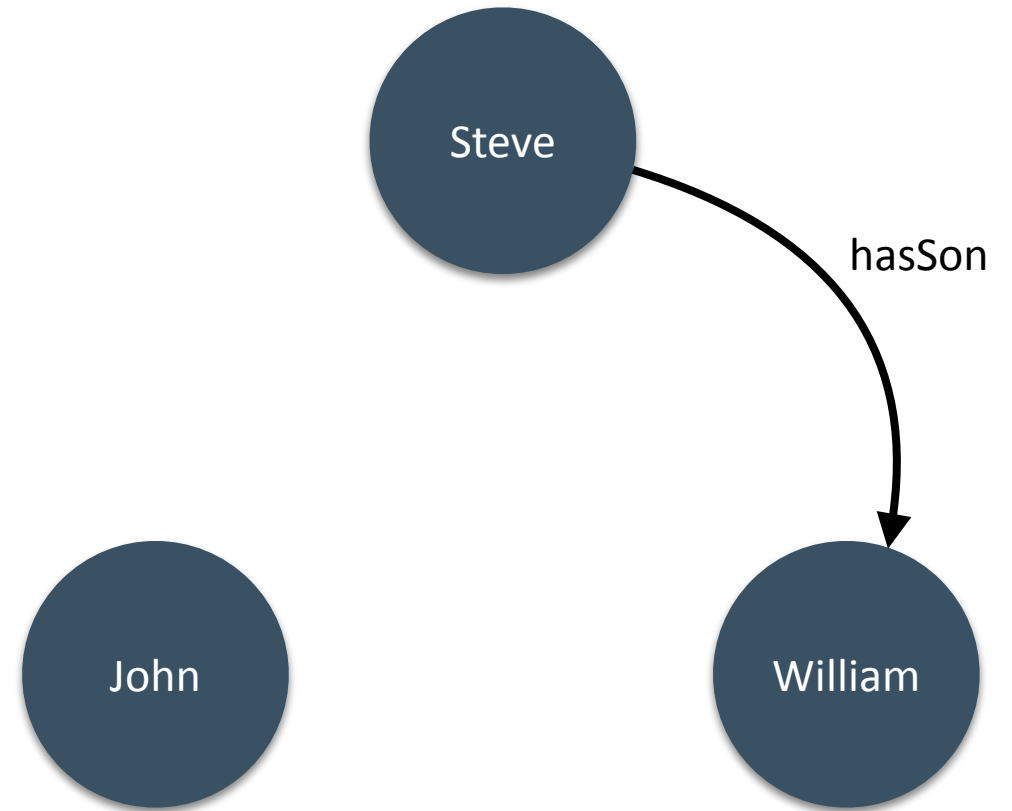
steve isA person
john isA person
william isA person



Nodes and Edges

Context can be modeled

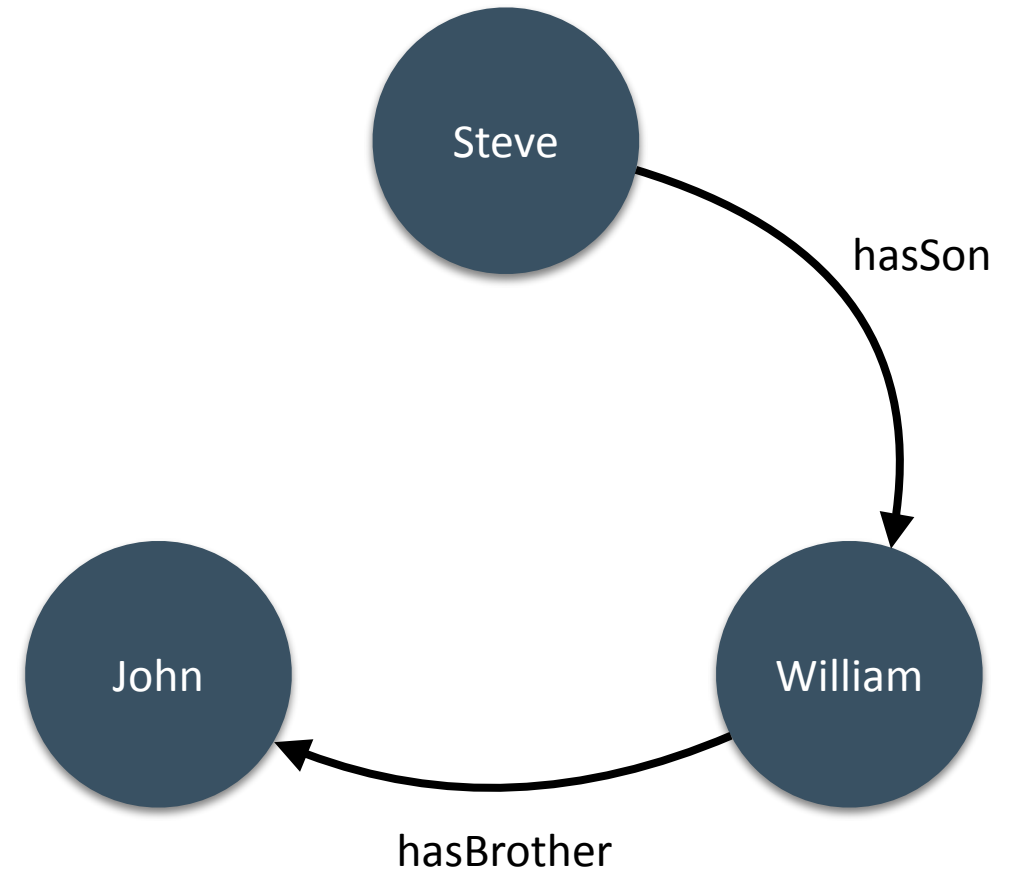
steve isA person
john isA person
william isA person
steve hasSon william



Nodes and Edges

Context can be modeled

steve isA person
john isA person
william isA person
steve hasSon william
william hasBrother john



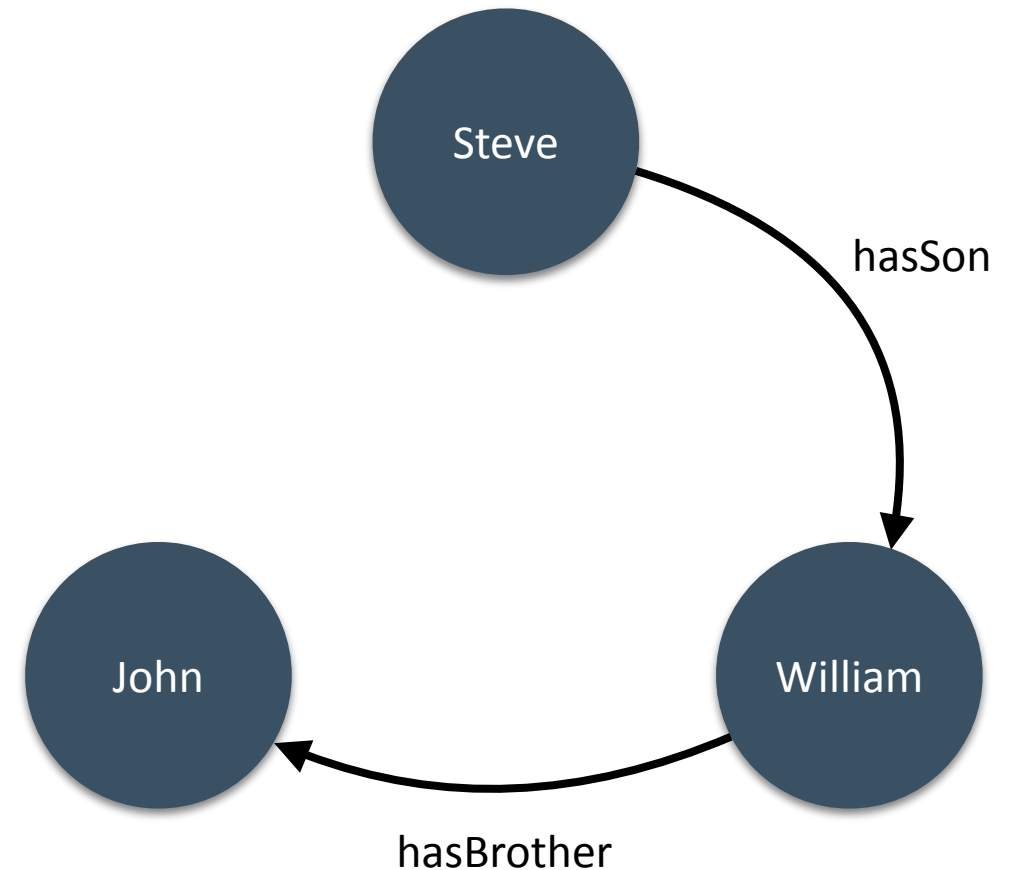
Nodes and Edges

Context can be modeled

steve isA person
john isA person
william isA person
steve hasSon william
william hasBrother john

Property Assertions

hasBrother is symmetric



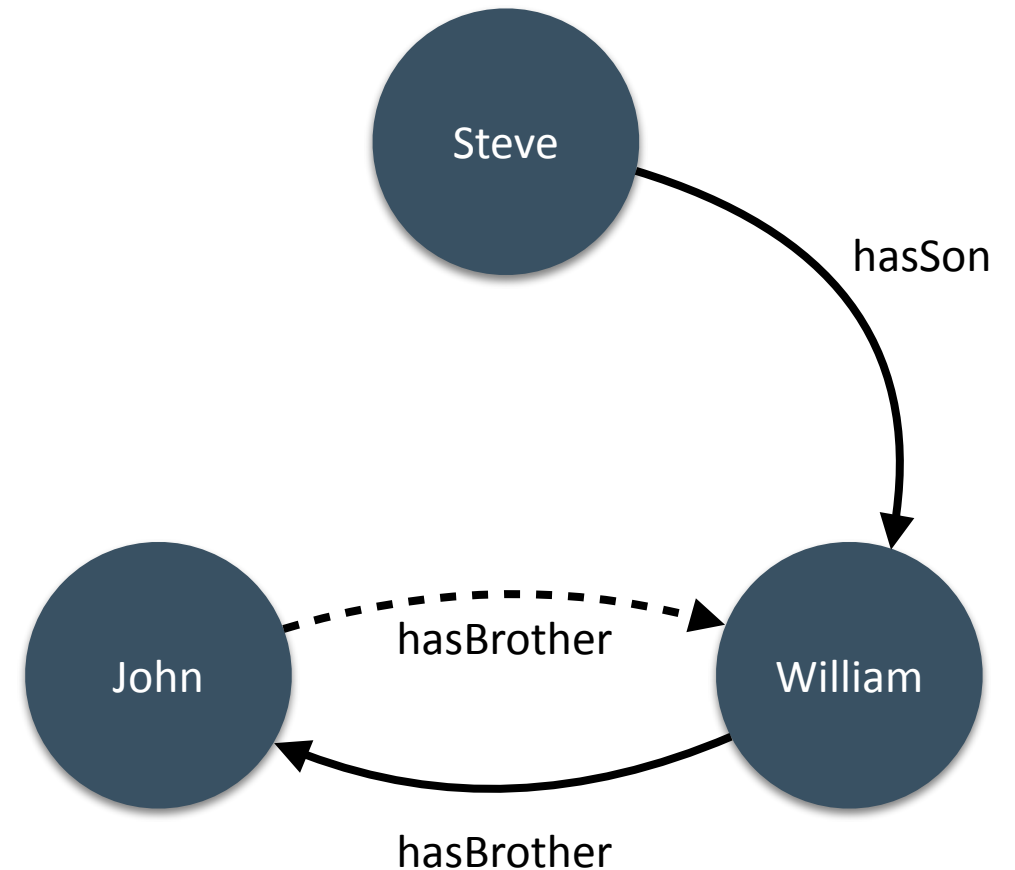
Nodes and Edges

Context can be modeled

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william hasBrother john
john hasBrother william

Property Assertions

hasBrother is symmetric



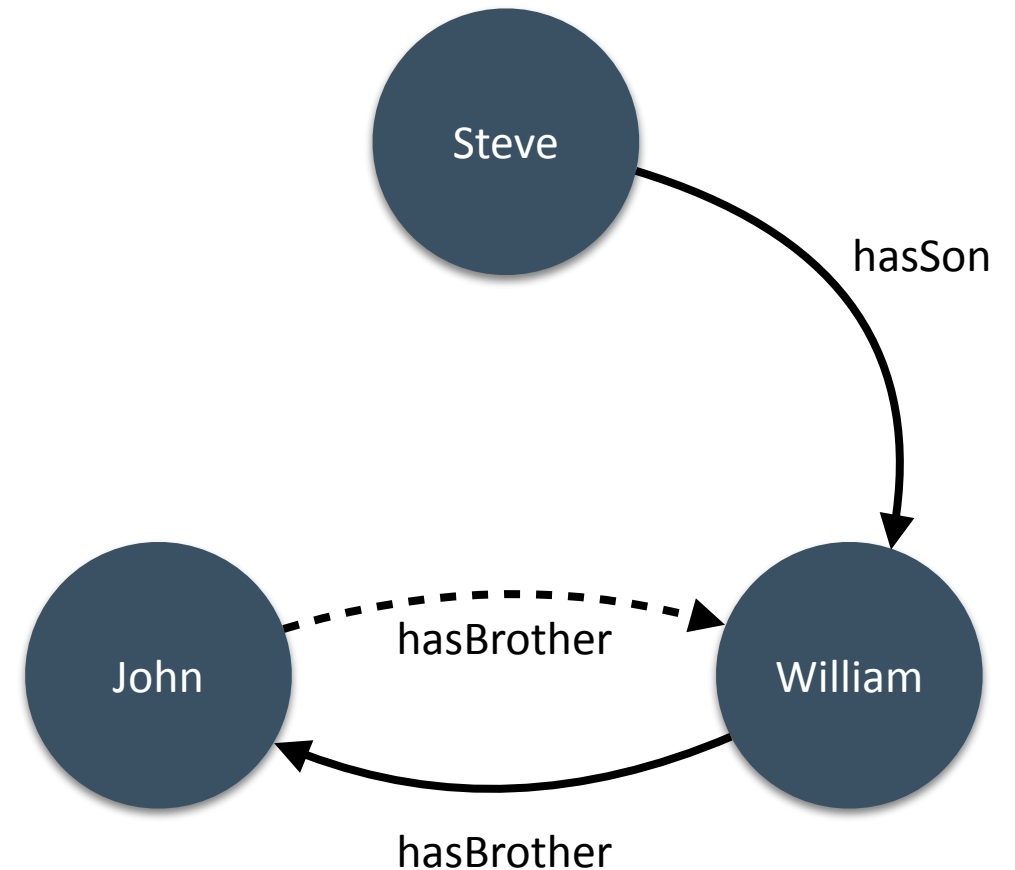
Nodes and Edges

Context can be modeled

steve isA person
john isA person
william isA person
steve hasSon william
william hasBrother john
john hasBrother william

Property Assertions

hasBrother is symmetric
hasSon inverseOf hasFather



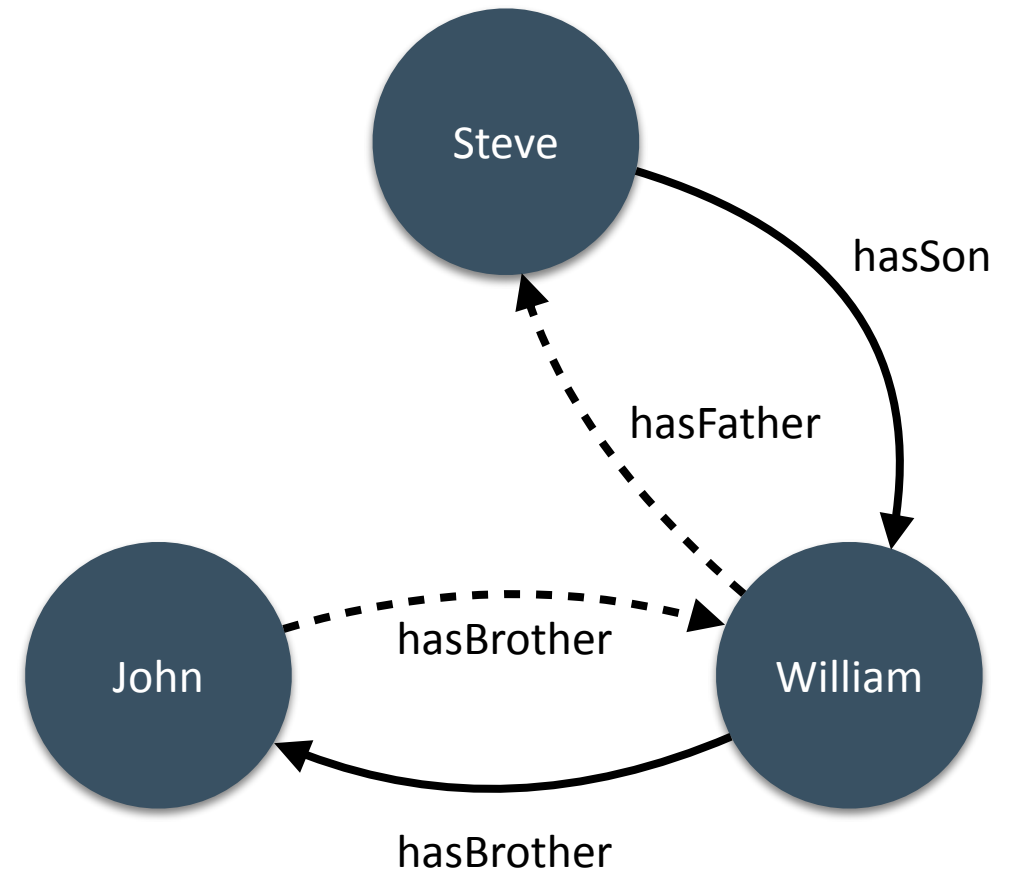
Nodes and Edges

Context can be modeled

steve isA person
john isA person
william isA person
steve hasSon william
william hasBrother john
john hasBrother william
william hasFather steve

Property Assertions

hasBrother is symmetric
hasSon inverseOf hasFather



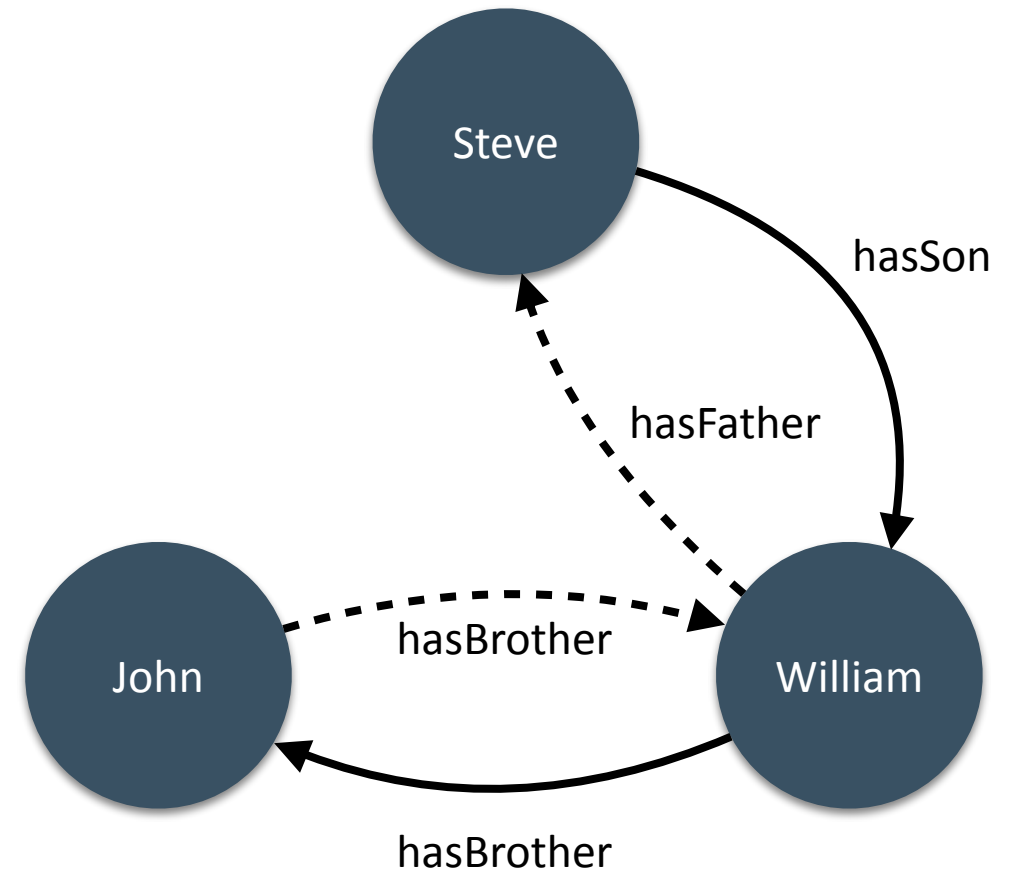
Nodes and Edges

Context can be modeled

steve isA person
john isA person
william isA person
steve hasSon william
william hasBrother john
john hasBrother william
william hasFather steve

Property Assertions

hasBrother is symmetric
hasSon inverseOf hasFather
hasBrother asserts hasFather



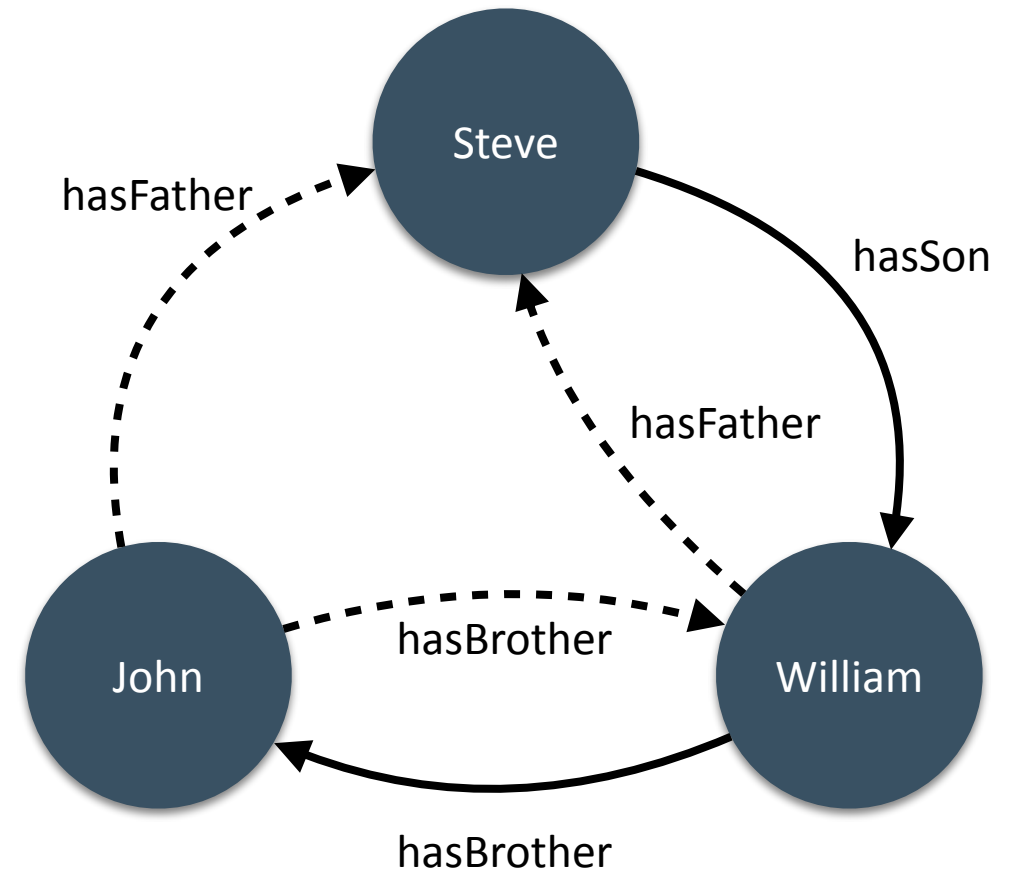
Nodes and Edges

Context can be modeled

steve isA person
john isA person
william isA person
steve hasSon william
william hasBrother john
john hasBrother william
william hasFather steve
john hasFather steve

Property Assertions

hasBrother is symmetric
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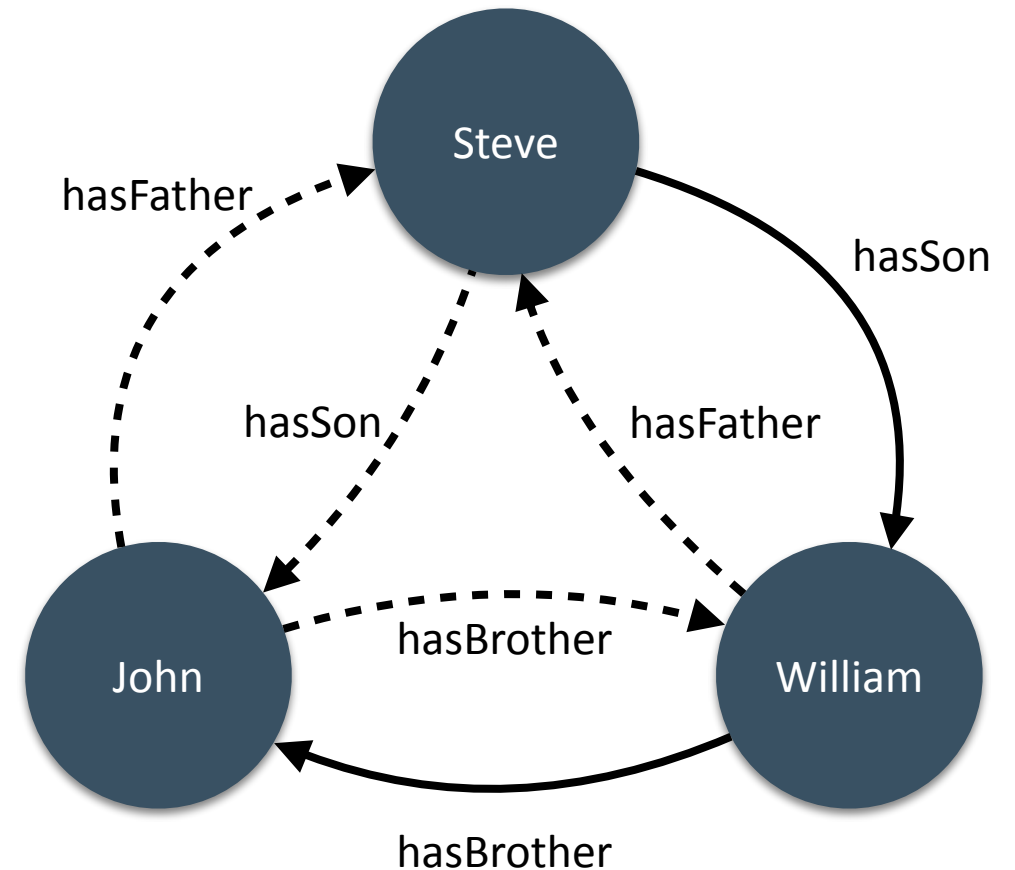
Nodes and Edges

Context can be modeled

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william hasFather steve
john hasFather steve
steve hasSon john

Property Assertions

hasBrother is symmetric
hasSon inverseOf hasFather
hasBrother asserts hasFather



Machine Learning

Predictions based on Prior Observation

Machine learning explores the construction and study of algorithms that can learn from and make predictions on data ([wikipedia](#))

Probabilistic based computer algorithms that make predictions about observed data based on previous experience



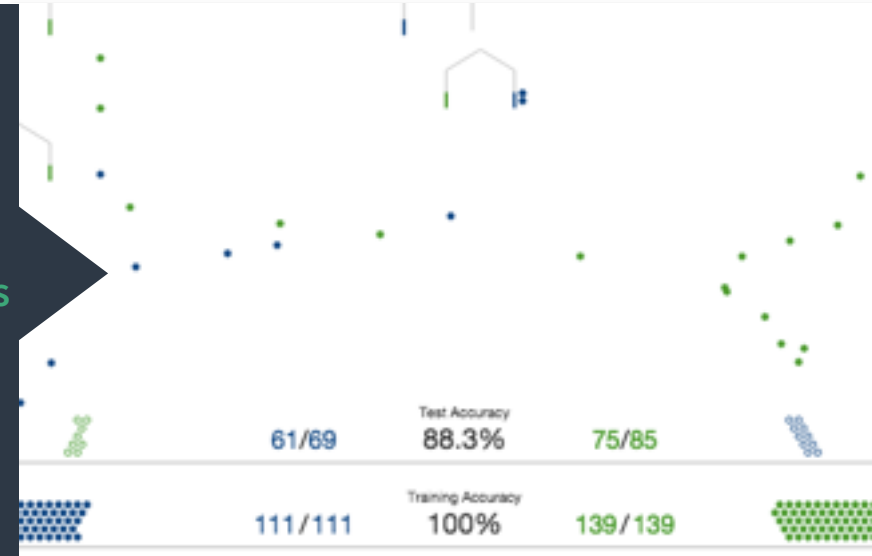
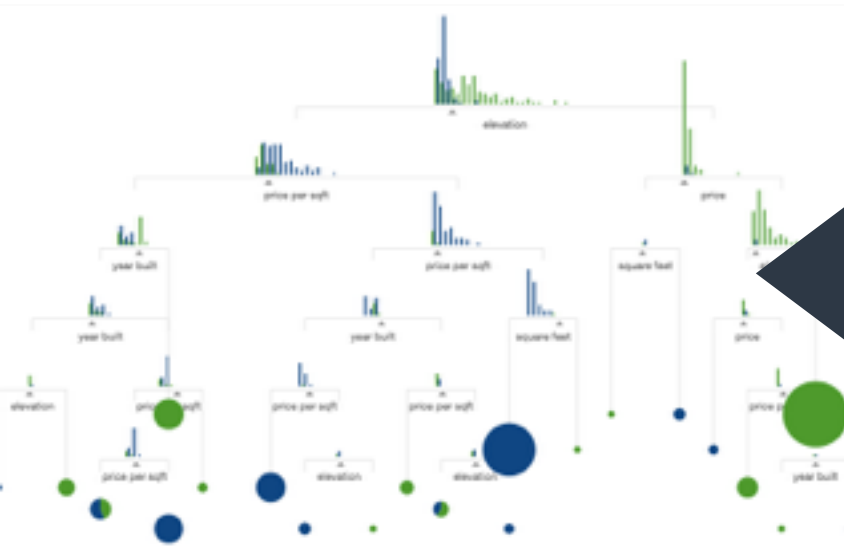
ML and Visualization

r2d3.us



Machine Learning through d3.js visualizations

d3.js is a javascript library used to build interactive data visualizations



Deep Learning

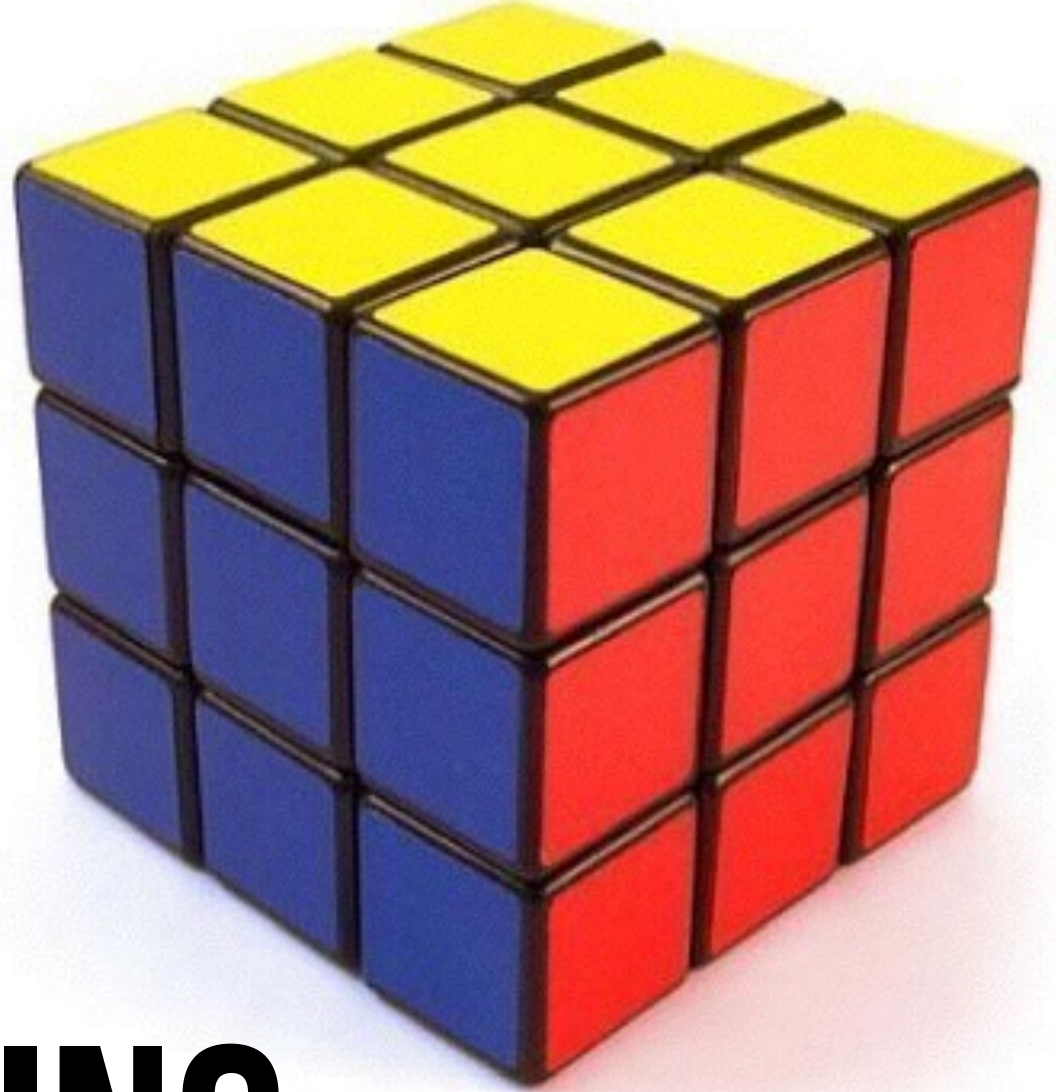
The data should help us determine the context

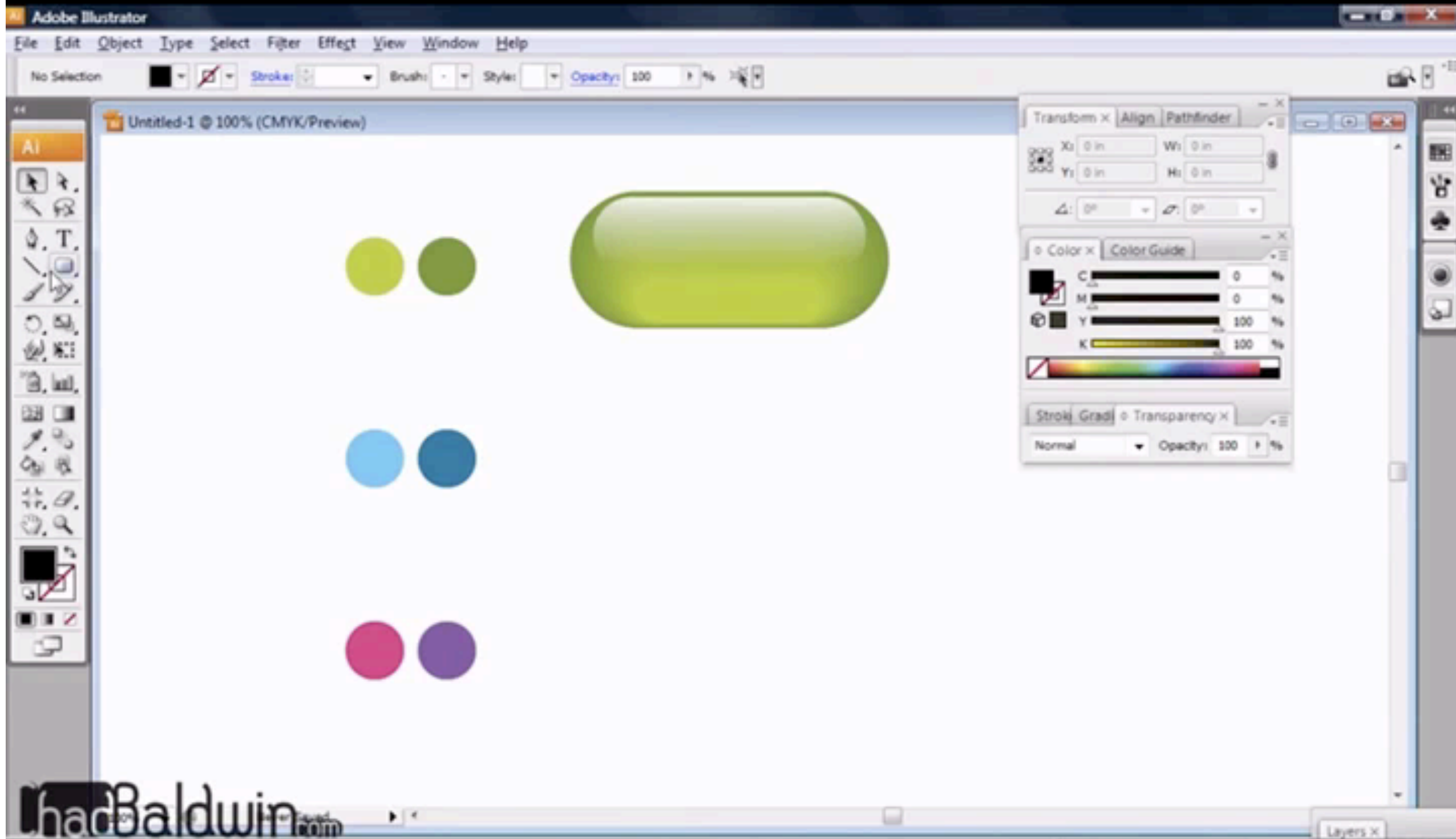


User Experience Design

UX designers specialize in performing research with users to determine **what** they are trying to do (not the **how**) and designing innovative solutions

**UX DESIGN IS
PROBLEM SOLVING**



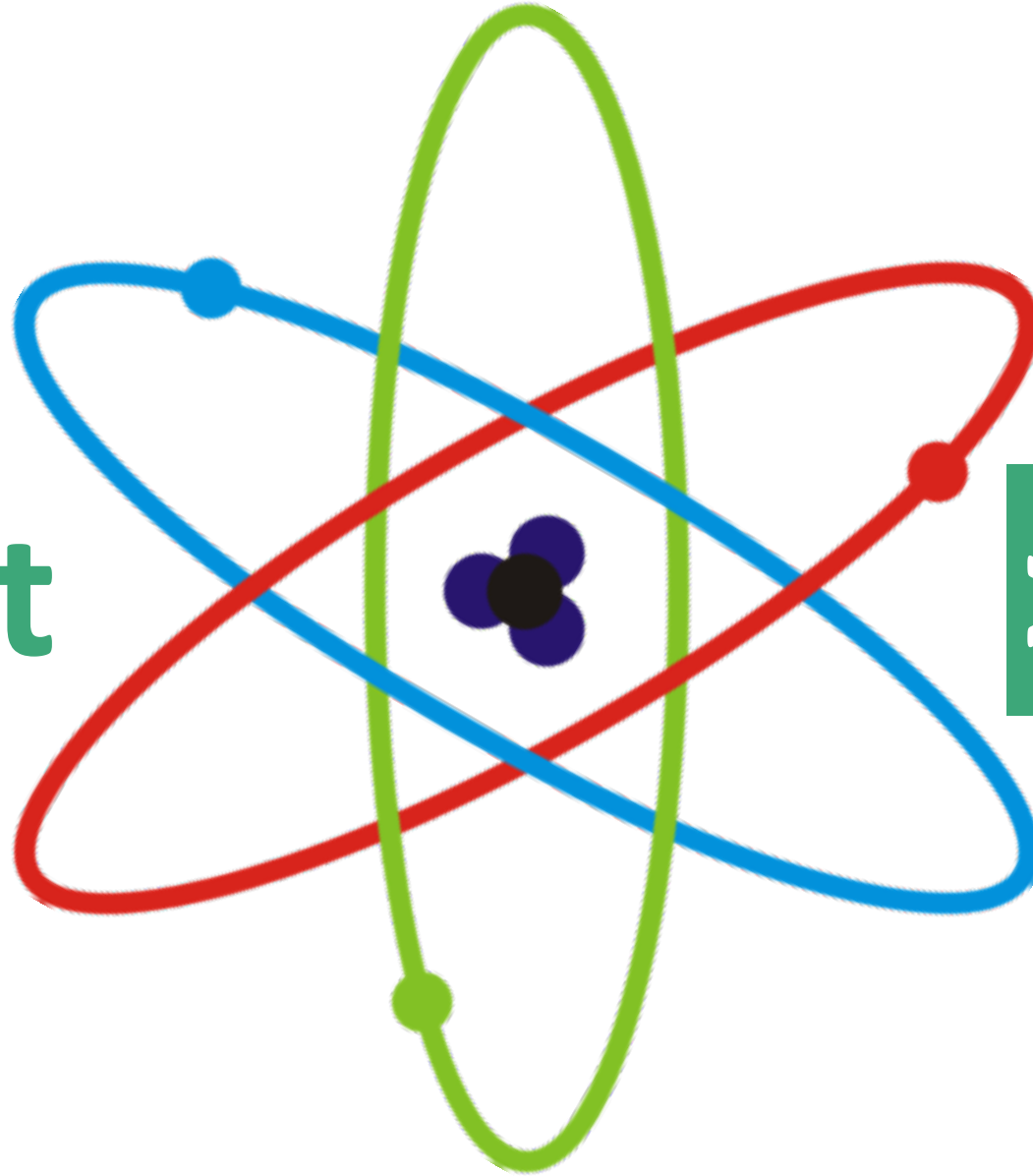


**UX DESIGNERS ARE
NOT PIXEL PUSHERS**

**MAXIMIZE KNOWLEDGE AND COMMON
UNDERSTANDING THROUGH DESIGN**



> Context



> Science

Ian Fleming

Director, Life Sciences
d-Wise

Brooklyn, NY
ian.fleming@d-wise.com



John Leveille

CEO
d-Wise

Morrisville, NC
john.levaille@d-wise.com

