



# Database

## THROWDOWN

NoSQL vs SQL

# Questions



DATABASE  
THROWDOWN

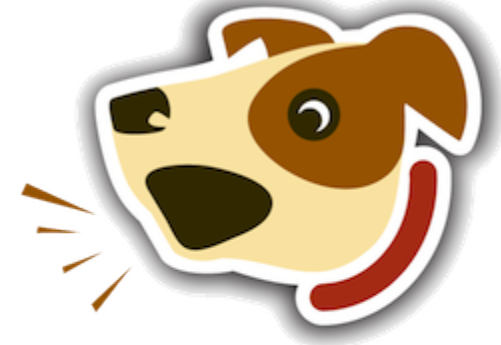
- Use SQL in Production?
- Use NoSql in Production?

# WHO AM I?

## DATABASE THROWDOWN

Tom Wilson

- Jack Russell Software
- CODECamp (BOOTcamp)
- 20+ years of Database Dev
- Have used both SQL and NoSQL in production
- @twilson63



**jack russell software**



**FALL 2013**

# **BOOTcamp**

## **1 DAY**

CODEcamp provides individuals of all skill levels with access to affordable training in modern Web and mobile software technologies.

## **Professional Developers**

One-day BOOTcamps for software industry professionals seeking ongoing education in current and trending technologies. Sessions to include advanced skills in Node.js, AngularJS and more.



**[chcodecamp.com](https://chcodecamp.com)**



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**What is SQL?**

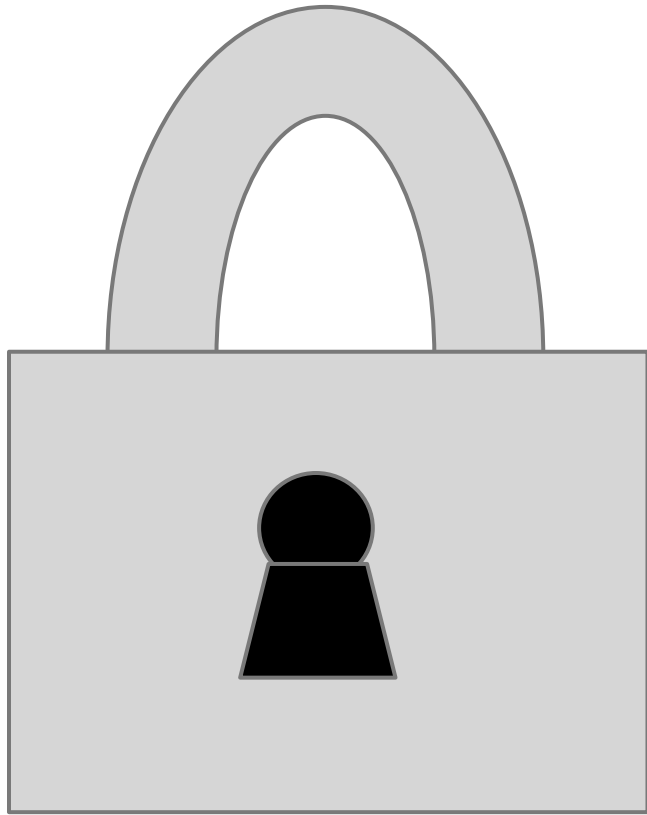
# SQL Database

- Relational Database  
(Mathematical Relationships)
- Structured Query Language
- Tables, Rows, Columns
- Indexes, Views, Stored Procedures
- 40 plus years of evolution
- Vertical Scaling
- Pre-Defined Schema
- Steep Learning Curve
- Administration Skillset (DBA)



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# Vendor Lockin



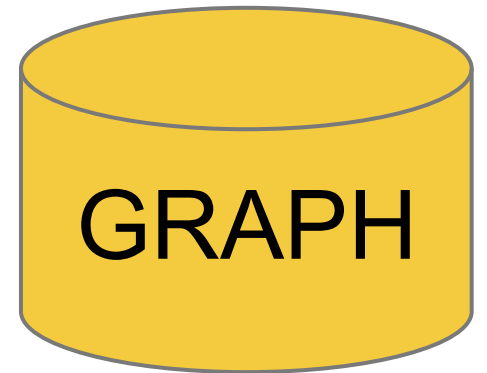
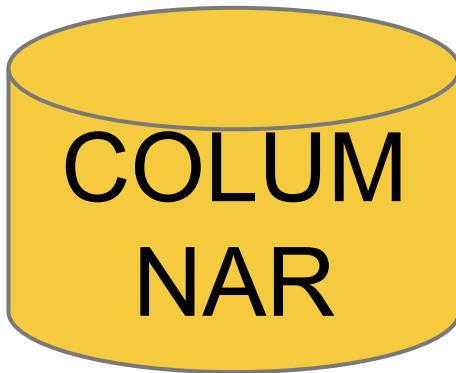
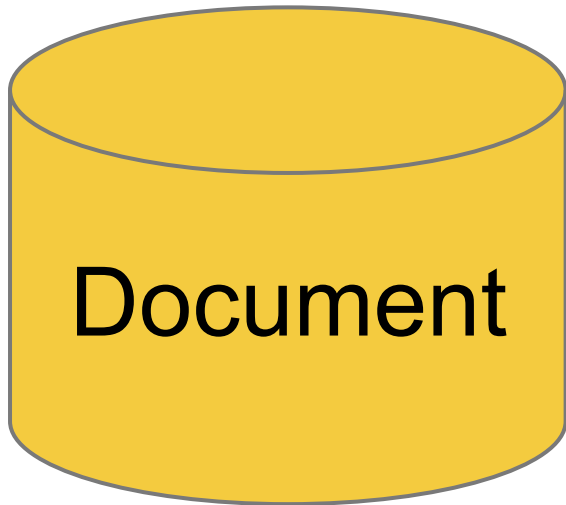
ORACLE®







# What is NoSQL



# Key Value

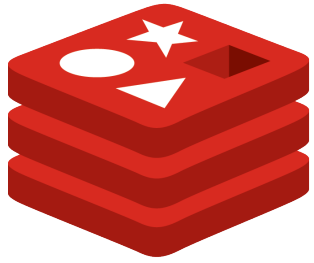
- Simple
- Fast
- 2 main types
- Horizontal Scale (Riak)
- Memory Cache (Redis)



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- Based on Dynamo Paper
- HTTP Interface
- Horizontal Scale
- Fault Tolerant
- Map/Reduce



# redis

A large, dark red, multi-pointed starburst graphic with a jagged, sunburst-like edge. It is positioned on the right side of the slide, partially overlapping the Redis logo and the main text area.

DATABASE  
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- Light and Compact
- Swiss Army Knife of Databases
- Transforming Data, Cache, or managing messages
- Key Strength is Speed
- Lists, Hashes, and Sets
- Database limited to RAM Availability

# Document

- Complex Data
- Schemaless
- Simple API
- Web and Cloud Friendly

## Examples

- MongoDB
- CouchDb



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mongoDB

A large, dark red starburst graphic with multiple points, centered on the right side of the slide. The text 'DATABASE THROWDOWN' is written in white, uppercase letters inside the starburst.

DATABASE  
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- Schemaless
- Ad-Hoc Queries
- Strong Driver Support
- Developer Friendly
- Large Clusters
- Great Gateway from ORM



## DATABASE THROWDOWN

- Built on philosophy networks are unreliable
- HTTP Interface
- Mobile to Big Data
- BigCouch introduces clustering
- Replication is CouchDb's best feature

# Columnar

- BigTable
- Columns are dynamic
- Versioning
- Consistency
- Horizontal Scale
- Great for logs
- Notable Implementations
  - HBase
  - Cassandra



DATABASE  
THROWDOWN



A large, dark red, multi-pointed starburst graphic with a jagged, sunburst-like shape. Inside the starburst, the words "DATABASE" and "THROWDOWN" are written in white, uppercase, sans-serif font, stacked vertically.

## DATABASE THROWDOWN

- Runs on top of Hadoop
- Versioning
- Compression
- 5 nodes at a minimum
- Usually part of a bigger system
- No sorting or indexing

# Graph

- A relatively new kind of database
- Data Relational
  - Node
  - Edge
- Deep Graph Queries are easy



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- Embedded to Big Data Scale
- Easy to add Data
- Walk Graph
- No Constraints
- Schemaless
- High Availability
- No Sharding

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# The Challenge



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**3 Use Cases**

## 3 Use Cases

- CRM
- CMS
- Social



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**Get Ready**  
to THROWDOWN!

**<http://td.twilson63.com>**



# CRM

- \* Multi-tenant
- \* Roles
- \* Responsibilities
- \* Moderate Write
- \* Heavy Read

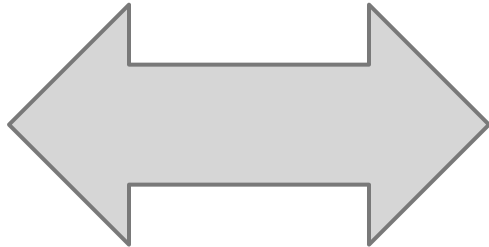


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**Best Choice?**

**DATABASE  
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SQL



NoSql

# If NoSql?

(KV, Document, Graph, or Columnar)

# CMS

- Heavy Read
- Low Writes
- Complex Structures
- Minimal Roles
- Multi-tenant

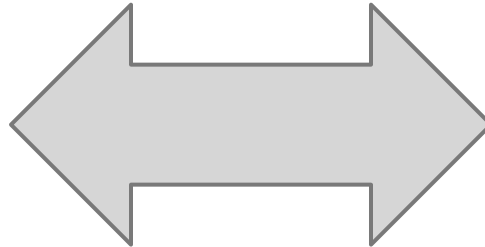


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**Best Choice?**

**DATABASE  
THROWDOWN**

SQL



NoSql

# If NoSql?

(KV, Document, Graph, or Columnar)

# Social

- Heavy Write
- Heavy Read
- Simple Roles
- Data Relationships
- Heavy Graph Walking
- Large User base

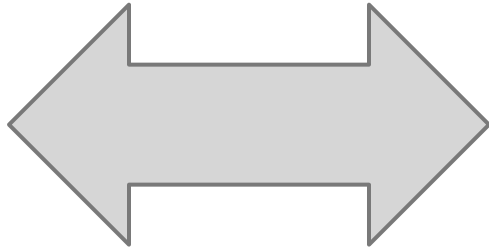


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**Best Choice?**

**DATABASE  
THROWDOWN**

SQL



NoSql



# If NoSql?

(KV, Document, Graph, or Columnar)

**Time to vote!**



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<http://td.twilson63.com>

**One more thing...**

# NoSql Poly Persistence

Combine NoSql  
datastores to work  
together

- \* Redis
- \* CouchDb (truth)
- \* Neo4j



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# Summary



## DATABASE THROWDOWN

- Use Cases
- Database Strengths
- Pick the right Database for the job
- Think about vendor lock-in
- Think about scale
- Think about developer skillset
- Play with every database you can



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**Questions?**



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**Results**

# DATABASE THROWDOWN

## Thank You



Want more: read  
**Seven Databases in Seven Weeks**

<http://pragprog.com/book/rwdata/seven-databases-in-seven-weeks>