

Let's talk about NoSQL Standard

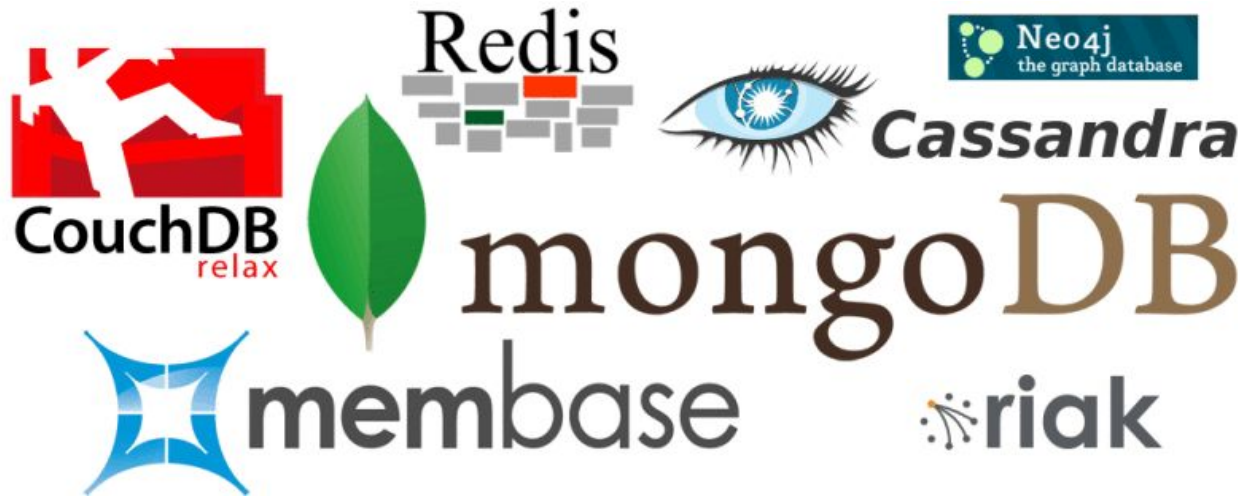
Otávio Santana
@otaviojava



NoSQL

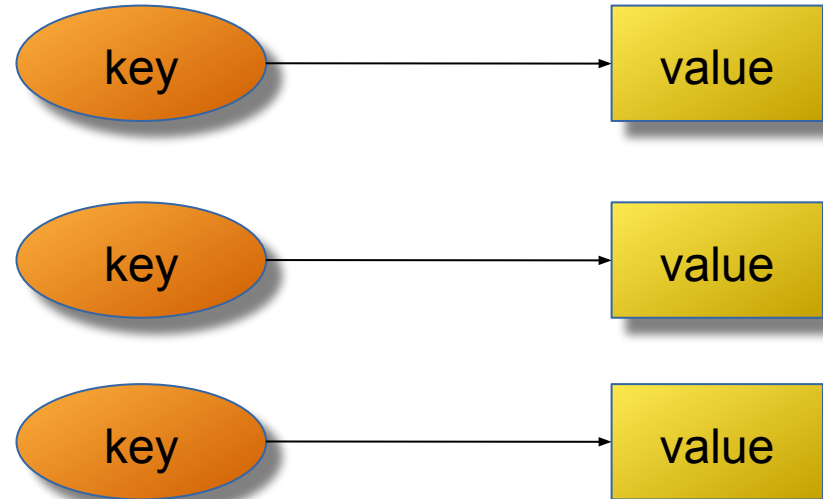
Not
Only SQL

- Database
- Doesn't use relationship
- BASE
- Five types



Key Value

- AmazonDynamo
- AmazonS3
- Redis
- Scalaris
- Voldemort
- Couchbase



Key Value

- American Express
- AT&T
- Bank of America

Table	Bucket
Row	Key/value pair
Column	---
Relationship	---

Document

- AmazonSimpleD
- ApacheCouchdb
- MongoDB
- Riak
- Couchbase

```
{
  "firstName": "John",
  "lastName": "Smith",
  "age": 25,
  "address": {
    "streetAddress": "21 2nd Street",
    "city": "New York",
    "state": "NY",
    "postalCode": "10021"
  },
  "phoneNumber": [
    { "type": "home", "number": "212 555-1234" },
    { "type": "fax", "number": "646 555-4567" }
  ]
}
```

Document

- MetLife
- BuzzFeed
- Ebay

Table	Collection
Row	Document
Column	Key/value pair
Relationship	Link

Column

- Hbase
- Cassandra
- Scylla
- Clouddata
- SimpleDb
- DynamoDB

Row-key	Columns...				
Apollo	<table border="1"> <tr><td>Duty</td></tr> <tr><td>Sun</td></tr> </table>	Duty	Sun		
Duty					
Sun					
Aphrodite	<table border="1"> <tr> <td>Duty</td> <td>Color</td> </tr> <tr> <td>{Love, happy}</td> <td></td> </tr> </table>	Duty	Color	{Love, happy}	
Duty	Color				
{Love, happy}					
Ares	<table border="1"> <tr> <td>Duty</td> <td>weapon</td> </tr> <tr> <td>War</td> <td>Sword</td> </tr> </table>	Duty	weapon	War	Sword
Duty	weapon				
War	Sword				
Kratos	<table border="1"> <tr><td>Dead Gods</td></tr> <tr><td>13</td></tr> </table>	Dead Gods	13		
Dead Gods					
13					

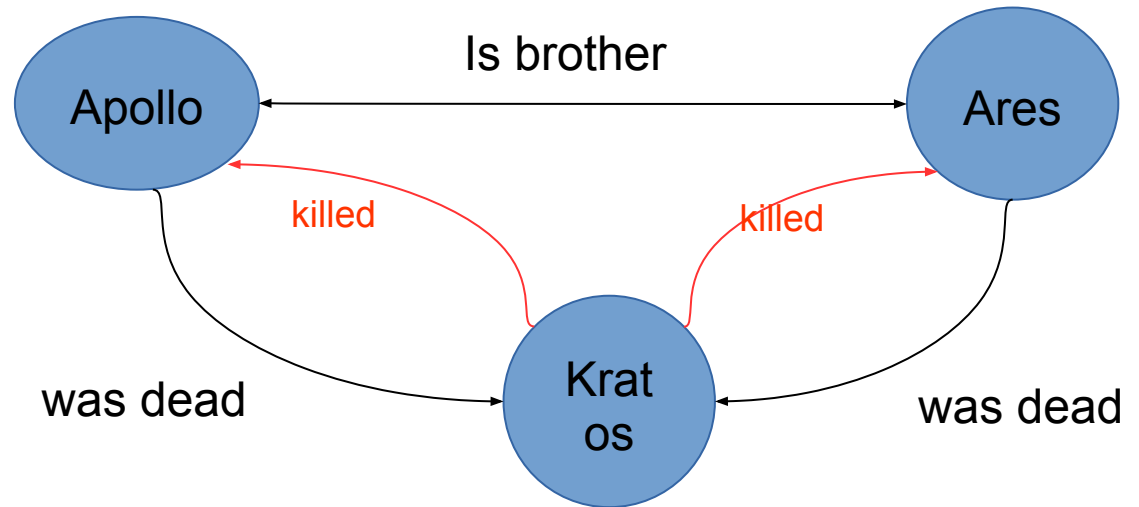
Column

- Github
- Netflix
- Reddit

Table	Column Family
Row	Column
Column	Key/value pair
Relationship	Not supported

Graph

- Neo4j
- InfoGrid
- Sones
- HyperGraphDB



Graph

- Walmart
- InfoJobs
- LinkedIn

Table	Vertex and Edge
Row	Vertex
Column	Vertex and Edge property
Relationship	Edge

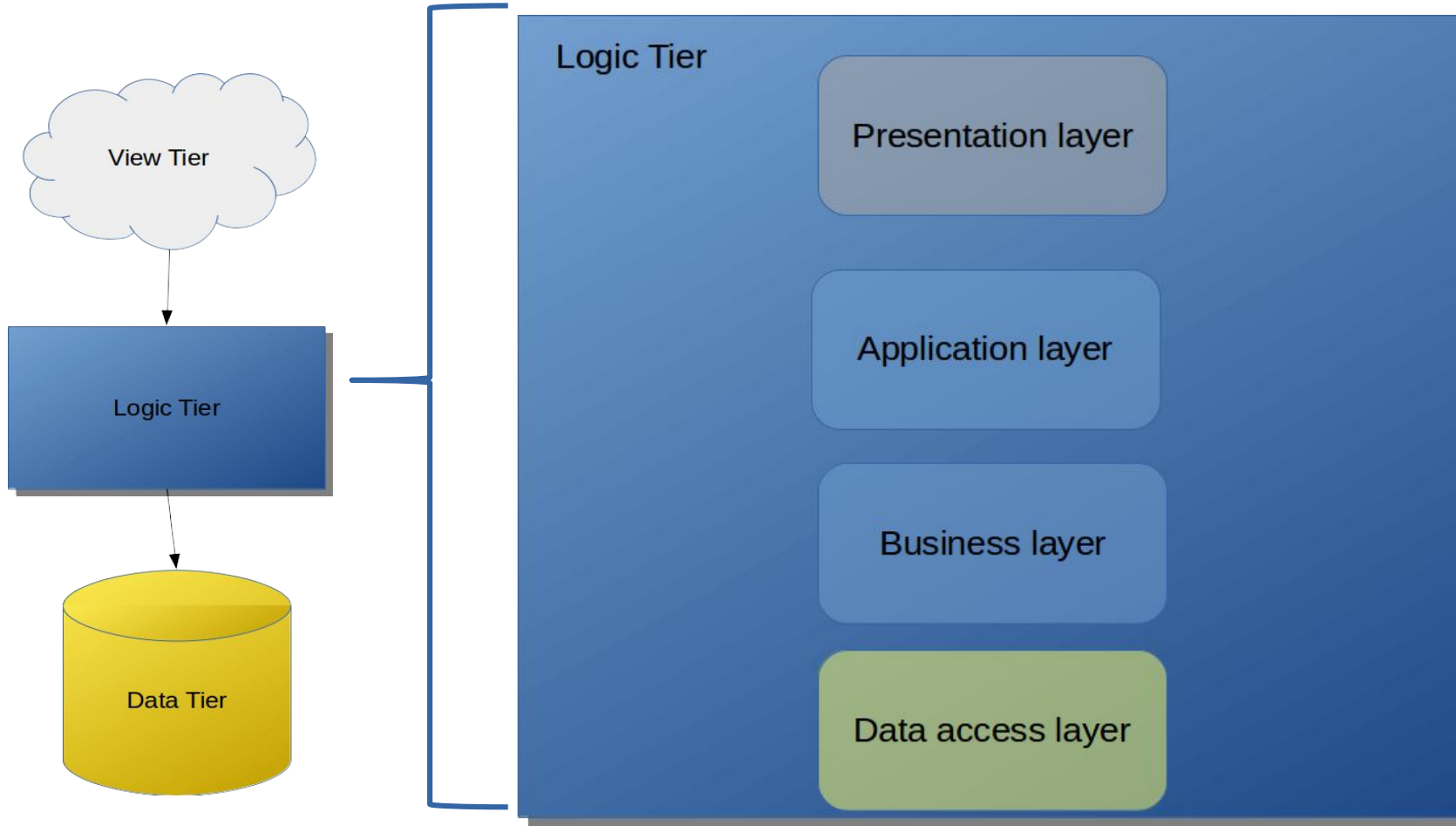
Multi-model

Not
Only SQL

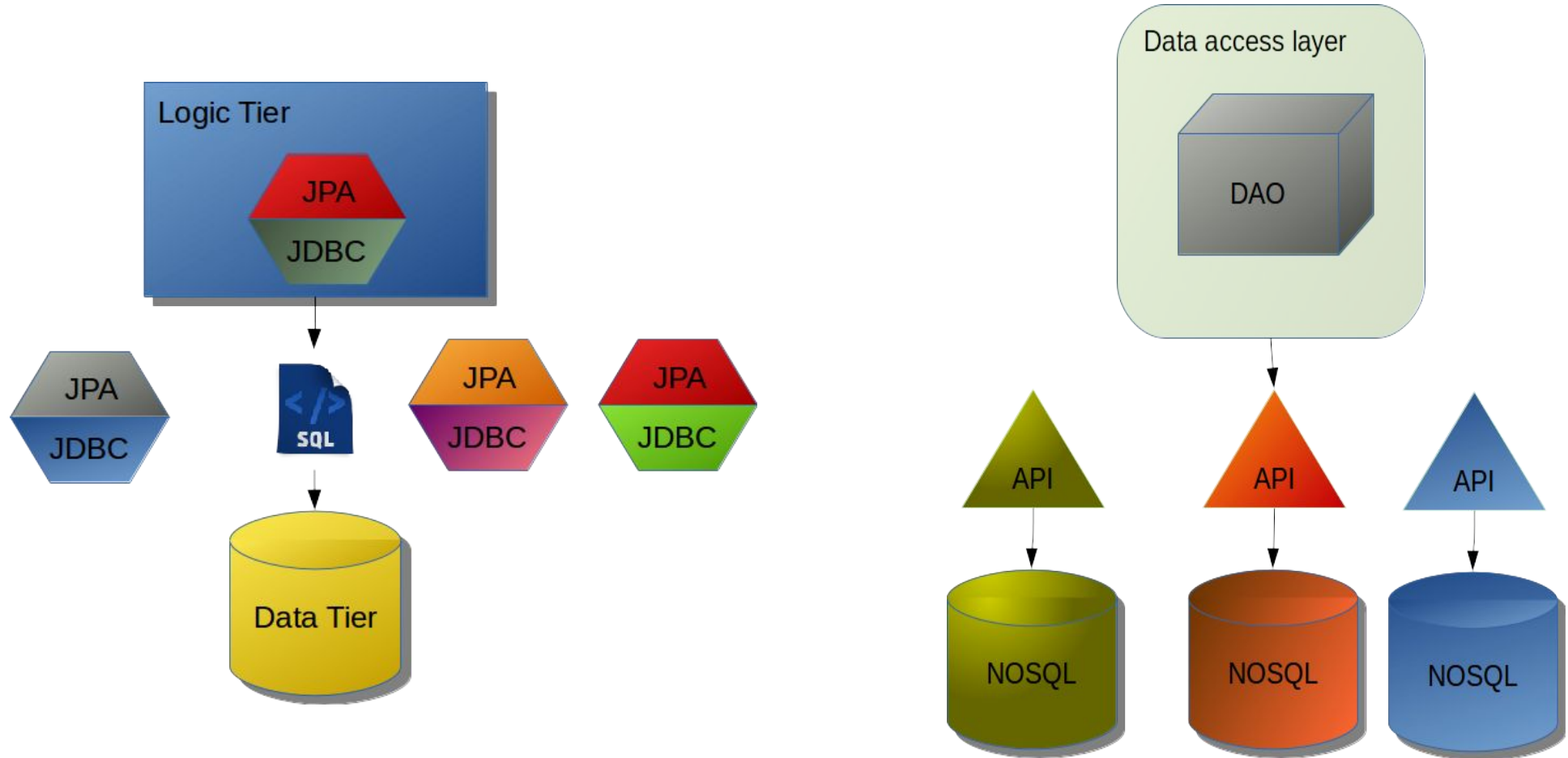
- OrientDB
- Couchbase
- Elasticsearch
- Cassandra



The Problem

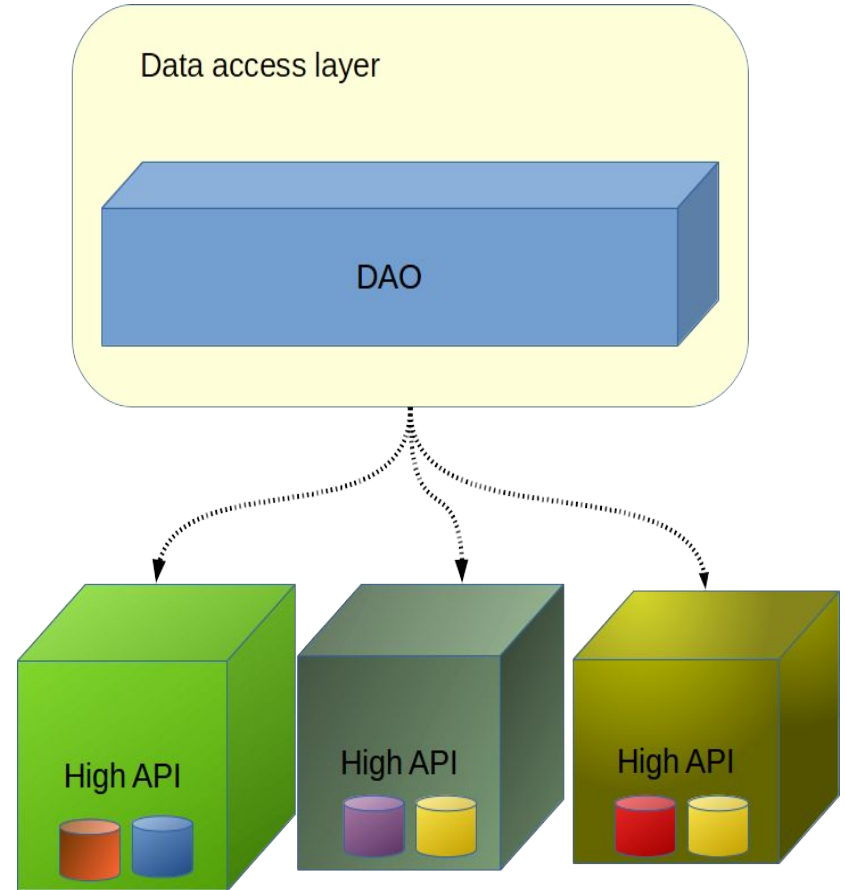


The Problem



The Current solution

- Spring Data
- Hibernate OGM
- TopLink



JPA problem

- Saves Async
- Async Callback
- TTL
- Consistency Level
- SQL based
- Diversity in NoSQL



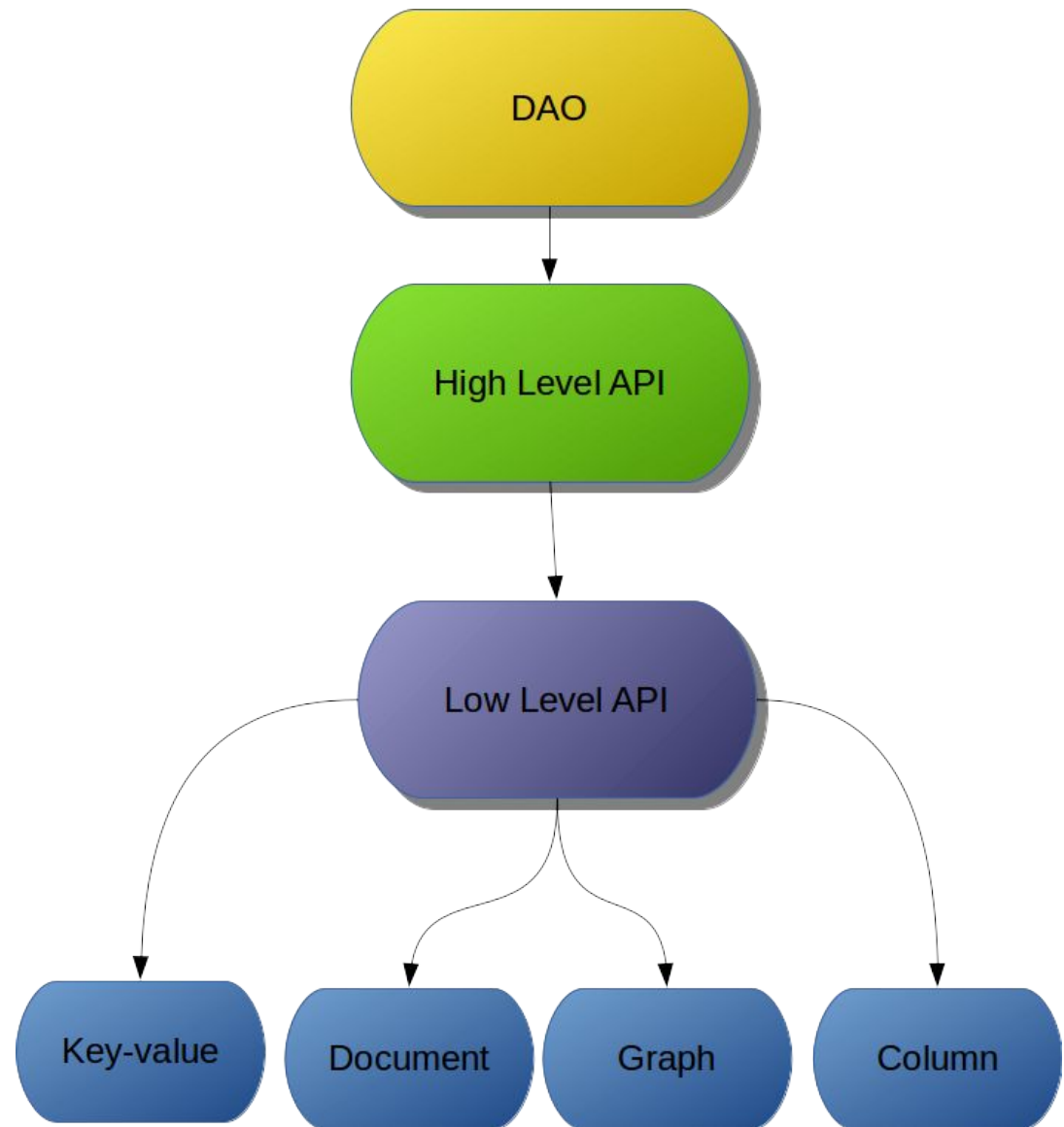
The Challenge

- 4 Types
- Different behaviors
- Different goals



The Solution

- SPI
- Communication
- No lock-in
- Split problems



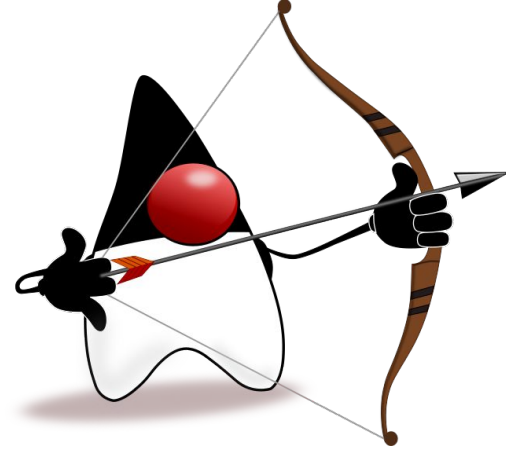
JNoSQL

- Several tools to make easy an integration between the Java Application with the NoSQL.
- Communication API
- Abstraction API



Diana

- API Communication layer
- Document, key-value, Column, Graph
- Universal Adapter
- Standard



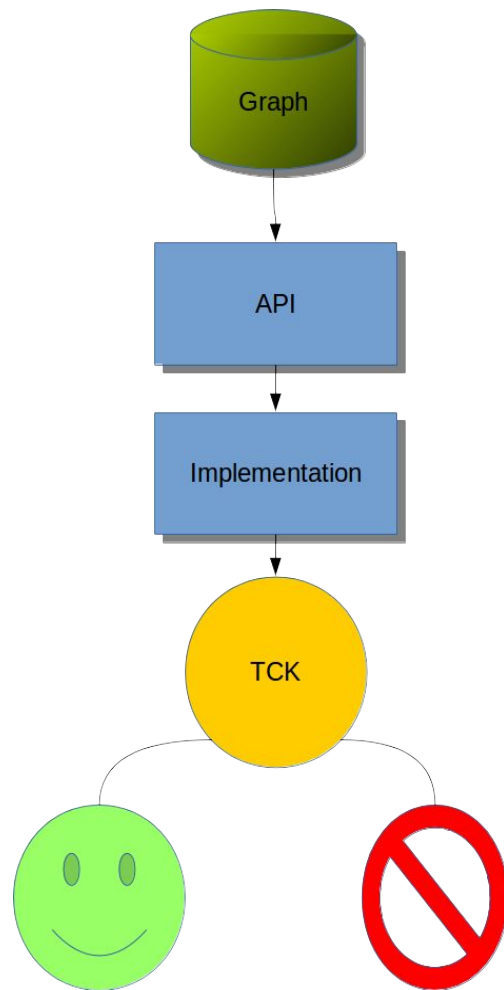
What Diana **is not**

- A new API to replace JPA
- A new API to abstraction layer
- Just one API communication to solve all kind of NoSQL database
- Be responsible to do integrations with other technologies such as CDI, EJB, Bean Validation, Spring, etc.

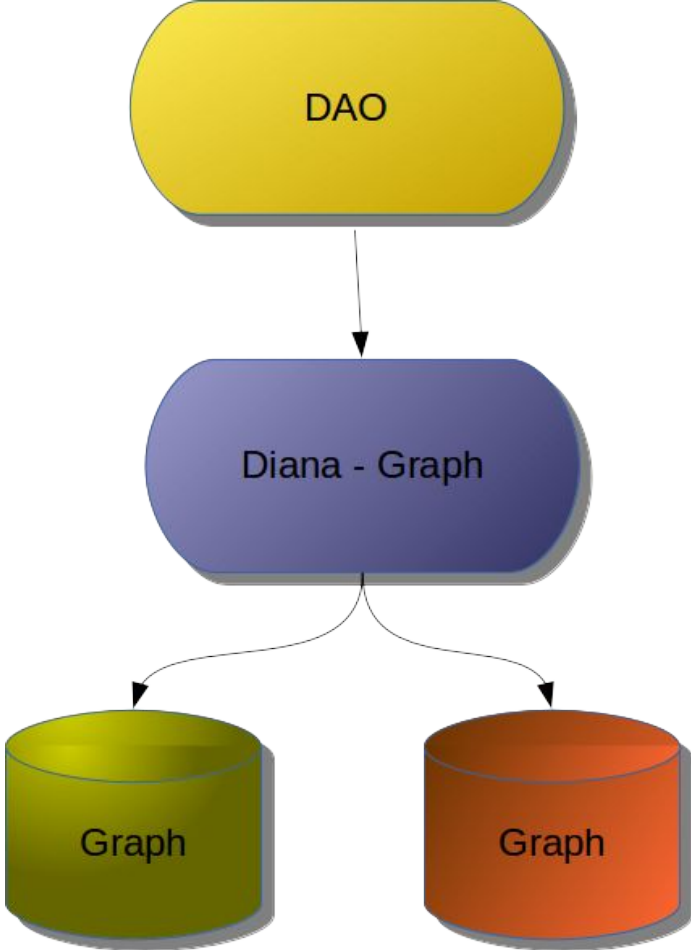
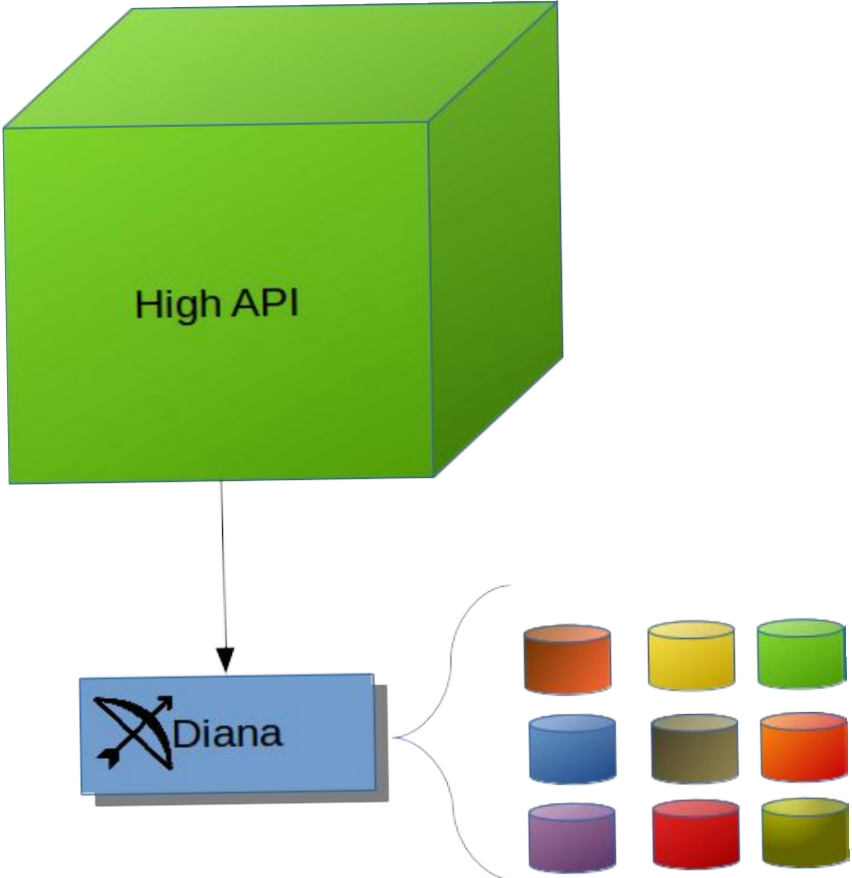


Diana Project

- Commons API
- Document API
- Graph API
- Key-value API
- Column API
- Four TCKs



Diana Project



Nomenclature

- Configuration
- Factory
- Manager
- Entity
- Value



Diversity



```
ColumnEntity entity = ColumnEntity.of(COLUMN_FAMILY);  
Column id = Column.of("id", 10L);  
entity.add(id);  
entity.add(Column.of("version", 0.001));  
entity.add(Column.of("name", "Diana"));  
entity.add(Column.of("options", Arrays.asList(1, 2, 3)));
```

//both implementation

```
columnEntityManager.save(entity);  
ColumnQuery query = ColumnQuery.of(COLUMN_FAMILY);  
query.addCondition(ColumnCondition.eq(id));  
Optional<ColumnEntity> result = columnEntityManager.singleResult(query);
```



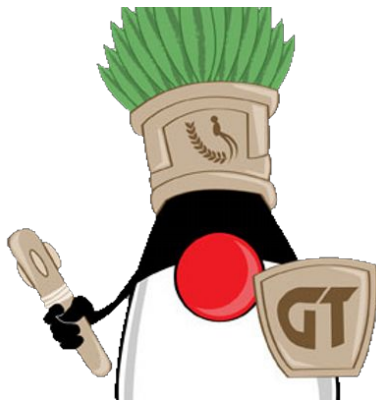
//cassandra implementation

```
List<ColumnEntity> entities = columnEntityManagerCassandra  
.cql("select * from newKeySpace.newColumnFamily where id=10;");  
columnEntityManagerCassandra.save(entity, ConsistencyLevel.ALL);
```


NoSQL Providers

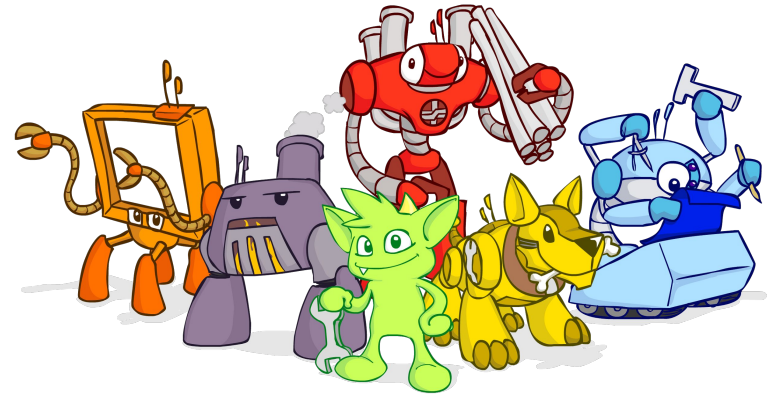


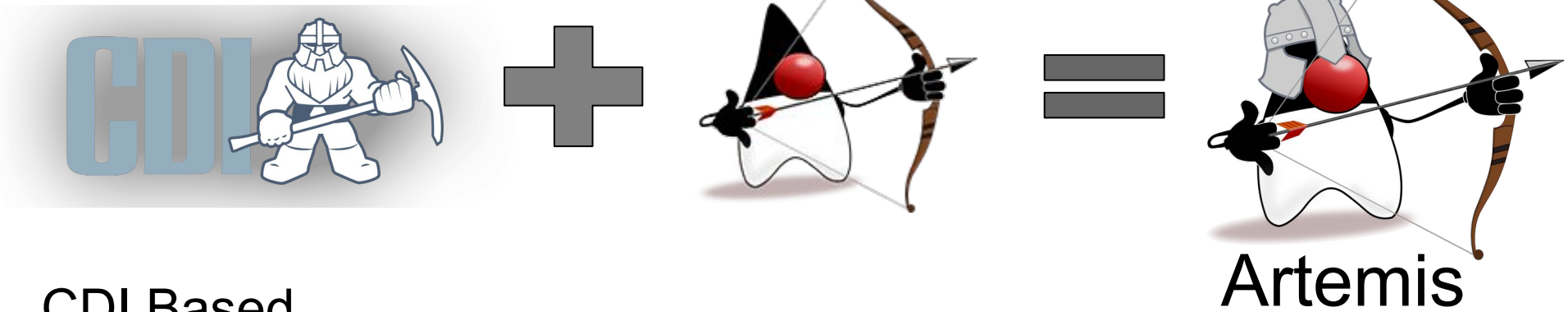
JUGs/Communities



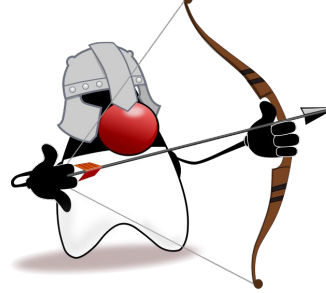
Graph API

- Apache TinkerPop
- Apache Project
- 12 Graph databases
- Most stable code
- Adapter layer





- CDI Based
- Diana Based
- Annotation Based
- Events to insert, delete, update
- Supports to Bean Validation
- Configurable and extensible



Annotations

- MappedSuperclass
- Entity
- Column

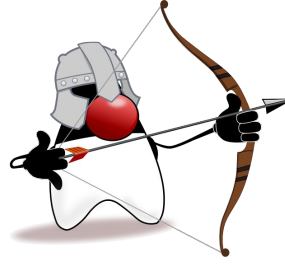
```
@Entity("movie")  
public class Movie {
```

```
@Column  
private String name;
```

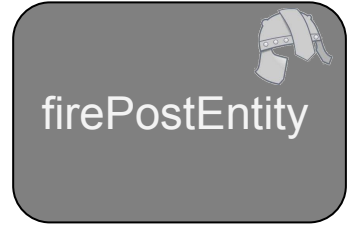
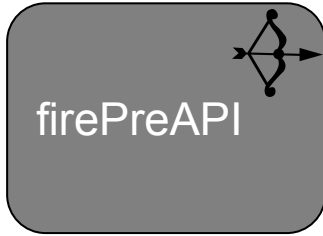
```
@Column  
private long year;
```

```
@Column  
private Set<String> actors;
```

Events



Movie



Interceptor

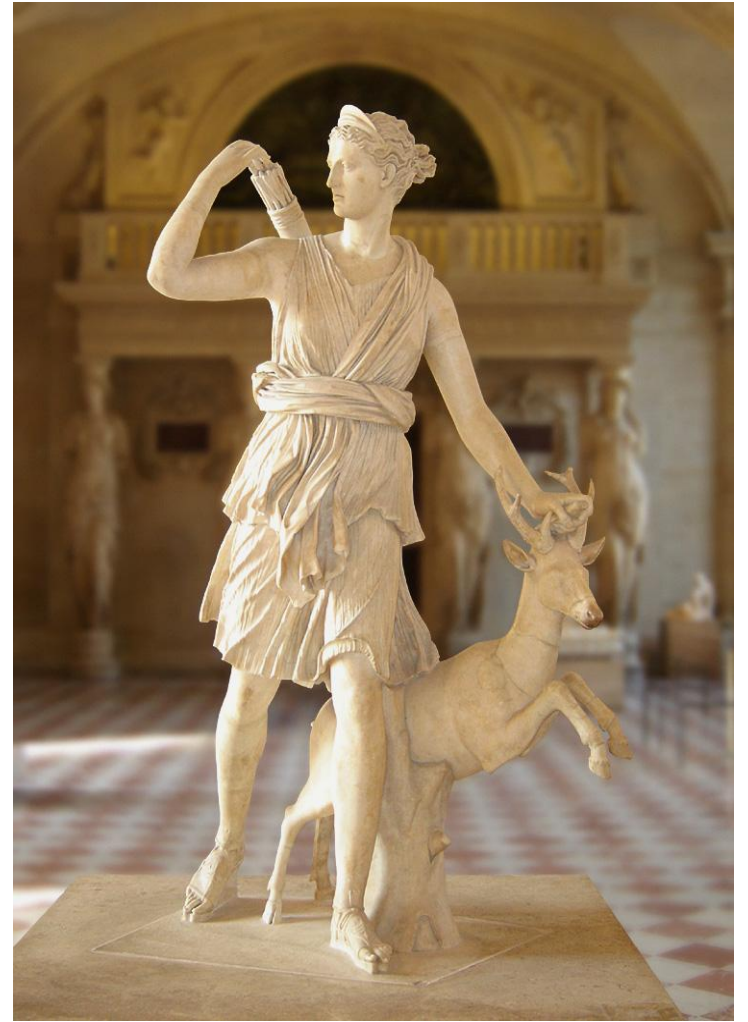
Configurable and extensible

- EventManager
- CrudOperation
- ClassRepresentations
- Converter
- Decorate
- Replace



Why Diana?

- Goddess of the hunt, nature and moon
- Fought in Troy
- brave warrior and hunter



Road Map

- Draft and code Proposal
- Community Feedback
- Involve NoSQL Vendors
- Involve Solution Vendors
- Eclipse Project
- Development
- JSR



Site



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Diana

Apache Diana is a flexible and extensible API to connect NoSQL databases. It brings an easy interface to support key-value, column family, document oriented and graph databases as JDBC does for SQL databases.

[View on GitHub](#)

<http://jnosql.org/>



Diana

A flexible and extensible API to connect NoSQL databases

<https://nosql.github.io/diana-site/>

Repositories

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diana

Java ★ 1 📄 5

Diana is a flexible and extensible API to connect NoSQL databases. It brings an easy interface to support key-value, column family, document oriented and graph databases as JDBC is for SQL databases.

Updated 2 hours ago

diana-site

★ 0 📄 2

Diana is a flexible and extensible API to connect NoSQL databases. It brings an easy interface to support key-value, column family, document oriented and graph databases as JDBC is for SQL databases.

Updated 5 days ago

diana-book

★ 0 📄 1

Diana is a flexible and extensible API to connect NoSQL databases. It brings an easy interface to support key-value, column family, document oriented and graph databases as JDBC is for SQL databases.

Updated 5 days ago

diana-demos

Java ★ 0 📄 1

Diana examples code

Updated 7 days ago

Code



<https://github.com/JNOSQL>

Mailing List



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<https://dev.eclipse.org/mailman/listinfo/jnosql-dev>

Mailing List



JNOSQL/developers

Once it finished we can go to Eclipse foundation step.

sahilbucha @sahilbucha
Hello everyone.

Otávio Santana @otaviojava
Hello how is going?
Welcome

Right now, we submitted the proposal to eclipse foundation and waiting for some response.
Basically, we're waiting and revving the API and the code of this API.
Thank you for join us and all help that you can give us, it'll nice too.

sahilbucha @sahilbucha
It's going good. Thanks Otavio

Werner Keil @keilw
Hi,
which one, the one from Brazil (Michael Santos)?
Support for all kinds of custom types, whether it's Date/Time (Joda, JSR 310), Money (JSR 354) or Units and Quantities (JSR 363, Karen once created a project for Hibernate/JPA support when it was still 275) etc. is a good and necessary thing to have.

Otávio Santana @otaviojava
Yes, the spec lead Michal Santos
Yes, basically the converter is loaded by service loader.
Just as plugin

Werner Keil @keilw
Keep in mind, if it was accepted by Eclipse, other forms of service discovery like OSGI are also relevant (see JSRs like 363 where ServiceLoader is the default but a custom ServiceProvider may override that and use OSGI or something else.

Otávio Santana @otaviojava
Ok.

avbravo @avbravo
good nigh

Otávio Santana @otaviojava
Good morning

Fernando Almeida @almeidaah
Hi everyone

Otávio Santana @otaviojava
Hello everyone
welcome

Fernando Almeida @almeidaah
ty

Otávio Santana @otaviojava
https://bugs.eclipse.org/bugs/show_bug.cgi?id=508617
You're almost done the paperwork process

Otávio Santana @otaviojava
Project has been approved: <https://projects.eclipse.org/proposals/jnosql>
Congrats guys
Soon as possible we gonna have a email list

Otávio Santana @otaviojava
Yes, we finally have a email list: to discussion: <https://dev.eclipse.org/mailman/listinfo/jnosql-dev>

Oct 18 2016 11:47
Oct 18 2016 12:52
Oct 18 2016 13:00
Oct 18 2016 13:57
Oct 18 2016 14:00
Oct 18 2016 15:15
Oct 18 2016 15:18
Nov 02 2016 21:19
Nov 03 2016 07:46
Dec 05 2016 10:39
Dec 05 2016 11:50
Dec 05 2016 12:09
Dec 28 2016 18:07
Jan 05 21:09
Jan 06 11:44

PEOPLE
ADD DETAILS

ACTIVITY
We haven't seen any activity yet.
Configure your integrations →

<https://gitter.im/JNOSQL/developers>

Thank you

Otávio Santana

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osantana@tomitribe.com

otaviojava@apache.org

