Relating Common SQL Concepts and Semantics to MongoDB



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Agenda



Relational SQL vs Document DB

- Concepts
- Semantics

An Important Question



Relational SQL vs Document DB

MySQL

Structured Query Language (SQL)

Predefined schema

Relational keys (foreign key)

Triggers

ACID properties

Vertically scalable

MongoDB

MongoDB Query Language (MQL)

Dynamic schema (JSON based)

No foreign key

No triggers

CAP theorem

Horizontal scalable



SQL Terms vs MongoDB Terms

SQL Terms	MongoDB Terms
Database	Database
Table	Collection
Row	Document
Column	Field
Index	Index
Table joins	\$lookup
Primary key	Primary Key
Transactions	Transactions



Create Table vs Create Collection

Semantic Comparison

MySQL

```
CREATE TABLE user (
    id MEDIUMINT NOT NULL
        AUTO_INCREMENT,
    name varchar(50),
    age int,
    PRIMARY KEY (id)
```

```
db.createCollection("user")

db.user.insertOne({
    name: "John Smith",
    age: 42
})
```

Add Columns - Add Fields

Semantic Comparison

MySQL

ALTER TABLE user

ADD email varchar(100)

Create Index Statement

Semantic Comparison

MySQL

```
CREATE INDEX
    idx_user_name_age
ON_user(name, age DESC)
```

```
db.people.createIndex(
  { name: 1, age: -1 }
)
```

Insert Statement

Semantic Comparison

MySQL

```
INSERT INTO user (name, age,
        email)

VALUES ('Roger', 46,
        'roger@email.com')
```

Select Statement

Semantic Comparison

MySQL

SELECT *

FROM user

MongoDB

db.user.find()

db.user.find({})

Select Statement - Filter

Semantic Comparison

MySQL

SELECT name, age

FROM user

WHERE age > 20

Select Statement - Advanced

Semantic Comparison

MySQL

```
SELECT name, age
```

FROM user

WHERE age > 20

LIMIT 5

SKIP 10

Update Statement

Semantic Comparison

MySQL

```
UPDATE user

SET email = 'NA'

WHERE age < 18
```

Delete Statement

Semantic Comparison

MySQL

DELETE FROM user

WHERE age < 18

Delete ALL Statement

Semantic Comparison

MySQL

DELETE FROM user

MongoDB

db.user.deleteMany({})

Drop Table - Drop Collection

Semantic Comparison

MySQL

DROP TABLE user

MongoDB

db.user.drop()

Relational SQL or Document Database?



MySQL or MongoDB?



Three Important Questions



Is your data structured or unstructured?



What is your scalability strategy for infrastructure?



How comfortable are your devs with Object Relational Mapping?



Contact Me



Pluralsight discussion form pinal@sqlauthority.com



Thank You!

