MongoDB

A NoSQL DB Story

@DeLongShot

Developer, Elevator Up

Why MongoDB?

Overview

"Whereas SQL is about normalizing the storage of data and then flexibly querying it, NoSQL is about thinking how you will query data and then flexibly storing it."

John Nunemaker

GitHub, Gauges, Speaker Deck, Harmony App

Fun

NoSQL!
Schema-less
(Can be) Very Fast
>> Writes
>> Reads
Scaling

Joins
ACID transactions
NoSQL

Not So Fun

What is MongoDB?

Document-based

BSON

```
{
    Name: "John Doe",
    Age: 35,
    Twitter: "@johndoe"
}
```

Collections

Not Tables

```
db.users
{
    Name: "John Doe",
    Age: 35,
    Twitter: "@johndoe"
},
{

    Name: "Jane Doe",
    Age: 27,
    Twitter: "@janedoe"
}
```

SQL Terms/Concepts	MongoDB Terms/Concepts
database	database
table	collection
row	document or BSON document
column	field
index	index
table joins	embedded documents and linking
primary key Specify any unique column or column combination as primary key.	primary key In MongoDB, the primary key is automatically set to the _id field.
aggregation (e.g. group by)	aggregation pipeline See the SQL to Aggregation Mapping Chart.

Embedded Documents

```
{
    Name: "John Doe",
    Age: 35,
    Twitter: "@johndoe",
    address:
        {
            street: "5555 Lane Rd"
            city: "Wonderland"
            zip-code: 55555
        }
}
```

Mongo Shell

```
$: mongo
  > use rug
  > rug.admins.insert({name: "John Doe"})
  > rug.admins.find()
  > {_id: 1231232, name: "John Doe"}
  > rug.admins.find().count()
  > 1
```

MongoDB and Ruby

gem install mongo
gem install bson

Ruby Driver

ODMs in a ORM World

High-level modeling functions
    > Validations
    > Associations

Gems

MongoMapper   *MongoODM*
Mongoid   *MongoModel*
Mongomatic

Mongoid

gem 'mongoid'

Associations
embedded_in
embeds_many
has_many
belongs_to

Columns
field

Embedded v. Linking

Embedded
    Use "embeds_in"
    Included in one query

Linking
    Use "has_many"
    Reference to parent in foreign key
    Requires another query

When to use?

Embedded
    When children are finite/more certain
    number

Linking
    Unsure of number of children

```ruby
class Quiz
  includes Mongoid::Document

  field :name

  has_many :results
  embeds_many :questions
end
```

```ruby
class Question
  includes Mongoid::Document

  field :question_number
  field :copy

  embedded_in :quiz
  embeds_many :answers
end
```

```ruby
class Answer
    includes Mongoid::Document

    field :copy

    embedded_in :question
end
```

```
#one query
quiz = Quiz.find(1)


quiz.questions
>> returns questions []


question = questions.first
>> returns question


answers = question.answers.first
>> returns answer
```

More Information

Mongodb.org
MongoTips.com

Questions?