Modelando Document Model – Além do no Join

Quem sou eu…

```
{
        “nome”: “Leandro Domingues”,
        “tecnologias”: [
                {
                        “nome”: “MongoDB”,
                        “titulo”: [ “Ambassador”, “Evangelist”]
                }
        ],
        “titulos”: [
                “Microsoft Data Platform MVP”,
                “MongoDB Certified Trainer”,
                “MongoDB Certified Developer”,
                “Senior Software Consultant”,
                “Community Manager”,
                “Speaker”,
                “Founder at Cluster Consultoria”,
                “Head of NoSQL Solutions at Dataside”
        ],
        “contatos”: [
                {“linkedin”: https://www.linkedin.com/in/leandro-domingues/”}
                {“twitter”: “@delbussoweb”}
                {“e-mail”: leandro@clusterconsultoria.com}
        ]
}
```

Contatos

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Agenda

Data Modeling

Schema Design

Benefits of Embedding

When to Denormalize

Living without Constraints

Living without Transactions

One-to-One Relationships

One-to-Many Relationships

Many-to-Many Relationships

{ FRIENDS DON’T LET REAL FRIENDS USE RELATIONAL DATABASES }

Data Modeling

Balancing

- Needs of the application
- Performance characteristics of the database engine
- Data retrieval patterns

Consider

- Application usage of the data
    - Queries, updates, and processing of the data

Flexible Schema

- The documents in a single collection do not need to have the same of fields and the data type for a field can differ across documents within a collection
- To change the structure of the documents in a collection, such as add new fields, remove existing fields, or change the field values to a new type, update the documents to the new structure

Embedded Data

```
{
  _id: <ObjectId1>,
  username: "123xyz",
  contact: {
             phone: "123-456-7890",
             email: "xyz@example.com"
           },
  access: {
             level: 5,
             group: "dev"
           }
}
```

Embedded sub-document

Embedded sub-document

When to Denormalize

- One-to-One
- One-to-Many
- Many-to-Many

Live without Constraints

Live without Constraints

```
{
    "_id": 1000,
    "title": "Title of post",
    "body": "Body of post",
    "author": "Author of post",
    "date": ISODate("2019-04-11T22:22:22.222Z"),
    "comments": [
        {
            "author": "Author of comment",
            "authorEmail": "email@email.com",
            "date": ISODate("2019-04-11T22:22:22.222Z")
        },
        {
            "author": "Author of comment 2",
            "authorEmail": "email@email.com",
            "date": ISODate("2019-04-11T22:22:22.222Z")
        }
    ],
    "tags": [
        "modeling",
        "nosql",
        "mongoDB"
    ]
}
```

Live without Transactions

1

Restructure

2

Implement in Software

3

Tolerate

Living with Transactions – 4.0!

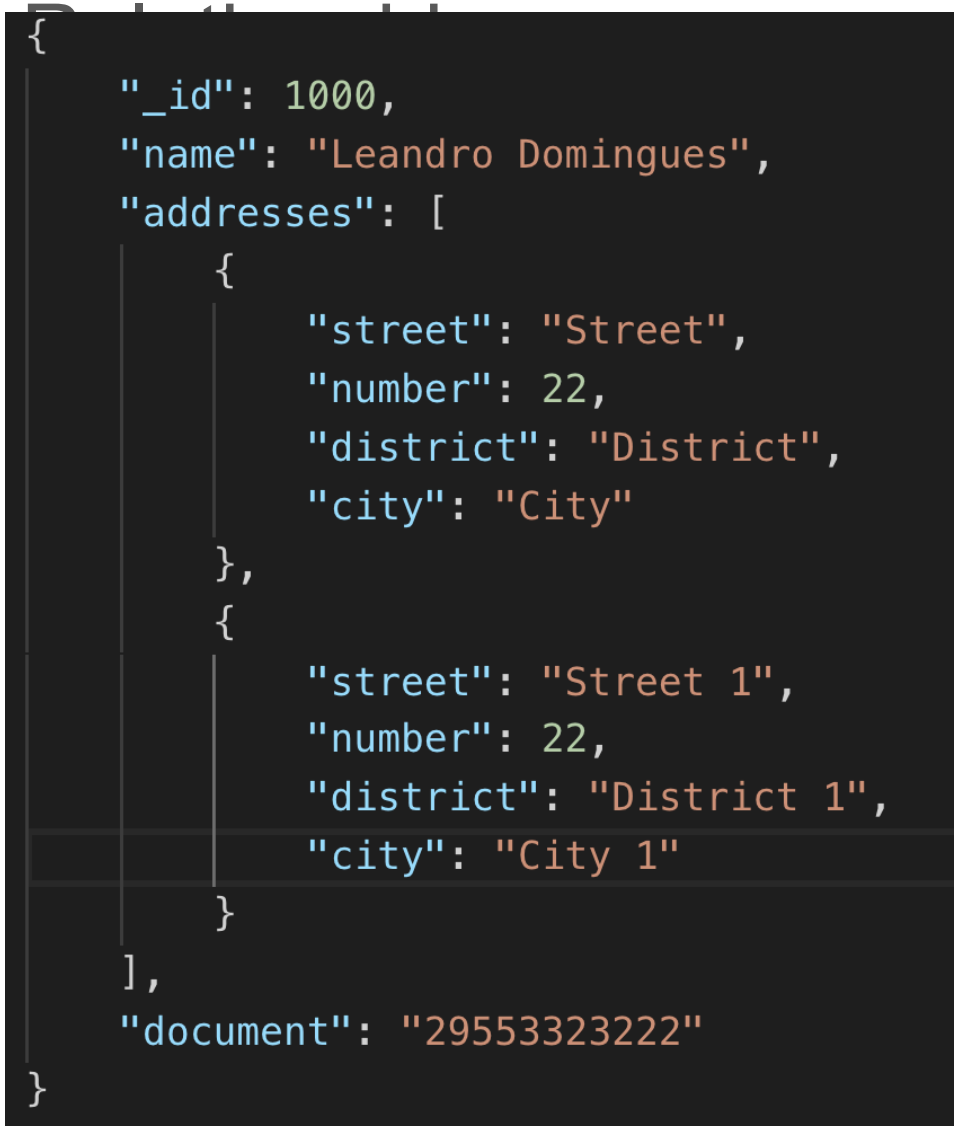
IMPORTANT:

In most cases, multi-document transaction incurs a greater performance cost over single document writes, and the availability of multi-document transaction should not be a replacement for effective schema design. For many scenarios, the denormalized data model (embedded documents and arrays) will continue to be optimal for your data and use cases. That is, for many scenarios, modeling your data appropriately will minimize the need for multi-document transactions.

One-to-One Relationship

```
{
    "_id": 1000,
    "name": "Leandro Domingues",
    "address": {
        "street": "Street",
        "number": 22,
        "district": "District",
        "city": "City"
    },
    "document": "29553323222"
}
```

One-to-Many



```
{
    "_id": 1000,
    "name": "Leandro Domingues",
    "addresses": [
        {
            "street": "Street",
            "number": 22,
            "district": "District",
            "city": "City"
        },
        {
            "street": "Street 1",
            "number": 22,
            "district": "District 1",
            "city": "City 1"
        }
    ],
    "document": "29553323222"
}
```

Many-to-Many Relationship

```
{
    "_id": 1,
    "name": "Author 1",
    "books": [1, 2]
}
{
    "_id": 2,
    "name": "Author 2",
    "books": [2]
}
```

```
{
    "_id": 1,
    "title": "Book 1",
    "categories": ["drama"],
    "authors": [1, 2]
}
{
    "_id": 2,
    "title": "Book 2",
    "categories": ["scifi"],
    "authors": [1]
}
```

Treinamento Online

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