Working with Arrays

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Overview

Equality operator for arrays

Array query operators

Limiting returned elements from array fields

Demo: Querying arrays in MongoDB

```
{
    “name”: “Andrei Luca”,
    “age”: 30,
    “skills”: [ “management”, “technical” ]
}
```

Array Representation

Use square brackets to denote an array

Arrays can hold any type of data

- Array elements can have different types

Array Equality Operator

Query for an element

```
find( { arrayField : “value” } )
```

Query for whole array

```
find( { arrayField : [v1, v2] } )
```

Array Equality Operator Examples

```
db.crew.find({skills: “technical”})
db.crew.find({skills: [“technical”]})
db.crew.find({skills: [“technical”, “sales”]})
```

```
{“name”: “John”, “skills”: [“management”]}
{“name”: “Patricia”, “skills”: [“sales”, “technical”]}
{“name”: “Susan”, “skills”: [“technical”, “sales”]}
```

“It feels like something is missing…”

You

Array Query Operators

Array Query Operators

$all

$size

$elemMatch

$all

Matches arrays that contain all the elements in a provided list, regardless of the order

Using $all

```
db.crew.find({ skills: {$all: [“technical”, “sales”]} })
```

```
{“name”: “John”, “skills”: [“management”]}
{“name”: “Patricia”, “skills”: [“sales”, “technical”]}
{“name”: “Susan”, “skills”: [“technical”, “sales”]}
```

$size

Matches arrays where the size is equal to the given value

Using $size

```
db.crew.find({ skills: { $size: 2} })
db.crew.find({ skills: { $size: 0} })
```

```
{“name”: “John”, “skills”: [“management”]}
{“name”: “Patricia”, “skills”: [“sales”, “technical”]}
{“name”: “Susan”, “skills”: [“technical”, “sales”]}
```

$elemMatch

Returns arrays where an element matches multiple conditions

Using $elemMatch

```
db.crew.find({skills: {$elemMatch: {name: “flying”, lvl: {$gt: 7} }} })
```

```
{“name”: “John”, “skills”: [
    {“name”: “flying”, “lvl”: 8}, {“name”: “technical”, “lvl”: 4}
]}
```

Array Projection Operators

Array Projection Operators

Are being used to determine which elements of an array should be returned or hidden from a query

Array Projection Operators

$slice

$

$elemMatch

$slice

Limits the number of items in an array that a query returns

Using $slice

Show First N Elements

```
db.crew.find({}, {skills: {$slice: 1}})
```

```
{“name”: “Anna”, “skills”: [“sales”]}
{“name”: “John”, “skills”: [“flying”]}
```

Input Documents

```
{“name”: “Anna”, “skills”: [“sales”, “management”, “speaking”]}
{“name”: “John”, “skills”: [“flying”, “technical”]}
```

Using $slice

Skip N Elements and Pick M Elements

```
db.crew.find({}, {skills: {$slice: [1,1]} })
```

```
{“name”: “Anna”, “skills”: [“management”]}
{“name”: “John”, “skills”: [“technical”]}
```

Input Documents

```
{“name”: “Anna”, “skills”: [“sales”, “management”, “speaking”]}
{“name”: “John”, “skills”: [“flying”, “technical”]}
```

$

Given the fact that you have an array field in the query document, the $ operator limits the array content to the first N elements that matches the query condition

Using $

Show First Element That Matches an Array Query

```
db.crew.find({skills: “management”}, {“skills.$”: 1})
```

```
{“name”: “Anna”, “skills”: [“management”]}
```

Input Documents

```
{“name”: “Anna”, “skills”: [“sales”, “management”, “speaking”]}
{“name”: “John”, “skills”: [“flying”, “technical”]}
```

$elemMatch

Display only the first element to match the projection condition

Using $elemMatch

Show First Element That Matches Conditions

```
db.crew.find({}, {skills: { $elemMatch: {lvl: {$gt: 7}} } })
```

```
{“name”: “Kara”, “skills”: [{“id”: “sales”, “lvl”: 8}]}
{“name”: “Smith”}
```

Input Documents

```
{“name”: “Kara”, “skills”:[ {“id”: “sales”, “lvl”: 8}, {“id”: “mgmt”, “lvl”: 6} ]}
{“name”: “Smith”, “skills”:[ {“id”: “tech”, “lvl”: 2}]}
```

Demo

Querying arrays in MongoDB

- Filtering array fields
- Limiting elements that are returned

Summary

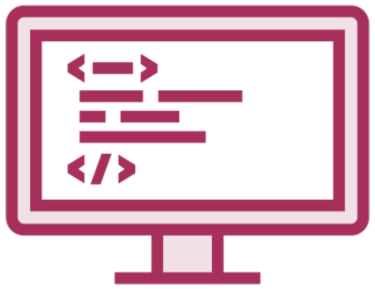
Equality is nuanced for array fields

Array query operators ($all, $size, $elemMatch) give you more filtering options

Projection operators ($slice, $, $elemMatch) limit the elements to be displayed

You have all the skills to perform queries in projects that use MongoDB

Topics



Use the Mongo shell

Filter documents

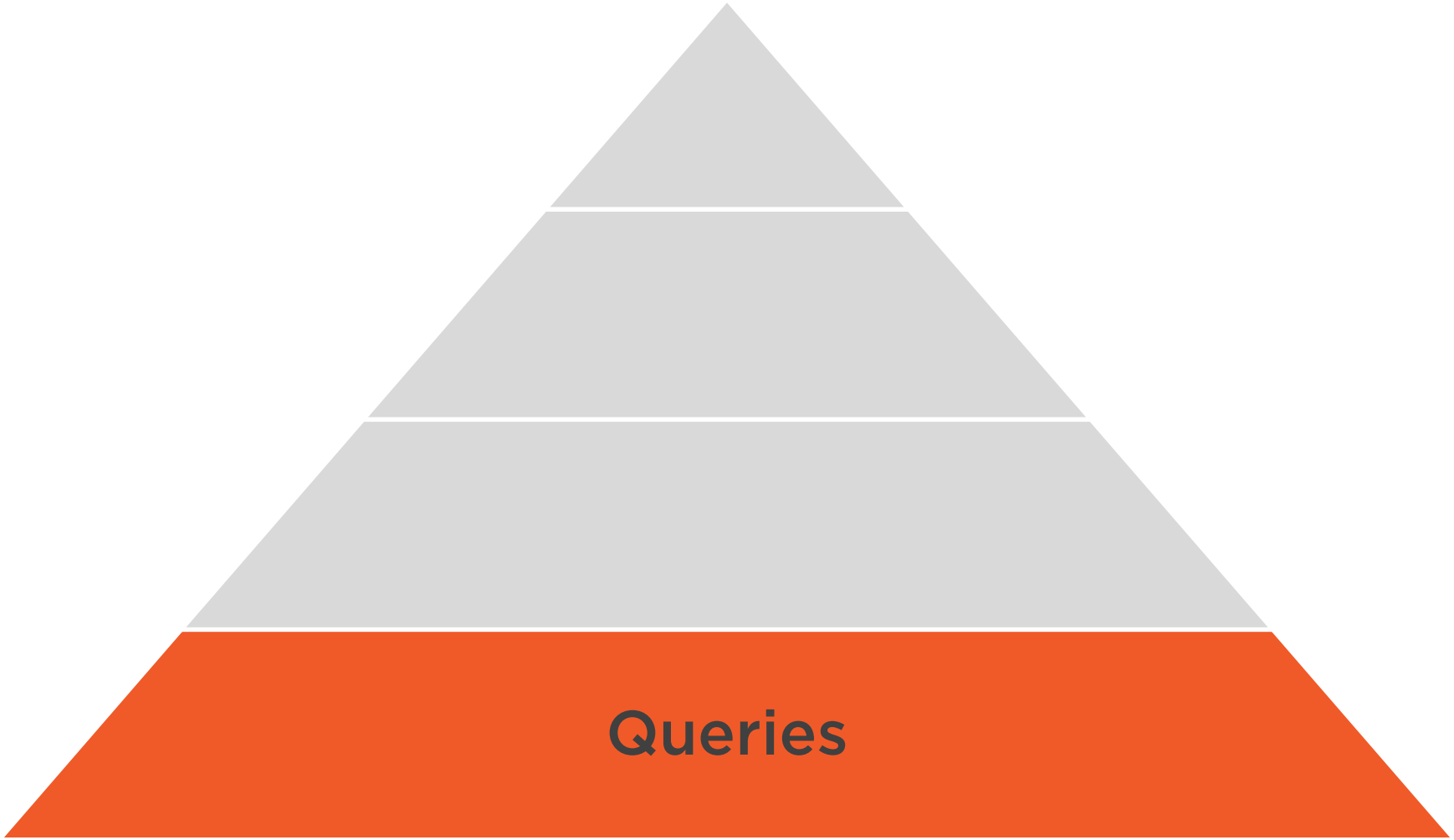
Sorting and Paging

Complex queries

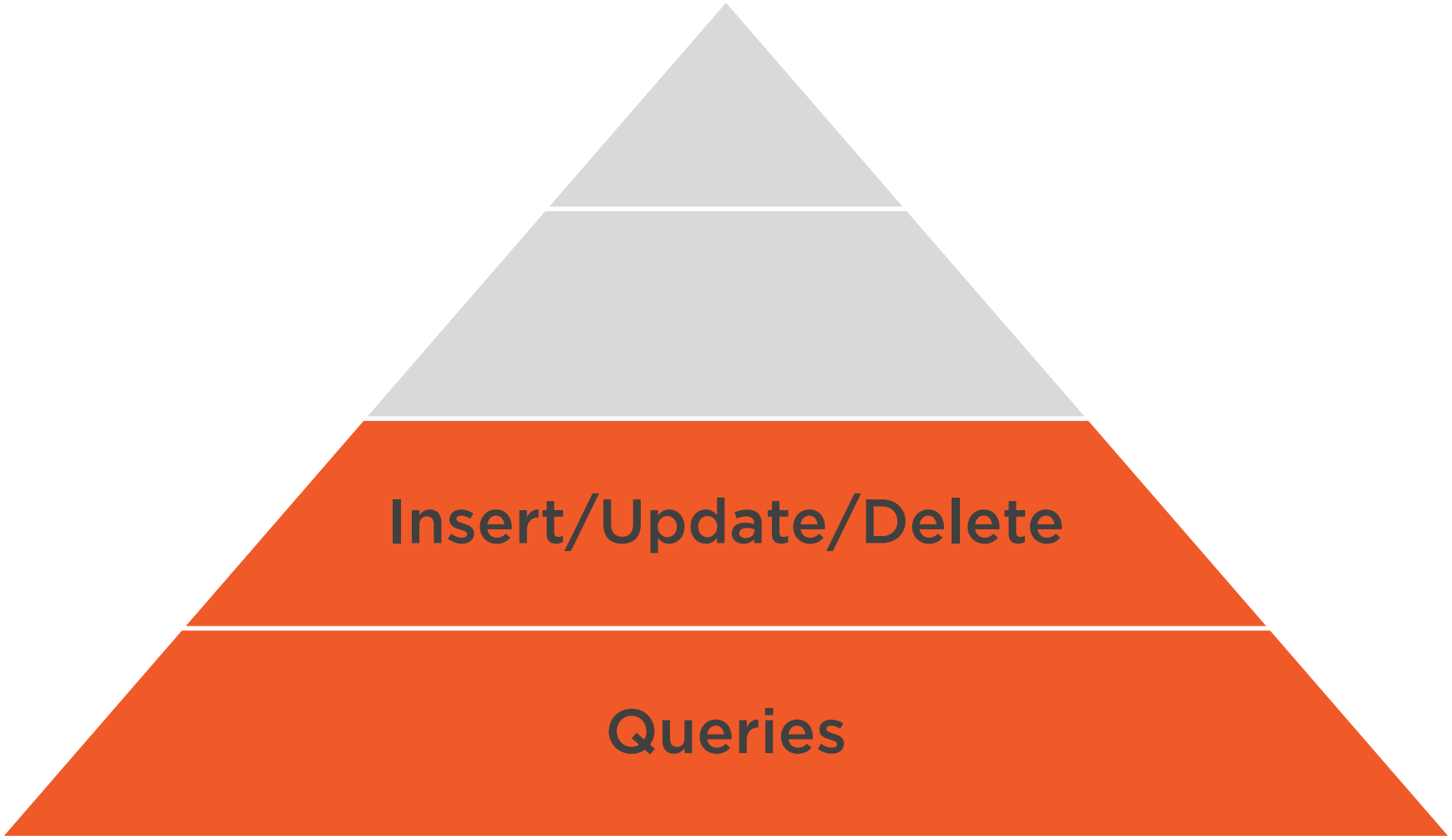
Unstructured data

Query arrays

Querying Data Is a Foundation



Mongo DB Tool Belt



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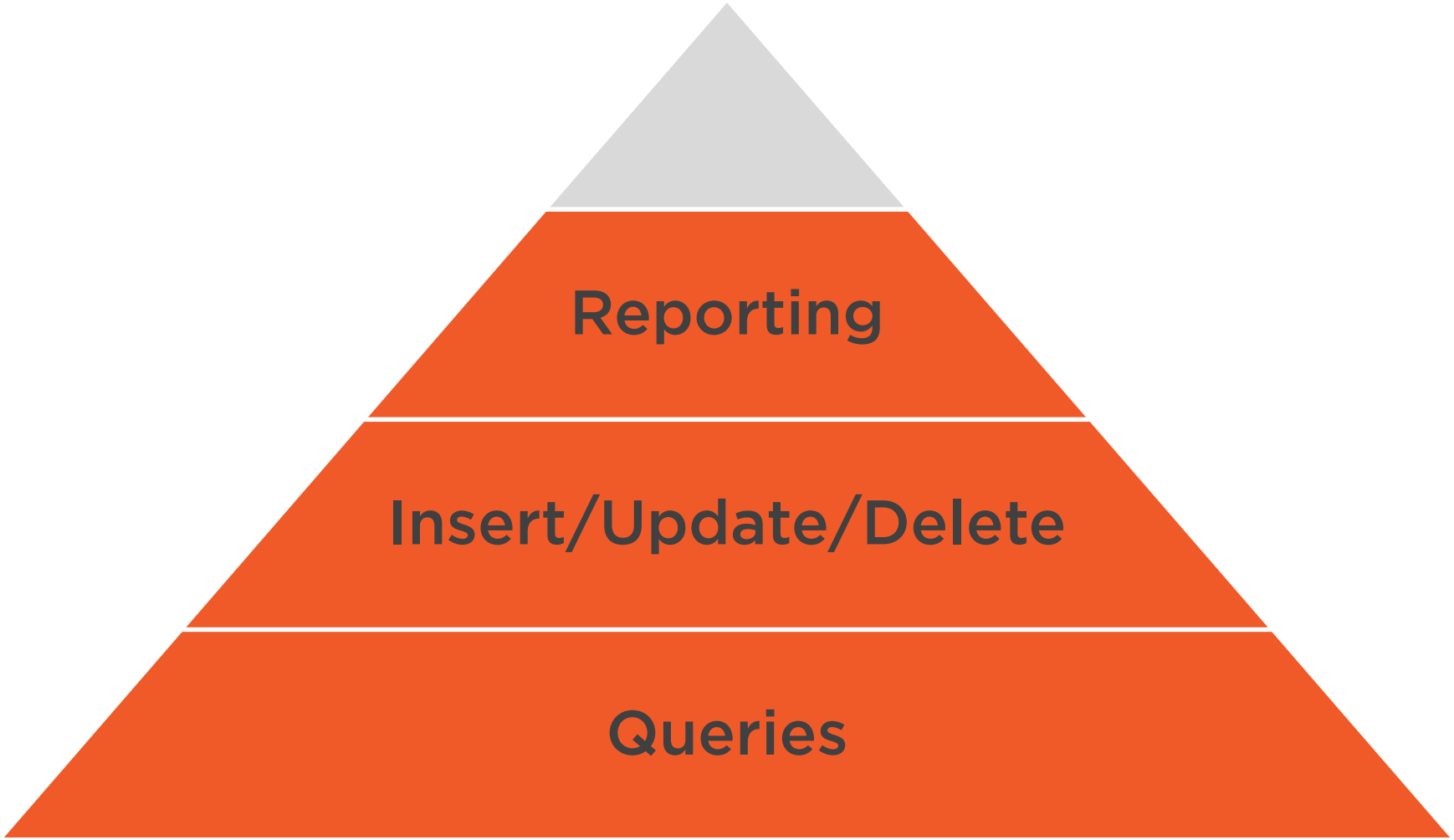

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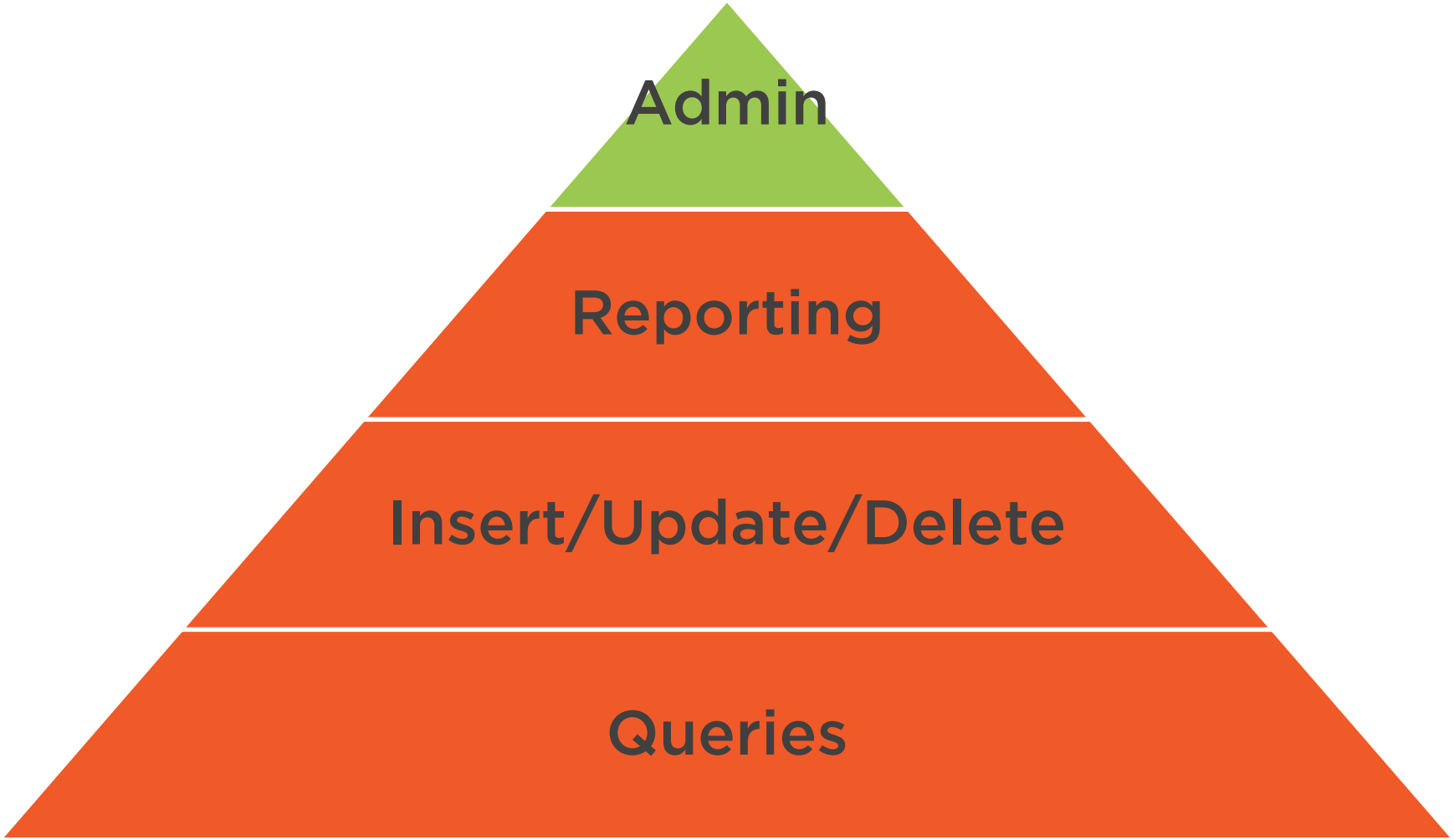

Other Courses

Foundations of Document Databases with MongoDB

Pinal Dave

Big Data & Reporting with MongoDB

Nuri Halperin

Sample Database & Examples

https://github.com/dangeabunea/pluralsight-mongodb-queries

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Let's get in touch

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Other Pluralsight course

- Spring Framework: Spring Data MongoDB
- SOLID Software Design Principles in Java