



Politecnico
di Torino

Querying Mongo DB



o

Query Exercises

DANIELE APILETTI

POLITECNICO DI TORINO

Data Model

Given the following collection of books

```
{_id:ObjectId("5fb29ae15b99900c3fa24292"),
  title:"MongoDb Guide",
  tag:["mongodb","guide","database"],
  n:100,
  review_score:4.3,
  price:[{v: 19.99, c:"€", country: "IT"},
         {v: 18, c: "£", country:"UK"} ],
  author: {_id: 1,
           name:"Mario",
           surname: "Rossi"}
},
{_id:ObjectId("5fb29b175b99900c3fa24293",
  title:"Developing with Python",
  tag:["python","guide","programming"],
  n:352,
  review_score:4.6,
  price:[{v: 24.99, c: "€", country: "IT"},
         {v: 19.49, c: "£", country:"UK"} ],
  author: {_id: 2,
           name:"John",
           surname: "Black"}
}, ...
```

price currency

price value

number of pages

Exercises

1. Find all the books with a **number of pages** greater than 250
2. Find all the books **authored** by Mario Rossi
3. Find all the books with a **price** less than 20 € for **Italy** (IT)

Solutions

- Find all the books with a number of pages greater than 250

```
db.book.find({n: {$gt: 250 }})
```

- Find all the books authored by Mario Rossi

```
db.book.find({"author.name": "Mario", "author.surname": "Rossi" })
```

- Find all the books with a price less than 20 € for the country Italy (IT)

```
db.book.find({"price": {$elemMatch: {"v": {$lt: 20}, "country": "IT" }}} )
```

Data Model

Given the following collection of books

```
{_id:ObjectId("5fb29ae15b99900c3fa24292"),
  title:"MongoDb Guide",
  tag:["mongodb","guide","database"],
  n:100,
  review_score:4.3,
  price:[{v: 19.99, c:"€", country: "IT"},
         {v: 18, c: "£", country:"UK"} ],
  author: {_id: 1,
           name:"Mario",
           surname: "Rossi"}
},
{
  _id:ObjectId("5fb29b175b99900c3fa24293"),
  title:"Developing with Python",
  tag:["python","guide","programming"],
  n:352,
  review_score:4.6,
  price:[{v: 24.99, c: "€", country: "IT"},
         {v: 19.49, c: "£", country:"UK"} ],
  author: {_id: 2,
           name:"John",
           surname: "Black"}
}, ...
```

price currency

price value

number of pages

Exercises

1. Increase the **review score** of 0.2 points for all the books with the **tag** "database"
2. Insert the **tag** "NoSQL" for all the books with **tag** "mongodb"
3. Insert the **publisher** for all the documents **authored** by Mario Rossi with the default value `{'name': 'Polito', city:'Turin'}`

Solutions

- Increase the review score of 0.1 for all the books with the tag database

```
db.book.updateMany({tag: "database" }, { $inc: {review_score: 0.2} })
```

- Insert the tag "NoSQL" for all the books with tag "mongodb"

```
db.book.updateMany({tag: "mongodb" }, { $addToSet: {tag: "NoSQL"} })
```

- Insert the publisher for all the documents authored by Mario Rossi with the default value {`name`: `Polito`, city:`Turin`}

```
db.book.updateMany(  
  {"author.name": "Mario", "author.surname": "Rossi"},  
  {$set: {publisher: {name:"Polito", city:"Turin"}}} )
```

Data Model

Given the following collection of books

```
{_id:ObjectId("5fb29ae15b99900c3fa24292"),
  title:"MongoDb Guide",
  tag:["mongodb","guide","database"],
  n:100,
  review_score:4.3,
  price:[{v: 19.99, c:"€", country: "IT"},
         {v: 18, c: "£", country:"UK"} ],
  author: {_id: 1,
           name:"Mario",
           surname: "Rossi"}
},
{
  _id:ObjectId("5fb29b175b99900c3fa24293"),
  title:"Developing with Python",
  tag:["python","guide","programming"],
  n:352,
  review_score:4.6,
  price:[{v: 24.99, c: "€", country: "IT"},
         {v: 19.49, c: "£", country:"UK"} ],
  author: {_id: 2,
           name:"John",
           surname: "Black"}
}, ...
```

price currency

price value

number of pages

Exercises

1. Find the maximum, the minimum and the average **price** of all the books with **tag** "database"
2. Compute the number of books **authored** by Mario Rossi

Solutions

- Find the maximum, the minimum and the average price of all the books with tag "database"

```
db.book.aggregate([ {$match: {tag: "database" }},  
                    {$unwind: "$price"},  
                    {$group: {_id: null,  
                               avg: {$avg: "$price.v"},  
                               min: {$min: "$price.v"},  
                               max: {$max: "$price.v"} } } ])
```

- Compute the number of books authored by Mario Rossi

```
db.book.count({ "author.name": "Mario", "author.surname": "Rossi" })
```

```
db.book.find({ "author.name": "Mario", "author.surname": "Rossi" }).count()
```