Deleting Documents in MongoDB



Douglas StarnesAUTHOR / SPEAKER

@poweredbyaltnet douglasstarnes.com



Deleting Documents



API methods

- deleteOne
- deleteMany

Filter document

- Defines conditions of the documents that will be removed

Query operators

- The 'language' of filter documents

Collation document

- Specifies rules for string comparison

Return document includes the deletedCount field



deleteOne()

```
> db.collection.deleteOne(
    { /* filter document */ },
      { /* write concern */ },
      { /* collation document */ }
{"acknowleged": true, "deletedCount": 1}
```



deleteMany()

```
> db.collection.deleteMany(
    { /* filter document */ },
      { /* write concern */ },
      { /* collation document */ }
{"acknowleged": true, "deletedCount": 10}
> db.collection.deleteMany({}); // deletes all documents in the collection
```



Collation Document Fields



locale - Mandatory, specify with ICU code or 'simple'



strength - Specify language feature precedence



caseLevel - Specify if case comparison should take place at strength 1 or 2



Collation Document Fields



caseFirst - Specify sort order between upper and lower case

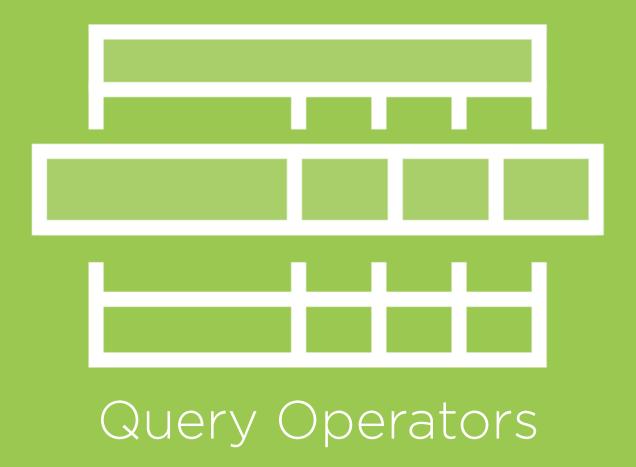


numericOrdering - Specify if numeric strings should be treated as strings or numbers



alternate - Specify if punctuation and whitespace should be considered







Filter Document Syntax

```
{
    "field": {$operator: "value"},
    "field": {$operator: "value"}
}
```





Comparison Operators



\$eq

```
{"ticket_cost": {$eq: 250}}

{"ticket_cost": 250}

shortcut

{"ticket_cost": {$ne: 250}}

not equals
```

\$1t (And Friends)

```
{"ticket_cost": {$1t: 250}}
                                         Less than
{"ticket_cost": {$gt: 250}}
                                        Greater than
{"ticket_cost": {$1te: 250}}
                                     Less than or equal
{"ticket_cost": {$gte: 250}}
                                    Greater than or equal
  "ticket_cost": {$gte: 100},
                                         Caution!
  "ticket_cost": {$1te: 250}
```

\$in

```
{"topics": {$in:["javascript", "mongodb"]}}
                                                        Membership
sessions
   {_id: 1, "topics": ["javascript"]}
                                                        Selected
   {_id: 2, "topics": ["javascript", "web"]}
                                                        Selected
   {_id: 3, "topics": ["web"]}
                                                       Not selected
   {_id: 4, "category": ["web"]}
                                                       Not selected
{"topics": {$nin:["javascript", "mongodb"]}}
                                                           Not in
```



Logical Operators



\$and (Plus Other Logical Operators)

```
{$and: [
    {"ticket_cost": {$gte: 100},
    {"ticket_cost": {$1te: 250}
]}
{"ticket_cost": {$gte: 100, $1te: 250}}
{$or: [
    {"ticket_cost": {$gte: 100},
    {"ticket_cost": {$1te: 250}
{$nor: [
    {"ticket_cost": {$gte: 100},
    {"ticket_cost": {$1te: 250}
]}
```

Both operators must be satisfied

Shortcut

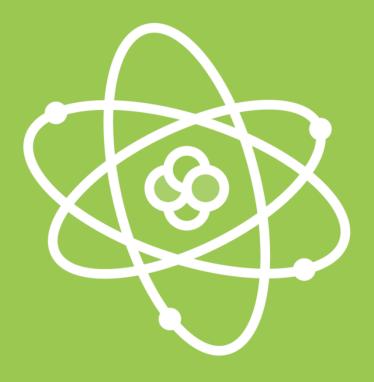
Logical OR

Logical NOR



\$not

```
{"location": {$not: "Denver, CO"}}
                                                          Logical NOT
conferences
    {_id: 1, "location": "Austin, TX"}
                                                           Selected
    {_id: 2, "location": "Denver, CO"}
                                                         Not selected
    {_id: 3, "eventLocation": "Denver, CO"}
                                                           Selected
                                                       Won't select documents
{"location": {$ne: "Denver, CO"}}
                                                       without location field
conferences
   {_id: 1, "location": "Austin, TX"}
                                                           Selected
   {_id: 2, "eventLocation": "Austin, TX"}
                                                         Not selected
```



Element Operators



\$exists

```
{"location": {$exists: true}}
```

Won't select documents without location field

conferences

```
{_id: 1, "location": "Denver, CO"}
{_id: 2, "eventLocation": "Austin, TX"}
```

Selected

Not selected

```
{"location": {$exists: false}}
```

Won't select documents with location field

conferences

```
{_id: 1, "location": "Denver, CO"}
{_id: 2, "eventLocation": "Austin, TX"}
```

Not selected

Selected



\$type

```
{"ticket_cost": {$type: "double"}}
{"ticket_cost": {$type: 1}}
{"ratings": {$type: int}}
```

Specify type by name

Specify type by number

ratings is an array

sessions

```
{_id: 1, "ratings": [5, 4, "a", "great"]}
{_id: 2, "ratings": ["a", "a", "b", "a"]}
```

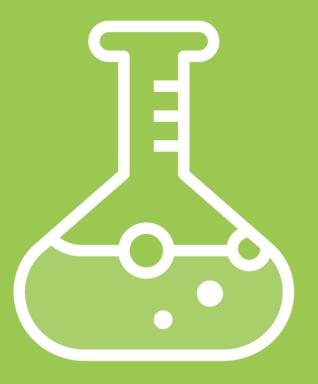
Selected

Not selected

{"ticket_cost": {\$type: ["int", "double"]}}

Select documents
with ticket_cost of
 int or double





Evaluation Operators



\$expr

```
$expr:
  $1t: ["$registered", "$seats"]
$expr:
  $gt: [
    $subtract: ["$seats", "$registered"],
    NumberDecimal("0")
```

Select documents where registered is less than seats

Select documents
where the difference
of seats and
registered is > 0



\$regex

```
{"state": {$regex: /[A-Z]{3,}/}}
```

Select documents with a state field that is 3 or more capital letters

attendees

```
{_id: 1, "state": "TN"}
{_id: 2, "state": "TNT"}
{_id: 3, "state": "XY"}
```

Not selected

Selected

Not selected

```
{"state": {$regex: /[A-Z]{3,}/, $options: "xs"}}
```

\$text

```
{"description":
  {$text:
    {$search: "javascript mongodb"}
{"description":
  {$text:
    {\$search: "\"Read a review\""}
{"description":
  {$text:
    {$search: "javascript mongodb",
     $language: "en",
     $caseSensitive: false,
     $diacriticSensitive: false}
```

Logically OR the search terms

Match an exact phrase

For stemming
Case sensitive search
Diacritic sensitive search



Use of the \$where operator is discouraged

As of MongoDB 3.6 use the \$expr operator





Array Operators



\$a11

```
Both terms must be in
{"topics": {$all: ["javascript", "mongodb"]}}
                                                          topics array
sessions
   {_id: 1, "topics":
       ["javascript", "mongodb", "web]
                                                          Selected
   {_id: 2, "topics":
       ["javascript", "web"]
                                                        Not selected
```

{"topics": "javascript"}, {"topics": "web"} Shortcut for \$and

{\$and: [

]}

\$elemMatch

```
{"ratings":
    {$elemMatch:
        {$gte: 3, $lte: 8}
    }
}

{"ratings":
    {$elemMatch:
        {$elemMatch:
            {$elemMatch:
                {"content": {$gte: 4}, "delivery": {$gte: 7}
            }
}
At least one element in ratings must satisfy the conditions

Array of documents

Array of documents

Array of documents

Array of documents
```

sessions



Find the complete list and details of query operators at:

https://docs.mongodb.com/manual/reference/operator/query/





Comment Operator



\$comment

```
{
  $expr:
  {
    $gt: [
        $subtract: ["$seats", "$registered"],
        NumberDecimal("0")
    ]
  },
  $comment: "select workshops that still have an available seat"
}
```



Demo



MongoDB delete methods



Demo



Filter and collation documents



Summary



API methods

- deleteOne
- deleteMany

Return document includes deletedCount

Collation document

- Specifies rules for string comparison

Filter document

- Selects documents to be deleted
- Empty filter document to deleteMany deletes all documents in a collection

Query operators

- The 'language' of filter documents
- Not just for deletes

