

# Gestion de collections d'automobiles dans MongoDB

## Collection Voiture

---

Création et insertion des documents dans la collection

Fichier voitures.json

```
[
  {"Marque": "Ferrari", "Modele": "F40", "Denomination": "Testarossa", "Cylindree": "2936", "Couleur": "Rouge", "Proprietaire": "Valerio"},
  {"Marque": "Lamborghini", "Modele": "Countach", "Denomination": "", "Cylindree": "5167", "Couleur": "Jaune", "Proprietaire": "Rafik"},
  {"Marque": "De Tomaso", "Modele": "Pantera", "Denomination": "", "Cylindree": "5800", "Couleur": "Bleu", "Proprietaire": "Rafik"},
  {"Marque": "Pontiac", "Modele": "Firebird", "Denomination": "KITT", "Cylindree": "5700", "Couleur": "Noir", "Proprietaire": "Valerio"},
  {"Marque": "Volkswagen", "Modele": "Coccinelle", "Denomination": "Choupette", "Cylindree": "1584", "Couleur": "Blanc", "Proprietaire": "Laurent"},
  {"Marque": "Ford", "Modele": "Mustang", "Denomination": "Eleanor", "Cylindree": "7000", "Couleur": "Gris", "Proprietaire": "Rafik"},
  {"Marque": "Chevrolet", "Modele": "Corvette", "Denomination": "Lola", "Cylindree": "5400", "Couleur": "Rouge", "Proprietaire": "Valerio"},
  {"Marque": "Cadillac", "Modele": "Eldorado", "Denomination": "Ectomobile-1", "Cylindree": "6400", "Couleur": "Blanc", "Proprietaire": "Laurent"},
  {"Marque": "Dodge", "Modele": "Charger", "Denomination": "General Lee", "Cylindree": "7206", "Couleur": "Orange", "Proprietaire": "Rafik"}
]
```

## Create Collection

**Collection Name**

☐ **Capped Collection** ⓘ

☐ **Use Custom Collation** ⓘ

CANCEL

CREATE COLLECTION

Import To Collection test.Voiture

Select File

[BROWSE](#)

Select Input File Type

JSON

CSV

Options

☒ Ignore empty strings

☐ Stop on errors

CANCEL

IMPORT

This collection has no data

It only takes a few seconds to import data from a JSON or CSV file

Import Data

## Sélection des documents avec Valerio ou Rafik en propriétaire

test.Voiture

DOCUMENTS 9 TOTAL SIZE 1.3KB AVG. SIZE 152B INDEXES 1 TOTAL SIZE 4.0KB AVG. SIZE 4.0KB

Documents Aggregations Schema Explain Plan Indexes Validation

FILTER {{Proprietaire: {\$in: ["Valerio","Rafik"]}}} OPTIONS FIND RESET ...

ADD DATA VIEW {}

Displaying documents 1 - 7 of 7 REFRESH

> `_id: ObjectId("5fd14f6a62df10bfb83d7e2e")`  
Marque: "Ferrari"  
Modele: "F40"  
Denomination: "Testarossa"  
Cylindree: "2936"  
Couleur: "Rouge"  
Proprietaire: "Valerio"

`_id: ObjectId("5fd14f6a62df10bfb83d7e2f")`  
Marque: "Lamborghini"  
Modele: "Countach"  
Denomination: ""  
Cylindree: "5167"  
Couleur: "Jaune"  
Proprietaire: "Rafik"

`_id: ObjectId("5fd14f6a62df10bfb83d7e30")`  
Marque: "De Tomaso"  
Modele: "Pantera"  
Denomination: ""  
Cylindree: "5800"  
Couleur: "Bleu"  
Proprietaire: "Rafik"

`_id: ObjectId("5fd14f6a62df10bfb83d7e31")`  
Marque: "Pontiac"  
Modele: "Firebird"  
Denomination: "KITT"  
Cylindree: "5700"  
Couleur: "Noir"  
Proprietaire: "Valerio"

`_id: ObjectId("5fd14f6a62df10bfb83d7e33")`  
Marque: "Ford"  
Modele: "Mustang"  
Denomination: "Eleanor"  
Cylindree: "7000"  
Couleur: "Gris"  
Proprietaire: "Rafik"

`_id: ObjectId("5fd14f6a62df10bfb83d7e34")`  
Marque: "Chevrolet"  
Modele: "Corvette"  
Denomination: "Lola"  
Cylindree: "5400"  
Couleur: "Rouge"  
Proprietaire: "Valerio"

`_id: ObjectId("5fd14f6a62df10bfb83d7e36")`  
Marque: "Dodge"  
Modele: "Charger"  
Denomination: "General Lee"  
Cylindree: "7206"  
Couleur: "Orange"  
Proprietaire: "Rafik"

## Mise à jour des documents avec Valerio en propriétaire (devenant le ProprietairePrecedent)

test.Voiture

DOCUMENTS 9 TOTAL SIZE 1.3KB AVG. SIZE 152B INDEXES 1 TOTAL SIZE 4.0KB AVG. SIZE 4.0KB

Documents Aggregations Schema Explain Plan Indexes Validation

FILTER {Proprietaire: "Valerio"} OPTIONS FIND RESET ...

ADD DATA VIEW {}

Displaying documents 1 - 3 of 3 REFRESH

```
> {
  "_id": ObjectId("5fd14f6a62df10bf83d7e2e"),
  "Marque": "Ferrari",
  "Modele": "F40",
  "Denomination": "Testarossa",
  "Cylindree": "2936",
  "Couleur": "Rouge",
  "Proprietaire": "Valerio"
}
```

Edit Document

```
{
  "_id": ObjectId("5fd14f6a62df10bf83d7e31"),
  "Marque": "Pontiac",
  "Modele": "Firebird",
  "Denomination": "KITT",
  "Cylindree": "5700",
  "Couleur": "Noir",
  "Proprietaire": "Valerio"
}
```

```
{
  "_id": ObjectId("5fd14f6a62df10bf83d7e34"),
  "Marque": "Chevrolet",
  "Modele": "Corvette",
  "Denomination": "Lola",
  "Cylindree": "5400",
  "Couleur": "Rouge",
  "Proprietaire": "Valerio"
}
```

test.Voiture

DOCUMENTS 9 TOTAL SIZE 1.3KB AVG. SIZE 152B INDEXES 1 TOTAL SIZE 4.0KB AVG. SIZE 4.0KB

Documents Aggregations Schema Explain Plan Indexes Validation

FILTER {Proprietaire: "Valerio"} OPTIONS FIND RESET ...

ADD DATA VIEW {}

Displaying documents 1 - 3 of 3 REFRESH

1	_id: ObjectId("5fd14f6a62df10bf83d7e2e")	ObjectId
2	Marque: "Ferrari"	String
3	Modele: "F40"	String
4	Denomination: "Testarossa"	String
5	Cylindree: "2936"	String
6	couleur: "Rouge"	String
7	Proprietaire: "Anthony"	String
8	ProprietairePrecedent: "Valerio"	String

Document Modified. CANCEL UPDATE

1	_id: ObjectId("5fd14f6a62df10bf83d7e31")	ObjectId
2	Marque: "Pontiac"	String
3	Modele: "Firebird"	String
4	Denomination: "KITT"	String
5	Cylindree: "5700"	String
6	couleur: "Noir"	String
7	Proprietaire: "Anthony"	String
8	ProprietairePrecedent: "Valerio"	String

Document Modified. CANCEL UPDATE

1	_id: ObjectId("5fd14f6a62df10bf83d7e34")	ObjectId
2	Marque: "Chevrolet"	String
3	Modele: "Corvette"	String
4	Denomination: "Lola"	String
5	Cylindree: "5400"	String
6	couleur: "Rouge"	String
7	Proprietaire: "Anthony"	String
8	ProprietairePrecedent: "Valerio"	String

Document Modified. CANCEL UPDATE

## Suppression des documents ayant Couleur:Blanc

test.Voiture

DOCUMENTS 9 TOTAL SIZE 1.3KB AVG. SIZE 152B INDEXES 1 TOTAL SIZE 4.0KB AVG. SIZE 4.0KB

Documents Aggregations Schema Explain Plan Indexes Validation

FILTER {Couleur: "Blanc"} OPTIONS FIND RESET ...

ADD DATA VIEW {}

Displaying documents 1 - 2 of 2 REFRESH

```
{
  "_id": "ObjectId(\"5fd14f6a62df10bfb83d7e32\")",
  "Marque": "Volkswagen",
  "Modele": "Coccinelle",
  "Denomination": "Choupette",
  "Cylindree": "1584",
  "Couleur": "Blanc",
  "Proprietaire": "Laurent"
}
```

Document Flagged For Deletion. CANCEL DELETE

```
{
  "_id": "ObjectId(\"5fd14f6a62df10bfb83d7e35\")",
  "Marque": "Cadillac",
  "Modele": "Eldorado",
  "Denomination": "Ectomobile-1",
  "Cylindree": "6400",
  "Couleur": "Blanc",
  "Proprietaire": "Laurent"
}
```

Delete Document

## Collection Collectionneur

---

### Création et insertion des documents dans la collection

Fichier collectionneur.json

```
[
  {
    "Proprietaire": "Valerio",
    "Voitures": [
      { "Marque": "Ferrari", "Modele": "F40", "Denomination": "Testarossa", "Cylindree": "2936", "Couleur": "Rouge" },
      { "Marque": "Pontiac", "Modele": "Firebird", "Denomination": "KITT", "Cylindree": "5700", "Couleur": "Noir" },
      { "Marque": "Chevrolet", "Modele": "Corvette", "Denomination": "Lola", "Cylindree": "5400", "Couleur": "Rouge" }
    ]
  },
  {
    "Proprietaire": "Rafik",
    "Voitures": [
      { "Marque": "Lamborghini", "Modele": "Countach", "Denomination": "", "Cylindree": "5167", "Couleur": "Jaune" },
      { "Marque": "De Tomaso", "Modele": "Pantera", "Denomination": "", "Cylindree": "5800", "Couleur": "Bleu" },
      { "Marque": "Ford", "Modele": "Mustang", "Denomination": "Eleanor", "Cylindree": "7000", "Couleur": "Gris" },
      { "Marque": "Dodge", "Modele": "Charger", "Denomination": "General Lee", "Cylindree": "7206", "Couleur": "Orange" }
    ]
  },
  {
    "Proprietaire": "Laurent",
    "Voitures": [
      { "Marque": "Volkswagen", "Modele": "Coccinelle", "Denomination": "Choupette", "Cylindree": "1584", "Couleur": "Blanc" },
      { "Marque": "Cadillac", "Modele": "Eldorado", "Denomination": "Ectomobile-1", "Cylindree": "6400", "Couleur": "Blanc" }
    ]
  }
]
```

## Create Collection

### Collection Name

☐ Capped Collection ☐ Use Custom Collation CANCELCREATE COLLECTION

test.Collectionneur Documents

test.Collectionneur

DOCUMENTS 3 TOTAL SIZE 1.2KB AVG. SIZE 402B INDEXES 1 TOTAL SIZE 4.0KB AVG. SIZE 4.0KB

Documents Aggregations Schema Explain Plan Indexes Validation

FILTER

OPTIONS FIND RESET

ADD DATA

VIEW

Displaying documents 1 - 3 of 3

REFRESH

```
_id: ObjectId("5fc8a786ab32c596703bea8e")
Proprietaire: "Valerio"
Voitures: Array
  0: Object
  1: Object
  2: Object
```

```
_id: ObjectId("5fc8a786ab32c596703bea8f")
Proprietaire: "Rafik"
Voitures: Array
  0: Object
    Marque: "Lamborghini"
    Modele: "Countach"
    Denomination: ""
    Cylindree: "5167"
    Couleur: "Jaune"
  1: Object
  2: Object
  3: Object
```

```
_id: ObjectId("5fc8a786ab32c596703bea90")
Proprietaire: "Laurent"
Voitures: Array
  0: Object
  1: Object
```

## Sélection des documents avec Valerio ou Rafik en propriétaire

The screenshot shows the MongoDB Compass interface for a database named 'test'. The collection 'Collectionneur' is selected. A filter is applied: `{Proprietaire: { $in: ["Valerio", "Rafik"] }}`. The interface displays 2 documents out of 2. The documents are as follows:

	_id ObjectId	Proprietaire String	Voitures Array
1	5fc8a786ab32c596703bea8e	"Valerio"	[ ] 3 elements
2	5fc8a786ab32c596703bea8f	"Rafik"	[ ] 4 elements

At the top, the document count is 3, with a total size of 1.2KB and an average size of 402B. There is 1 index with a total size of 4.0KB and an average size of 4.0KB. The interface includes tabs for Documents, Aggregations, Schema, Explain Plan, Indexes, and Validation. A filter bar at the top allows for document selection, and a table view at the bottom displays the document details.



Mise à jour des documents avec Valerio en propriétaire (devenant le ProprietairePrecedent)

test.Collectionneur Documents

test.Collectionneur

DOCUMENTS 3 TOTAL SIZE 1.2KB AVG. SIZE 402B INDEXES 1 TOTAL SIZE 4.0KB AVG. SIZE 4.0KB

Documents Aggregations Schema Explain Plan Indexes Validation

FILTER {Proprietaire: "Valerio"} OPTIONS FIND RESET ...

ADD DATA VIEW {}

Displaying documents 1 - 1 of 1 REFRESH

```
> {
  "_id": ObjectId("5fc8a786ab32c596703bea8e"),
  "Proprietaire": "Valerio",
  "Voitures": Array
    [0] Object
      "Marque": "Ferrari"
      "Modele": "F40"
      "Denomination": "Testarossa"
      "Cylindree": "2936"
      "Couleur": "Rouge"
    [1] Object
      "Marque": "Pontiac"
      "Modele": "Firebird"
      "Denomination": "KITT"
      "Cylindree": "5700"
      "Couleur": "Noir"
    [2] Object
      "Marque": "Chevrolet"
      "Modele": "Corvette"
      "Denomination": "Lola"
      "Cylindree": "5400"
      "Couleur": "Rouge"
}
```

Edit Document

test.Collectionneur Documents

test.Collectionneur

DOCUMENTS 3 TOTAL SIZE 1.2KB AVG. SIZE 402B INDEXES 1 TOTAL SIZE 4.0KB AVG. SIZE 4.0KB

Documents Aggregations Schema Explain Plan Indexes Validation

FILTER {Proprietaire: "Valerio"} OPTIONS FIND RESET ...

ADD DATA VIEW {}

Displaying documents 1 - 1 of 1 REFRESH

1	_id: ObjectId("5fc8a786ab32c596703bea8e")	ObjectId
2	Proprietaire: "Anthony "	String
3	Voitures: Array	Array
4	0: Object	Object
5	Marque: "Ferrari "	String
6	Modele: "F40 "	String
7	Denomination: "Testarossa "	String
8	Cylindree: "2936 "	String
9	Couleur: "Rouge "	String
10	ProprietairePrecedent: "Valerio "	String
11	1: Object	Object
12	Marque: "Pontiac "	String
13	Modele: "Firebird "	String
14	Denomination: "KITT "	String
15	Cylindree: "5700 "	String
16	Couleur: "Noir "	String
17	ProprietairePrecedent: "Valerio "	String
18	2: Object	Object
19	Marque: "Chevrolet "	String
20	Modele: "Corvette "	String
21	Denomination: "Lola "	String
22	Cylindree: "5400 "	String
23	Couleur: "Rouge "	String
24	ProprietairePrecedent: "Valerio "	String

Document Modified. CANCEL UPDATE

## Suppression des documents ayant Couleur:Blanc

test.Collectionneur Documents

test.Collectionneur

DOCUMENTS 3 TOTAL SIZE 1.2KB AVG. SIZE 402B INDEXES 1 TOTAL SIZE 4.0KB AVG. SIZE 4.0KB

Documents Aggregations Schema Explain Plan Indexes Validation

FILTER {"Voitures.Couleur": "Blanc"} OPTIONS FIND RESET ...

ADD DATA VIEW

Displaying documents 1 - 1 of 1 REFRESH

```
{
  "_id": ObjectId("5fc8a786ab32c596703bea90"),
  "Proprietaire": "Laurent",
  "Voitures": [
    {
      "Marque": "Volkswagen",
      "Modele": "Coccinelle",
      "Denomination": "Choupette",
      "Cylindree": "1584",
      "Couleur": "Blanc"
    },
    {
      "Marque": "Cadillac",
      "Modele": "Eldorado",
      "Denomination": "Ectomobile-1",
      "Cylindree": "6400",
      "Couleur": "Blanc"
    }
  ]
}
```

test.Collectionneur Documents

test.Collectionneur

DOCUMENTS 3 TOTAL SIZE 1.2KB AVG. SIZE 402B INDEXES 1 TOTAL SIZE 4.0KB AVG. SIZE 4.0KB

Documents Aggregations Schema Explain Plan Indexes Validation

FILTER {"Voitures.Couleur": "Blanc"} OPTIONS FIND RESET ...

ADD DATA VIEW

Displaying documents 1 - 1 of 1 REFRESH

1	_id: ObjectId("5fc8a786ab32c596703bea90")	ObjectId
2	Proprietaire : "Laurent "	String
3	Voitures : Array	Array
4	0 : Object	Object
5	Marque : "Volkswagen "	String
6	Modele : "Coccinelle "	String
7	Denomination : "Choupette "	String
8	Cylindree : "1584 "	String
9	Couleur : "Blanc "	String
10	1 : Object	Object
11	Marque : "Cadillac "	String
12	Modele : "Eldorado "	String
13	Denomination : "Ectomobile-1 "	String
14	Cylindree : "6400 "	String
15	Couleur : "Blanc "	String

Document Modified. CANCEL UPDATE

## Sélection des véhicules de couleur noire

test.Collectionneur

DOCUMENTS 3 TOTAL SIZE 1.2KB AVG. SIZE 402B INDEXES 1 TOTAL SIZE 4.0KB AVG. SIZE 4.0KB

Documents Aggregations Schema Explain Plan Indexes Validation

**FILTER** [{"Voitures.Couleur": "Noir"}] **OPTIONS** **FIND** **RESET** ...

**ADD DATA** **VIEW** [List Icon] [JSON Icon] [Table Icon]

Displaying documents 1 - 2 of 2 **REFRESH**

```
{
  "_id": ObjectId("5fd28e0d93930944307ebdf1"),
  "Proprietaire": "Anthony",
  "Voitures": Array
    > 0: Object
    > 1: Object
      "Marque": "Pontiac"
      "Modele": "Firebird"
      "Denomination": "KITT"
      "Cylindree": "5700"
      "Couleur": "Noir"
      "ProprietairePrecedent": "Valerio"
    > 2: Object

{
  "_id": ObjectId("5fd28e0d93930944307ebdf2"),
  "Proprietaire": "Rafik",
  "Voitures": Array
    > 0: Object
    > 1: Object
      "Marque": "De Tomaso"
      "Modele": "Pantera"
      "Denomination": ""
      "Cylindree": "5800"
      "Couleur": "Noir"
    > 2: Object
    > 3: Object
```

Le résultat affiche les propriétaires pour lesquels le filtre a réussi, c'est-à-dire les propriétaires qui ont une voiture noire parmi leurs voitures. Par contre, comme la collection est axée sur les propriétaires, le résultat affiche également tous leurs champs dont le tableau de voitures (dont celles qui ne sont pas noires mais qui leur appartiennent).

On peut éventuellement spécifier la projection pour n'afficher que la voiture noire :

The screenshot shows the MongoDB Compass interface for a database named 'test.Collectionneur'. The 'Documents' tab is active. The query bar contains a filter: `{ "Voitures.Couleur": "Noir" }` and a projection: `{ "Voitures.$": 1 }`. The results display two documents, both with a 'Voitures' array containing one object. The first document is for a Pontiac Firebird (KITT) and the second is for a De Tomaso Pantera. Both have a 'Couleur' of 'Noir'.

DOCUMENTS	TOTAL SIZE	AVG. SIZE
3	1.2KB	402B

INDEXES	TOTAL SIZE	AVG. SIZE
1	4.0KB	4.0KB

Documents | Aggregations | Schema | Explain Plan | Indexes | Validation

**FILTER** `{ "Voitures.Couleur": "Noir" }` **PROJECT** `{ "Voitures.$": 1 }` **MAXTIMES** 5000 **SKIP** 0 **LIMIT** 0 **FIND** **RESET** **...**

VIEW `{ }` `[ ]` `[ ]` `[ ]` Displaying documents 1 - 2 of 2 **REFRESH**

```
{ "_id": ObjectId("5fd28e0d93930944307ebdf1"), "Voitures": [ { "Marque": "Pontiac", "Modele": "Firebird", "Denomination": "KITT", "Cylindree": "5700", "Couleur": "Noir", "ProprietairePrecedent": "Valerio" } ] }
```

```
{ "_id": ObjectId("5fd28e0d93930944307ebdf2"), "Voitures": [ { "Marque": "De Tomaso", "Modele": "Pantera", "Denomination": "", "Cylindree": "5800", "Couleur": "Noir" } ] }
```

Si le traitement des voitures est prépondérant, on peut reconsidérer la collection Voitures créée initialement.

On peut également partir sur un modèle mixte où la collection Collectionneur aurait dans le champ Voitures un tableau de références (objectid) vers les voitures de la collection Voitures pour permettre de filtrer aussi bien sur les propriétaires que les voitures.