MongoDB Practice Questions

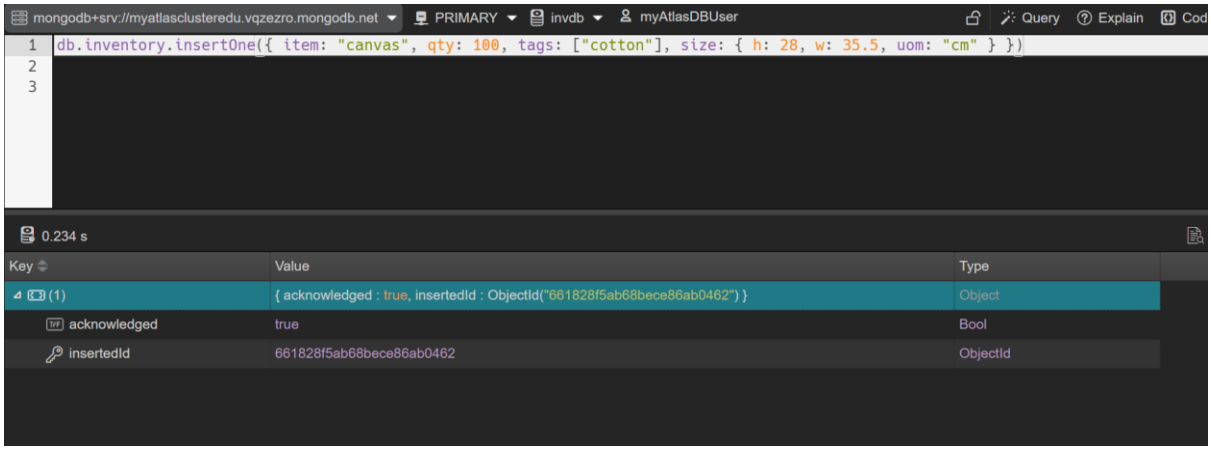
CRUD Operations

Create

insertOne

Create collection inventory and insert Inventory details

db.inventory.insertOne({ item: "canvas", qty: 100, tags: ["cotton"], size: { h: 28, w: 35.5, uom: "cm" }})



insertMany

db.inventory.insertMany([

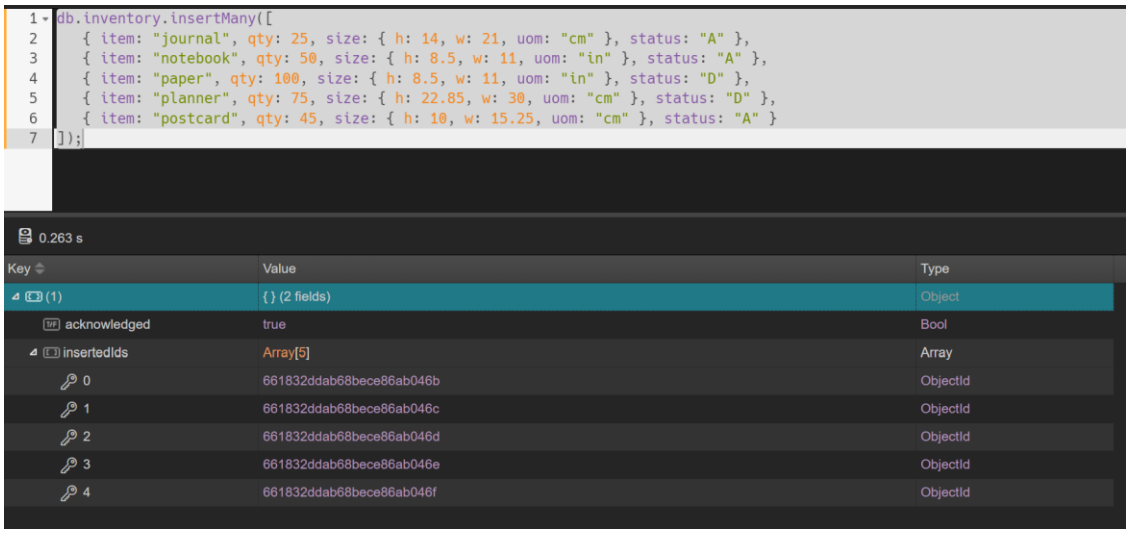
{ item: "journal", qty: 25, size: { h: 14, w: 21, uom: "cm" }, status: "A" },

{ item: "notebook", qty: 50, size: { h: 8.5, w: 11, uom: "in" }, status: "A" },

{ item: "paper", qty: 100, size: { h: 8.5, w: 11, uom: "in" }, status: "D" },

{ item: "planner", qty: 75, size: { h: 22.85, w: 30, uom: "cm" }, status: "D" },

{ item: "postcard", qty: 45, size: { h: 10, w: 15.25, uom: "cm" }, status: "A" }]);



Read

find()

db.inventory.find()

```
db.inventory.find( )
```

inventory | 0.227 s | 6 Docs

Key	Value	Type
(1) 66183473ab68bece86ab0477	{ item : "canvas", qty : 100, tags : ["cotton"], size : { h : 28, w : 35.5, uom : "cm" } } (5 fields)	Document
(2) 6618348cab68bece86ab0478	{ item : "journal", qty : 25, size : { h : 14, w : 21, uom : "cm" }, status : "A" } (5 fields)	Document
(3) 6618348cab68bece86ab0479	{ item : "notebook", qty : 50, size : { h : 8.5, w : 11, uom : "in" }, status : "A" } (5 fields)	Document
(4) 6618348cab68bece86ab047a	{ item : "paper", qty : 100, size : { h : 8.5, w : 11, uom : "in" }, status : "D" } (5 fields)	Document
(5) 6618348cab68bece86ab047b	{ item : "planner", qty : 75, size : { h : 22.85, w : 30, uom : "cm" }, status : "D" } (5 fields)	Document
(6) 6618348cab68bece86ab047c	{ item : "postcard", qty : 45, size : { h : 10, w : 15.25, uom : "cm" }, status : "A" } (5 fields)	Document

To specify equality conditions, use `<field>:<value>` expressions in the query filter document

db.inventory.find({item : "canvas"})

```
db.inventory.find({item : "canvas"} )
```

inventory | 0.213 s | 1 Doc

ey	Value	Type
(1) 661828f5ab68bece86ab0462	{ item : "canvas", qty : 100, tags : ["cotton"], size : { h : 28, w : 35.5, uom : "cm" } } (5 fields)	Document
_id	661828f5ab68bece86ab0462	ObjectId
item	canvas	String
qty	100	Int32
tags	Array[1]	Array
0	cotton	String
size	{ h : 28, w : 35.5, uom : "cm" }	Object
h	28	Int32
w	35.5	Double
uom	cm	String

A query filter documents can use the query operators to specify conditions

$in

db.inventory.find({ status: { $in: ["A", "D"] } })

```
db.inventory.find( { status: { $in: [ "A", "D" ] } } )
```

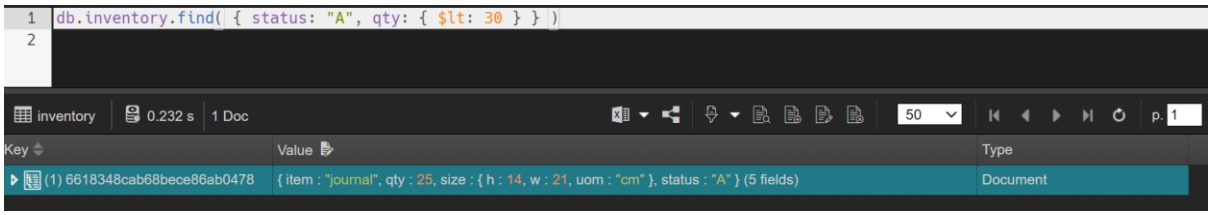
inventory | 0.275 s | 5 Docs

Key	Value	Type
(1) 6618348cab68bece86ab0478	{ item : "journal", qty : 25, size : { h : 14, w : 21, uom : "cm" }, status : "A" } (5 fields)	Document
(2) 6618348cab68bece86ab0479	{ item : "notebook", qty : 50, size : { h : 8.5, w : 11, uom : "in" }, status : "A" } (5 fields)	Document
(3) 6618348cab68bece86ab047a	{ item : "paper", qty : 100, size : { h : 8.5, w : 11, uom : "in" }, status : "D" } (5 fields)	Document
(4) 6618348cab68bece86ab047b	{ item : "planner", qty : 75, size : { h : 22.85, w : 30, uom : "cm" }, status : "D" } (5 fields)	Document
(5) 6618348cab68bece86ab047c	{ item : "postcard", qty : 45, size : { h : 10, w : 15.25, uom : "cm" }, status : "A" } (5 fields)	Document

A compound query can specify conditions for more than one field in the collection's documents

AND

db.inventory.find({ status: "A", qty: { $lt: 30 } })



OR

db.inventory.find({ $or: [{ status: "A" }, { qty: { $lt: 30 } }] })

Query on Embedded documents/NestedFields

To specify a query condition on fields in an embedded/nested document, use dot notation (`"field.nestedField"`)

db.inventory.find({ "size.uom": "in" })

db.inventory.find({ "size.h": { $lte: 10 } })

Query on Arrays

Inventory collection with array

db.inventoryarr.insertMany([

{ item: "journal", qty: 25, tags: ["blank", "red"], dim_cm: [14, 21] },

{ item: "notebook", qty: 50, tags: ["red", "blank"], dim_cm: [14, 21] },

{ item: "paper", qty: 100, tags: ["red", "blank", "plain"], dim_cm: [14, 21] },

{ item: "planner", qty: 75, tags: ["blank", "red"], dim_cm: [22.85, 30] },

{ item: "postcard", qty: 45, tags: ["blue"], dim_cm: [10, 15.25] }

]);

```
db.inventoryarr.insertMany([
   { item: "journal", qty: 25, tags: ["blank", "red"], dim_cm: [ 14, 21 ] },
   { item: "notebook", qty: 50, tags: ["red", "blank"], dim_cm: [ 14, 21 ] },
   { item: "paper", qty: 100, tags: ["red", "blank", "plain"], dim_cm: [ 14, 21 ] },
   { item: "planner", qty: 75, tags: ["blank", "red"], dim_cm: [ 22.85, 30 ] },
   { item: "postcard", qty: 45, tags: ["blue"], dim_cm: [ 10, 15.25 ] }
]);
```

0.380 s

Value	Type
(1)	{ } (2 fields)	Object
acknowledged	true	Bool
insertedIds	Array[5]	Array
0	66183903ab68bece86ab047d	ObjectId
1	66183903ab68bece86ab047e	ObjectId
2	66183903ab68bece86ab047f	ObjectId
3	66183903ab68bece86ab0480	ObjectId
4	66183903ab68bece86ab0481	ObjectId

To specify equality condition on an array

Queries for all documents where the field `tags` value is an array with exactly two elements, `"red"` and `"blank"`, in the specified order

db.inventoryarr.find({ tags: ["red", "blank"] })

```
db.inventoryarr.find( { tags: ["red", "blank"] } )
```

inventoryarr | 0.227 s | 1 Doc

Key	Value	Type
(1) 66183903ab68bece86ab047e	{ item : "notebook", qty : 50, tags : ["red", "blank"], dim_cm : [14, 21] } (5 fields)	Document

Query an array that contains both the elements `"red"` and `"blank"`, without regard to order or other elements in the array, use the $all operator

db.inventoryarr.find({ tags: { $all: ["red", "blank"] } })

```
db.inventoryarr.find( { tags: { $all: ["red", "blank"] } } )
```

inventoryarr | 0.231 s | 4 Docs

Key	Value	Type
(1) 66183903ab68bece86ab047d	{ item : "journal", qty : 25, tags : ["blank", "red"], dim_cm : [14, 21] } (5 fields)	Document
(2) 66183903ab68bece86ab047e	{ item : "notebook", qty : 50, tags : ["red", "blank"], dim_cm : [14, 21] } (5 fields)	Document
(3) 66183903ab68bece86ab047f	{ item : "paper", qty : 100, tags : ["red", "blank", "plain"], dim_cm : [14, 21] } (5 fields)	Document
(4) 66183903ab68bece86ab0480	{ item : "planner", qty : 75, tags : ["blank", "red"], dim_cm : [22.85, 30] } (5 fields)	Document

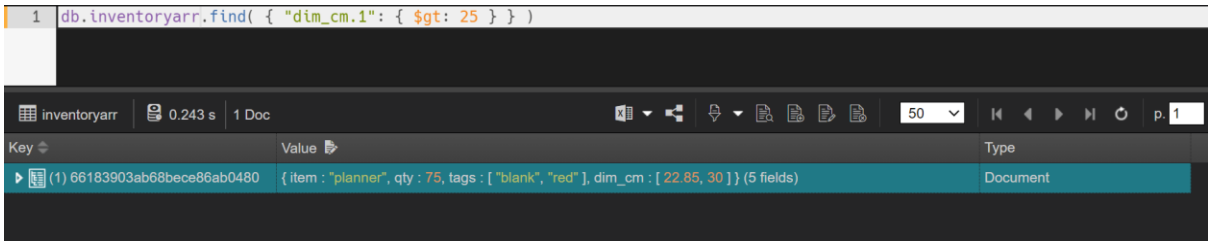
Query an array elements that meets multiple criteria

The $elemMatch operator matches documents that contain an array field with at least one element that matches all the specified query criteria

db.inventoryarr.find({ dim_cm: { $elemMatch: { $gt: 22, $lt: 30 } } })

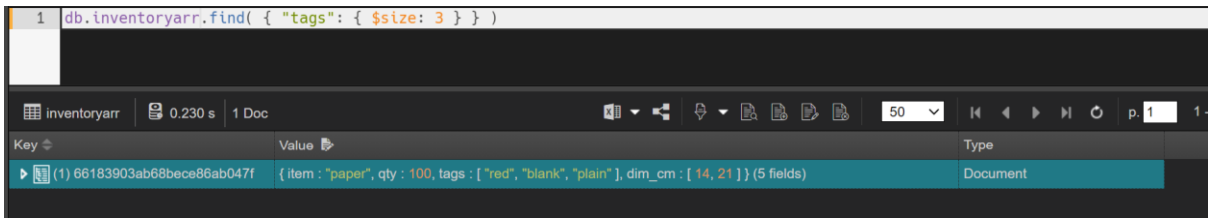
Query for an Element by the Array Index Position

db.inventoryarr.find({ "dim_cm.1": { $gt: 25 } })



Query an Array by Array Length

db.inventoryarr.find({ "tags": { $size: 3 } })



Query an Array on Embedded documents

db.inventoryembed.insertMany([

{ item: "journal", instock: [{ warehouse: "A", qty: 5 }, { warehouse: "C", qty: 15 }] },

{ item: "notebook", instock: [{ warehouse: "C", qty: 5 }] },

{ item: "paper", instock: [{ warehouse: "A", qty: 60 }, { warehouse: "B", qty: 15 }] },

{ item: "planner", instock: [{ warehouse: "A", qty: 40 }, { warehouse: "B", qty: 5 }] },

{ item: "postcard", instock: [{ warehouse: "B", qty: 15 }, { warehouse: "C", qty: 35 }] }]);

```
db.inventoryembed.insertMany( [
   { item: "journal", instock: [ { warehouse: "A", qty: 5 }, { warehouse: "C", qty: 15 } ] },
   { item: "notebook", instock: [ { warehouse: "C", qty: 5 } ] },
   { item: "paper", instock: [ { warehouse: "A", qty: 60 }, { warehouse: "B", qty: 15 } ] },
   { item: "planner", instock: [ { warehouse: "A", qty: 40 }, { warehouse: "B", qty: 5 } ] },
   { item: "postcard", instock: [ { warehouse: "B", qty: 15 }, { warehouse: "C", qty: 35 } ] }
]);
```

0.264 s

Key	Value	Type
(1)	{ } (2 fields)	Object
acknowledged	true	Bool
insertedIds	Array[5]	Array
0	661854bbab68bece86ab0482	ObjectId
1	661854bbab68bece86ab0483	ObjectId
2	661854bbab68bece86ab0484	ObjectId
3	661854bbab68bece86ab0485	ObjectId
4	661854bbab68bece86ab0486	ObjectId

Query

db.inventoryembed.find({ "instock": { warehouse: "A", qty: 5 } })

```
db.inventoryembed.find( { "instock": { warehouse: "A", qty: 5 } } )
```

inventoryembed | 0.202 s | 1 Doc | 50 | p. 1

Key	Value	Type
(1) 661854bbab68bece86ab0482	{ item : "journal", instock : [{ warehouse : "A", qty : 5 }, { warehouse : "C", qty : 15 }] }	Document

Specify a Query Condition on a Field Embedded in an Array of Documents

db.inventoryembed.find({ 'instock.qty': { $lt: 15 } })

```
db.inventoryembed.find( { 'instock.qty': { $lt: 15 } } )
```

inventoryembed | 0.202 s | 3 Docs | 50 | p. 1

Key	Value	Type
(1) 661854bbab68bece86ab0482	{ item : "journal", instock : [{ warehouse : "A", qty : 5 }, { warehouse : "C", qty : 15 }] }	Document
(2) 661854bbab68bece86ab0483	{ item : "notebook", instock : [{ warehouse : "C", qty : 5 }] }	Document
(3) 661854bbab68bece86ab0485	{ item : "planner", instock : [{ warehouse : "A", qty : 40 }, { warehouse : "B", qty : 5 }] }	Document

Use the Array Index to Query for a Field in the Embedded Document

db.inventoryembed.find({ 'instock.0.qty': { $lte: 15 } })

```
db.inventoryembed.find( { 'instock.0.qty': { $lte: 15 } } )
```

inventoryembed | 0.206 s | 3 Docs | 50

Key	Value	Type
(1) 661854bbab68bece86ab0482	{ item : "journal", instock : [{ warehouse : "A", qty : 5 }, { warehouse : "C", qty : 15 }] }	Document
(2) 661854bbab68bece86ab0483	{ item : "notebook", instock : [{ warehouse : "C", qty : 5 }] }	Document
(3) 661854bbab68bece86ab0486	{ item : "postcard", instock : [{ warehouse : "B", qty : 15 }, { warehouse : "C", qty : 35 }] }	Document

Update

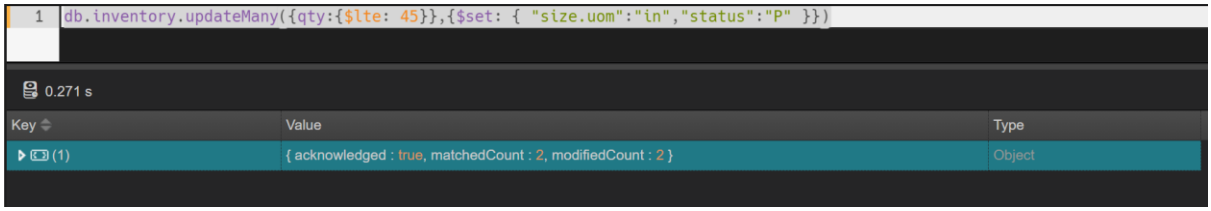
MongoDB provides the updateOne() or updateMany() methods to perform update operations.

updateOne

db.inventory.updateOne({ item: "paper" },{$set: { "size.uom": "cm", status: "P" }})

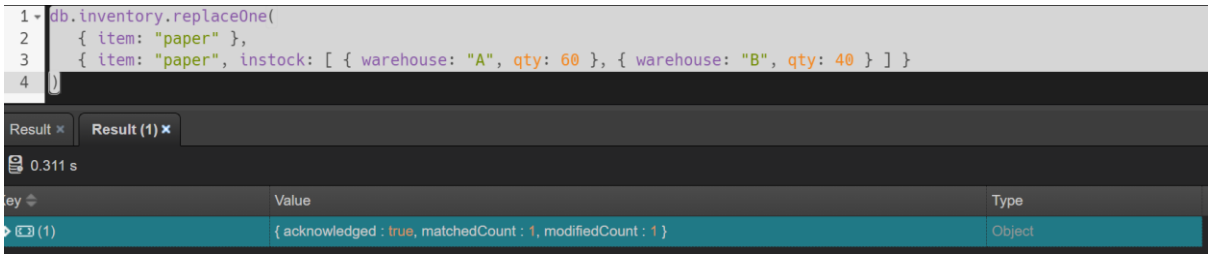
updateMany

db.inventory.updateMany({qty:{$lte: 45}},{$set: { "size.uom":"in","status":"P" }})



To replace the entire content of a document except for the _id field, pass an entirely new document as the second argument to db.collection.replaceOne()

db.inventory.replaceOne({ item: "paper" }, { item: "paper", instock: [{ warehouse: "A", qty: 60 }, { warehouse: "B", qty: 40 }] })



Delete

Deleting documents in MongoDB is done using the deleteOne() or deleteMany() methods.

deleteOne

db.inventory.deleteOne({ item: "canvas" })

deleteMany

db.inventory.deleteMany({ status : "P" })

```
db.inventory.deleteMany({ status : "P" })
```

0.221 s

Key	Value	Type
(1)	{ acknowledged : true, deletedCount : 2 }	Object

Aggregation Pipelines

```
db.orders.insertMany( [
   { _id: 0, name: "Pepperoni", size: "small", price: 19,
     quantity: 10, date: ISODate( "2021-03-13T08:14:30Z" ) },
   { _id: 1, name: "Pepperoni", size: "medium", price: 20,
     quantity: 20, date : ISODate( "2021-03-13T09:13:24Z" ) },
   { _id: 2, name: "Pepperoni", size: "large", price: 21,
     quantity: 30, date : ISODate( "2021-03-17T09:22:12Z" ) },
   { _id: 3, name: "Cheese", size: "small", price: 12,
     quantity: 15, date : ISODate( "2021-03-13T11:21:39.736Z" ) },
   { _id: 4, name: "Cheese", size: "medium", price: 13,
     quantity:50, date : ISODate( "2022-01-12T21:23:13.331Z" ) },
   { _id: 5, name: "Cheese", size: "large", price: 14,
     quantity: 10, date : ISODate( "2022-01-12T05:08:13Z" ) },
   { _id: 6, name: "Vegan", size: "small", price: 17,
     quantity: 10, date : ISODate( "2021-01-13T05:08:13Z" ) },
   { _id: 7, name: "Vegan", size: "medium", price: 18,
     quantity: 10, date : ISODate( "2021-01-13T05:10:13Z" ) }
] )
```

0.247 s

	Value	Type
(1)	{ acknowledged : true, insertedIds : [0, 1, 2, 3, 4, 5, 6, 7] }	Object

Calculate total order quantity of medium size pizzas grouped by pizza name

db.orders.aggregate([

// Stage 1: Filter pizza order documents by pizza size

{$match: { size: "medium" } },

// Stage 2: Group remaining documents by pizza name and calculate total quantity

{ $group: { _id: "$name", totalQuantity: { $sum: "$quantity" } }}])

```
db.orders.aggregate( [
   // Stage 1: Filter pizza order documents by pizza size
   {
    | $match: { size: "medium" }
   },
   // Stage 2: Group remaining documents by pizza name and calculate total quantity
   {
    | $group: { _id: "$name", totalQuantity: { $sum: "$quantity" } }
   }
] )
```

orders | 0.214 s | 3 Docs | 50 | p. 1

Key	Value	Type
(1) Cheese	{ totalQuantity : 50 }	Document
(2) Pepperoni	{ totalQuantity : 20 }	Document
(3) Vegan	{ totalQuantity : 10 }	Document

db.orders.aggregate([

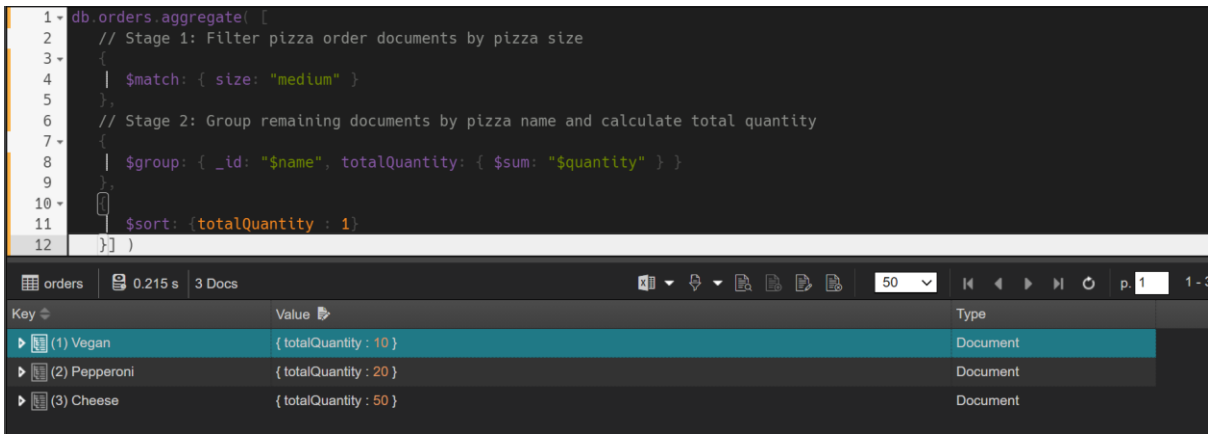
// Stage 1: Filter pizza order documents by pizza size

{ $match: { size: "medium" } },

// Stage 2: Group remaining documents by pizza name and calculate total quantity

{ $group: { _id: "$name", totalQuantity: { $sum: "$quantity" } }},

{ $sort: {totalQuantity : 1} }])



Joins and and $lookup

db.orders1.insertMany([{ "_id" : 1, "item" : "almonds", "price" : 12, "quantity" : 2 },

{ "_id" : 2, "item" : "pecans", "price" : 20, "quantity" : 1 }, { "_id" : 3 }])

db.inventory1.insertMany([{ "_id" : 1, "sku" : "almonds", "description": "product 1", "instock" : 120 }, { "_id" : 2, "sku" : "bread", "description": "product 2", "instock" : 80 },{ "_id" : 3, "sku" : "cashews", "description": "product 3", "instock" : 60 }, { "_id" : 4, "sku" : "pecans", "description": "product 4", "instock" : 70 },{ "_id" : 5, "sku": null, "description": "Incomplete" }, { "_id" : 6 }])

Single equality join with $lookup

db.orders1.aggregate([

{ $lookup:

{

from: "inventory1",

localField: "item",

foreignField: "sku",

as: "inventory_docs"

}

}])

```
db.orders1.aggregate( [
  {
    $lookup:
      {
        from: "inventory1",
        localField: "item",
        foreignField: "sku",
        as: "inventory_docs"
      }
  }
] )
```

Result × Aggregate ×

orders1 | 0.223 s | 3 Docs

50 | p. 1 | 1 - 3

Key	Value	Type
(1) 1	{ item : "almonds", price : 12, quantity : 2 } (5 fields)	Document
_id	1	Int32
item	almonds	String
price	12	Int32
quantity	2	Int32
inventory_docs	Array[1]	Array
0	{ _id : 1, sku : "almonds", description : "product 1", instock : 120 } (4 fields)	Object
(2) 2	{ item : "pecans", price : 20, quantity : 1 } (5 fields)	Document
(3) 3	{ inventory_docs : [{ _id : 5, sku : null, description : "Incomplete" }, { _id : 6 }] }	Document