

DAW2 - M2. Bases de dades

UF4. MongoDB

Activitat consultes 3

Insereix aquests documents a la col·lecció inventory:

```
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"
},
  { item: "notepad", qty: 15, size: { w: 15.25, h: 10, uom: "cm" }, status:
"A" }
]);
```

1. Troba els elements de l'inventari amb una alçada de 10 cm, i una amplada de 15.25 cm.

```
> db.inventory.find({ "size.h" : 10, "size.w" : 15.25 })
{ "_id" : ObjectId("5eac4c9e25b93c8b6aaf0a69"), "item" : "postcard", "qty" : 45, "size" : { "h" : 10, "w" : 15.25, "uom" : "cm" }, "status" : "A" }
{ "_id" : ObjectId("5eac4c9e25b93c8b6aaf0a6a"), "item" : "notepad", "qty" : 15, "size" : { "w" : 15.25, "h" : 10, "uom" : "cm" }, "status" : "A" }
```

2. Inclou també aquells que tenen les mateixes mides que la consulta 1, però a la bd poden estar amb cm o polzades.

```
> db.inventory.find( { "size.h" : 10, "size.w" : 15.25, "size.uom": { $in: ["cm", "in"] } } )
{ "_id" : ObjectId("5eac4c9e25b93c8b6aaf0a69"), "item" : "postcard", "qty" : 45, "size" : { "h" : 10, "w" : 15.25, "uom" : "cm" }, "status" : "A" }
{ "_id" : ObjectId("5eac4c9e25b93c8b6aaf0a6a"), "item" : "notepad", "qty" : 15, "size" : { "w" : 15.25, "h" : 10, "uom" : "cm" }, "status" : "A" }
```

3. Troba els elements l'amplada dels quals sigui major que 16.

```
> db.inventory.find( { "size.w" : { $gt: 16 } } )
{ "_id" : ObjectId("5eac4c9e25b93c8b6aaf0a65"), "item" : "journal", "qty" : 25, "size" : { "h" : 14, "w" : 21, "uom" : "cm" }, "status" : "A" }
{ "_id" : ObjectId("5eac4c9e25b93c8b6aaf0a68"), "item" : "planner", "qty" : 75, "size" : { "h" : 22.85, "w" : 30, "uom" : "cm" }, "status" : "D" }
```

4. Troba els elements l'amplada dels quals sigui major que 16 cm.

```
> db.inventory.find( { "size.w" : { $gt: 16 }, "size.uom": "cm" } )
{ "_id" : ObjectId("5eac4c9e25b93c8b6aaf0a65"), "item" : "journal", "qty" : 25, "size" : { "h" : 14, "w" : 21, "uom" : "cm" }, "status" : "A" }
{ "_id" : ObjectId("5eac4c9e25b93c8b6aaf0a68"), "item" : "planner", "qty" : 75, "size" : { "h" : 22.85, "w" : 30, "uom" : "cm" }, "status" : "D" }
```

5. Troba els elements amb amplada major que 16 i alçada menor que 15.

```
> db.inventory.find( { "size.w" : { $gt: 16 }, "size.h" : { $lt: 15 } } )
{ "_id" : ObjectId("5eac4c9e25b93c8b6aaf0a65"), "item" : "journal", "qty" : 25, "size" : { "h" : 14, "w" : 21, "uom" : "cm" }, "status" : "A" }
```

6. Troba els elements amb la unitat de mesura en cm i una quantitat superior a 30.

```
> db.inventory.find( { "size.uom": "cm", "qty": { "$gt": 30 } } )
{ "_id" : ObjectId("5eac4c9e25b93c8b6aaf0a68"), "item" : "planner", "qty" : 75, "size" : { "h" : 22.85, "w" : 30, "uom" : "cm" }, "status" : "D" }
{ "_id" : ObjectId("5eac4c9e25b93c8b6aaf0a69"), "item" : "postcard", "qty" : 45, "size" : { "h" : 10, "w" : 15.25, "uom" : "cm" }, "status" : "A" }
```

Esborra la colecció i insereix nous elements:

```
db.inventory.drop();
db.inventory.insertMany([
  { item: "journal", qty: 25, tags: ["blue", "red"], dim_cm: [ 14, 21 ] },
  { item: "notebook", qty: 50, tags: ["red", "blue"], dim_cm: [ 14, 21 ] },
  { item: "paper", qty: 100, tags: ["red", "blue", "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 ] },
  { item: "notepad", qty: 100, tags: ["yellow", "blue"], dim_cm: [ 15, 21 ] }
]);
```

7. Troba els elements de l'inventari amb el tag "blue".

```
> db.inventory.find( { tags: "blue" } )
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6b"), "item" : "journal", "qty" : 25, "tags" : [ "blue", "red" ], "dim_cm" : [ 14, 21 ] }
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6c"), "item" : "notebook", "qty" : 50, "tags" : [ "red", "blue" ], "dim_cm" : [ 14, 21 ] }
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6d"), "item" : "paper", "qty" : 100, "tags" : [ "red", "blue", "plain" ], "dim_cm" : [ 14, 21 ] }
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6e"), "item" : "planner", "qty" : 75, "tags" : [ "blue", "red" ], "dim_cm" : [ 22.85, 30 ] }
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6f"), "item" : "postcard", "qty" : 45, "tags" : [ "blue" ], "dim_cm" : [ 10, 15.25 ] }
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a70"), "item" : "notepad", "qty" : 100, "tags" : [ "yellow", "blue" ], "dim_cm" : [ 15, 21 ] }
```

8. Troba els elements de l'inventari amb els tags "blue" i "red".

```
> db.inventory.find( { $and: [ { tags: "blue" }, { tags: "red" } ] } )
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6b"), "item" : "journal", "qty" : 25, "tags" : [ "blue", "red" ], "dim_cm" : [ 14, 21 ] }
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6c"), "item" : "notebook", "qty" : 50, "tags" : [ "red", "blue" ], "dim_cm" : [ 14, 21 ] }
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6d"), "item" : "paper", "qty" : 100, "tags" : [ "red", "blue", "plain" ], "dim_cm" : [ 14, 21 ] }
```

9. Troba els elements de l'inventari amb els tags "blue" o "red".

```
> db.inventory.find( { $or: [ { tags: "blue" }, { tags: "red" } ] } )
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6b"), "item" : "journal", "qty" : 25, "tags" : [ "blue", "red" ], "dim_cm" : [ 14, 21 ] }
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6c"), "item" : "notebook", "qty" : 50, "tags" : [ "red", "blue" ], "dim_cm" : [ 14, 21 ] }
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6d"), "item" : "paper", "qty" : 100, "tags" : [ "red", "blue", "plain" ], "dim_cm" : [ 14, 21 ] }
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6e"), "item" : "planner", "qty" : 75, "tags" : [ "blank", "red" ], "dim_cm" : [ 22.85, 30 ] }
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6f"), "item" : "postcard", "qty" : 45, "tags" : [ "blue" ], "dim_cm" : [ 10, 15.25 ] }
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a70"), "item" : "notepad", "qty" : 100, "tags" : [ "yellow", "blue" ], "dim_cm" : [ 15, 21 ] }
```

10. Troba els elements de l'inventari amb els tags "blue" i "red" només, és a dir, i cap tag més.

```
> db.inventory.find( { $and: [ { tags: "blue" }, { tags: "red" } ], "tags": { "$size": 2 } } )
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6b"), "item" : "journal", "qty" : 25, "tags" : [ "blue", "red" ], "dim_cm" : [ 14, 21 ] }
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6c"), "item" : "notebook", "qty" : 50, "tags" : [ "red", "blue" ], "dim_cm" : [ 14, 21 ] }
```

11. L'alçada s'enmagatzema a la primera posició de l'array, i la amplada a la segona. Troba tots els elements amb amplada igual a 21 i alçada igual a 14.

```
> db.inventory.find( { "dim_cm.0": 14, "dim_cm.1": 21 } )
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6b"), "item" : "journal", "qty" : 25, "tags" : [ "blue", "red" ], "dim_cm" : [ 14, 21 ] }
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6c"), "item" : "notebook", "qty" : 50, "tags" : [ "red", "blue" ], "dim_cm" : [ 14, 21 ] }
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6d"), "item" : "paper", "qty" : 100, "tags" : [ "red", "blue", "plain" ], "dim_cm" : [ 14, 21 ] }
```

12. Troba els elements amb alçada superior a 20 i inferior a 30.

```
> db.inventory.find( { $and: [ { "dim_cm.0": { $gt: 20 } }, { "dim_cm.0": { $lt: 30 } } ] } )  
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6e"), "item" : "planner", "qty" : 75, "tags" : [ "blank", "red" ], "dim_cm" : [ 22.85, 30 ] }  
>
```

13. Troba els elements amb una dimensió (alçada o amplada) superior a 20 i inferior a 30.

```
> db.inventory.find( { $and: [ { dim_cm: { $gt: 20 } }, { dim_cm: { $lt: 30 } } ] } )  
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6b"), "item" : "journal", "qty" : 25, "tags" : [ "blue", "red" ], "dim_cm" : [ 14, 21 ] }  
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6c"), "item" : "notebook", "qty" : 50, "tags" : [ "red", "blue" ], "dim_cm" : [ 14, 21 ] }  
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6d"), "item" : "paper", "qty" : 100, "tags" : [ "red", "blue", "plain" ], "dim_cm" : [ 14, 21 ] }  
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a6e"), "item" : "planner", "qty" : 75, "tags" : [ "blank", "red" ], "dim_cm" : [ 22.85, 30 ] }  
{ "_id" : ObjectId("5eac57cc25b93c8b6aaf0a70"), "item" : "notepad", "qty" : 100, "tags" : [ "yellow", "blue" ], "dim_cm" : [ 15, 21 ] }  
>
```

14. Quins elements tenen un array tags amb 3 elements?

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

15. Troba tots els elements que en algun dels magatzems tenen una quantitat inferior a 10.

```
> db.inventory.find( { "stock.qty": { $lt: 10 } } )
{ "_id" : ObjectId("5eac6228d3387164b1ee96e7"), "item" : "journal", "stock" : [ { "warehouse" : "A", "qty" : 5 }, { "warehouse" : "C", "qty" : 15 } ] }
{ "_id" : ObjectId("5eac6228d3387164b1ee96e8"), "item" : "notebook", "stock" : [ { "warehouse" : "C", "qty" : 5 } ] }
{ "_id" : ObjectId("5eac6228d3387164b1ee96ea"), "item" : "planner", "stock" : [ { "warehouse" : "A", "qty" : 40 }, { "warehouse" : "B", "qty" : 5 } ] }
```

16. Troba tots els elements que en el primer magatzem o principal tenen una quantitat inferior a 10.

```
> db.inventory.find( { "stock.0.qty": { $lt: 10 } } )
{ "_id" : ObjectId("5eac6228d3387164b1ee96e7"), "item" : "journal", "stock" : [ { "warehouse" : "A", "qty" : 5 }, { "warehouse" : "C", "qty" : 15 } ] }
{ "_id" : ObjectId("5eac6228d3387164b1ee96e8"), "item" : "notebook", "stock" : [ { "warehouse" : "C", "qty" : 5 } ] }
```

17. Troba els elements que tenen una quantitat major o igual que 15 al magatzem B.

```
> db.inventory.find( { "stock": { $elemMatch: { warehouse: "B", qty: { $gte: 15 } } } } )
{ "_id" : ObjectId("5eac6228d3387164b1ee96e9"), "item" : "paper", "stock" : [ { "warehouse" : "A", "qty" : 60 }, { "warehouse" : "B", "qty" : 15 } ] }
{ "_id" : ObjectId("5eac6228d3387164b1ee96eb"), "item" : "postcard", "stock" : [ { "warehouse" : "B", "qty" : 15 }, { "warehouse" : "C", "qty" : 35 } ] }
```

18. Troba tots els elements que en algun dels magatzems tenen una quantitat més gran que 10 i menor que 40.

```
> db.inventory.find( { stock: { $elemMatch: { $and: [{ qty: { $gt: 10 } }, { qty: { $lt: 40 } } ] } } } )
{ "_id" : ObjectId("5eac6228d3387164b1ee96e7"), "item" : "journal", "stock" : [ { "warehouse" : "A", "qty" : 5 }, { "warehouse" : "C", "qty" : 15 } ] }
{ "_id" : ObjectId("5eac6228d3387164b1ee96e9"), "item" : "paper", "stock" : [ { "warehouse" : "A", "qty" : 60 }, { "warehouse" : "B", "qty" : 15 } ] }
{ "_id" : ObjectId("5eac6228d3387164b1ee96eb"), "item" : "postcard", "stock" : [ { "warehouse" : "B", "qty" : 15 }, { "warehouse" : "C", "qty" : 35 } ] }
```