

```
> show dbs
admin    0.000GB
config  0.000GB
local    0.000GB
> use shop
switched to db shop
> db.products.insertOne({name: "A Book", price: 12.99})
{
  "acknowledged" : true,
  "insertedId" : ObjectId("5ba3427e34cdfa88cd5c2a6a")
}
> db.products.find()
{ "_id" : ObjectId("5ba3427e34cdfa88cd5c2a6a"), "name" : "A Book", "price" : 12.99 }
> db.products.find().pretty()
{
  "_id" : ObjectId("5ba3427e34cdfa88cd5c2a6a"),
  "name" : "A Book",
  "price" : 12.99
}
> db.products.insertOne({name: "A T-Shirt", price: 29.99, description: "This is a high q" })
```

```
> db.products.find().pretty()  
{  
  "_id" : ObjectId("5ba3427e34cdfa88cd5c2a6a"),  
  "name" : "A Book",  
  "price" : 12.99  
}  
{  
  "_id" : ObjectId("5ba342ef34cdfa88cd5c2a6b"),  
  "name" : "A T-Shirt",  
  "price" : 29.99,  
  "description" : "This is a high quality T-Shirt"  
}  
> █
```

```
}
> db.products.insertOne({name: "A Computer", price: 1229.99, description: "A high quality computer.",
details: {cpu: "Intel i7 8770", memory: 32}})
{
  "acknowledged" : true,
  "insertedId" : ObjectId("5ba3433c34cdfa88cd5c2a6c")
}
```

```
}
> db.products.find().pretty()
{
  "_id" : ObjectId("5ba3427e34cdfa88cd5c2a6a"),
  "name" : "A Book",
  "price" : 12.99
}
{
  "_id" : ObjectId("5ba342ef34cdfa88cd5c2a6b"),
  "name" : "A T-Shirt",
  "price" : 29.99,
  "description" : "This is a high quality T-Shirt"
}
{
  "_id" : ObjectId("5ba3433c34cdfa88cd5c2a6c"),
  "name" : "A Computer",
  "price" : 1229.99,
  "description" : "A high quality computer.",
  "details" : {
    "cpu" : "Intel i7 8770",
    "memory" : 32
  }
}
>
```

```
> db.flightData.insertOne({departureAirport: "TXL", arrivalAirport: "LHR", _id: "txl-lhr-1"})
{ "acknowledged" : true, "insertedId" : "txl-lhr-1" }
> db.flightData.find().pretty()
{
  "_id" : ObjectId("5b97827de62da95ae64206a8"),
  "departureAirport" : "MUC",
  "arrivalAirport" : "SFO",
  "aircraft" : "Airbus A380",
  "distance" : 12000,
  "intercontinental" : true
}
{
  "_id" : ObjectId("5b9783d7e62da95ae64206a9"),
  "departureAirport" : "TXL",
  "arrivalAirport" : "LHR"
}
{
  "_id" : "txl-lhr-1",
  "departureAirport" : "TXL",
  "arrivalAirport" : "LHR"
}
>
```

```

> db.flightData.find()
{ "_id" : ObjectId("5b97827de62da95ae64206a8"), "departureAirport" : "MUC", "arrivalAirport" : "SFO",
"aircraft" : "Airbus A380", "distance" : 12000, "intercontinental" : true }
{ "_id" : ObjectId("5b9783d7e62da95ae64206a9"), "departureAirport" : "TXL", "arrivalAirport" : "LHR" }
{ "_id" : "txl-lhr-1", "departureAirport" : "TXL", "arrivalAirport" : "LHR" }
> db.flightData.find().pretty()
{
  "_id" : ObjectId("5b97827de62da95ae64206a8"),
  "departureAirport" : "MUC",
  "arrivalAirport" : "SFO",
  "aircraft" : "Airbus A380",
  "distance" : 12000,
  "intercontinental" : true
}
{
  "_id" : ObjectId("5b9783d7e62da95ae64206a9"),
  "departureAirport" : "TXL",
  "arrivalAirport" : "LHR"
}
{
  "_id" : "txl-lhr-1",
  "departureAirport" : "TXL",
  "arrivalAirport" : "LHR"
}
> db.flightData.deleteOne({departureAirport: "TXL"})
{ "acknowledged" : true, "deletedCount" : 1 }
```



```
> db.flightData.updateOne({distance: 12000}, {$set: {marker: "delete"}})
{ "acknowledged" : true, "matchedCount" : 1, "modifiedCount" : 1 }
> db.flightData.find().pretty()
{
  "_id" : ObjectId("5b97827de62da95ae64206a8"),
  "departureAirport" : "MUC",
  "arrivalAirport" : "SFO",
  "aircraft" : "Airbus A380",
  "distance" : 12000,
  "intercontinental" : true,
  "marker" : "delete"
}
{
  "_id" : "txl-lhr-1",
  "departureAirport" : "TXL",
  "arrivalAirport" : "LHR"
}
```

```
> db.flightData.updateMany({}, {$set: {marker: "toDelete"}})
{ "acknowledged" : true, "matchedCount" : 2, "modifiedCount" : 2 }
> db.flightData.find().pretty()
{
  "_id" : ObjectId("5b97827de62da95ae64206a8"),
  "departureAirport" : "MUC",
  "arrivalAirport" : "SFO",
  "aircraft" : "Airbus A380",
  "distance" : 12000,
  "intercontinental" : true,
  "marker" : "toDelete"
}
{
  "_id" : "txl-lhr-1",
  "departureAirport" : "TXL",
  "arrivalAirport" : "LHR",
  "marker" : "toDelete"
}
>
```



```
> db.flightData.deleteMany({marker: "toDelete"})  
{ "acknowledged" : true, "deletedCount" : 2 }  
>
```

```

> db.flightData.find()
> db.flightData.insertMany([
...   {
...     "departureAirport": "MUC",
...     "arrivalAirport": "SFO",
...     "aircraft": "Airbus A380",
...     "distance": 12000,
...     "intercontinental": true
...   },
...   {
...     "departureAirport": "LHR",
...     "arrivalAirport": "TXL",
...     "aircraft": "Airbus A320",
...     "distance": 950,
...     "intercontinental": false
...   }
... ])
{
  "acknowledged" : true,
  "insertedIds" : [
    ObjectId("5b97882ce62da95ae64206ab"),
    ObjectId("5b97882ce62da95ae64206ac")
  ]
}
> █

```

```
> db.flightData.find({name: "Max"})
> db.flightData.find({intercontinental: true}).pretty()
{
  "_id" : ObjectId("5b97882ce62da95ae64206ab"),
  "departureAirport" : "MUC",
  "arrivalAirport" : "SFO",
  "aircraft" : "Airbus A380",
  "distance" : 12000,
  "intercontinental" : true
}
> db.flightData.find({distance: 12000})
{ "_id" : ObjectId("5b97882ce62da95ae64206ab"), "departureAirport" : "MUC", "arrivalAirport" : "SFO",
  "aircraft" : "Airbus A380", "distance" : 12000, "intercontinental" : true }
> db.flightData.find({distance: {$gt: 10000}})
{ "_id" : ObjectId("5b97882ce62da95ae64206ab"), "departureAirport" : "MUC", "arrivalAirport" : "SFO",
  "aircraft" : "Airbus A380", "distance" : 12000, "intercontinental" : true }
> db.flightData.find({distance: {$gt: 10000}}).pretty()
{
  "_id" : ObjectId("5b97882ce62da95ae64206ab"),
  "departureAirport" : "MUC",
  "arrivalAirport" : "SFO",
  "aircraft" : "Airbus A380",
  "distance" : 12000,
  "intercontinental" : true
}
>
```

```
> db.flightData.findOne({distance: {$gt: 900}})
{
  "_id" : ObjectId("5b97882ce62da95ae64206ab"),
  "departureAirport" : "MUC",
  "arrivalAirport" : "SFO",
  "aircraft" : "Airbus A380",
  "distance" : 12000,
  "intercontinental" : true
}
> █
```

```
> db.flightData.update({_id: ObjectId("5b97882ce62da95ae64206ab")}, {delayed: false})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.flightData.find().pretty()
{ "_id" : ObjectId("5b97882ce62da95ae64206ab"), "delayed" : false }
{
  "_id" : ObjectId("5b97882ce62da95ae64206ac"),
  "departureAirport" : "LHR",
  "arrivalAirport" : "TXL",
  "aircraft" : "Airbus A320",
  "distance" : 950,
  "intercontinental" : false
}
```

```
> db.flightData.replaceOne({_id: ObjectId("5b97882ce62da95ae64206ab")}, {
...   "departureAirport": "MUC",
...   "arrivalAirport": "SFO",
...   "aircraft": "Airbus A380",
...   "distance": 12000,
...   "intercontinental": true
... })
{ "acknowledged" : true, "matchedCount" : 1, "modifiedCount" : 1 }
> db.flightData.find().pretty()
{
  "_id" : ObjectId("5b97882ce62da95ae64206ab"),
  "departureAirport" : "MUC",
  "arrivalAirport" : "SFO",
  "aircraft" : "Airbus A380",
  "distance" : 12000,
  "intercontinental" : true
}
{
  "_id" : ObjectId("5b97882ce62da95ae64206ac"),
  "departureAirport" : "LHR",
  "arrivalAirport" : "TXL",
  "aircraft" : "Airbus A320",
  "distance" : 950,
  "intercontinental" : false
}
>
```



```
}
Type "it" for more
> it
{
  "_id" : ObjectId("5b978c66e62da95ae64206c1"),
  "name" : "Gordon Black",
  "age" : 38
}
> db.passengers.find()
```

```
> db.passengers.find().toArray()
```

```
[
```

```
{
```

```
  "_id" : ObjectId("5b978c66e62da95ae64206ad"),
```

```
  "name" : "Max Schwarzmueeller",
```

```
  "age" : 29
```

```
},
```

```
{
```

```
  "_id" : ObjectId("5b978c66e62da95ae64206ae"),
```

```
  "name" : "Manu Lorenz",
```

```
  "age" : 30
```

```
},
```

```
{
```

```
]
> db.passengers.find().forEach((passengerData) => {printjson(passengerData)})
{
  "_id" : ObjectId("5b978c66e62da95ae64206ad"),
  "name" : "Max Schwarzmueller",
  "age" : 29
}
{
  "_id" : ObjectId("5b978c66e62da95ae64206ae"),
  "name" : "Manu Lorenz",
  "age" : 30
}
{
  "_id" : ObjectId("5b978c66e62da95ae64206af"),
  "name" : "Chris Hayton",
  "age" : 35
}
```

```
> db.passengers.find({}, {name: 1}).pretty()
{
  "_id" : ObjectId("5b978c66e62da95ae64206ad"),
  "name" : "Max Schwarzmueeller"
}
{ "_id" : ObjectId("5b978c66e62da95ae64206ae"), "name" : "Manu Lorenz" }
{ "_id" : ObjectId("5b978c66e62da95ae64206af"), "name" : "Chris Hayton" }
{ "_id" : ObjectId("5b978c66e62da95ae64206b0"), "name" : "Sandeep Kumar" }
{ "_id" : ObjectId("5b978c66e62da95ae64206b1"), "name" : "Maria Jones" }
{ "_id" : ObjectId("5b978c66e62da95ae64206b2"), "name" : "Alexandra Maier" }
{ "_id" : ObjectId("5b978c66e62da95ae64206b3"), "name" : "Dr. Phil Evans" }
{ "_id" : ObjectId("5b978c66e62da95ae64206b4"), "name" : "Sandra Brugge" }
{ "_id" : ObjectId("5b978c66e62da95ae64206b5"), "name" : "Elisabeth Mayr" }
{ "_id" : ObjectId("5b978c66e62da95ae64206b6"), "name" : "Frank Cube" }
{ "_id" : ObjectId("5b978c66e62da95ae64206b7"), "name" : "Karandeep Alun" }
{ "_id" : ObjectId("5b978c66e62da95ae64206b8"), "name" : "Michaela Drayer" }
{ "_id" : ObjectId("5b978c66e62da95ae64206b9"), "name" : "Bernd Hoftstadt" }
{ "_id" : ObjectId("5b978c66e62da95ae64206ba"), "name" : "Scott Tolib" }
{ "_id" : ObjectId("5b978c66e62da95ae64206bb"), "name" : "Freddy Melfer" }
{ "_id" : ObjectId("5b978c66e62da95ae64206bc"), "name" : "Alexis Bohed" }
{ "_id" : ObjectId("5b978c66e62da95ae64206bd"), "name" : "Melanie Palace" }
{ "_id" : ObjectId("5b978c66e62da95ae64206be"), "name" : "Armin Glutch" }
{ "_id" : ObjectId("5b978c66e62da95ae64206bf"), "name" : "Klaus Arber" }
{ "_id" : ObjectId("5b978c66e62da95ae64206c0"), "name" : "Albert Twostone" }
Type "it" for more
```

```
> db.passengers.find({}, {name: 1, _id: 0}).pretty()
{ "name" : "Max SchwarzmueLLer" }
{ "name" : "Manu Lorenz" }
{ "name" : "Chris Hayton" }
{ "name" : "Sandeep Kumar" }
{ "name" : "Maria Jones" }
{ "name" : "Alexandra Maier" }
{ "name" : "Dr. Phil Evans" }
{ "name" : "Sandra Brugge" }
{ "name" : "Elisabeth Mayr" }
{ "name" : "Frank Cube" }
{ "name" : "Karandeep Alun" }
{ "name" : "Michaela Drayer" }
{ "name" : "Bernd Hoftstadt" }
{ "name" : "Scott Tolib" }
{ "name" : "Freddy Melfer" }
{ "name" : "Alexis Bohed" }
{ "name" : "Melanie Palace" }
{ "name" : "Armin Glutch" }
{ "name" : "Klaus Arber" }
{ "name" : "Albert Twostone" }
Type "it" for more
```



```
> db.flightData.updateMany({}, {$set: {status: {description: "on-time", lastUpdated: "1 hour ago"}}})
{ "acknowledged" : true, "matchedCount" : 2, "modifiedCount" : 2 }
> db.flightData.find().pretty()
{
  "_id" : ObjectId("5b97882ce62da95ae64206ab"),
  "departureAirport" : "MUC",
  "arrivalAirport" : "SFO",
  "aircraft" : "Airbus A380",
  "distance" : 12000,
  "intercontinental" : true,
  "status" : {
    "description" : "on-time",
    "lastUpdated" : "1 hour ago"
  }
}
{
  "_id" : ObjectId("5b97882ce62da95ae64206ac"),
  "departureAirport" : "LHR",
  "arrivalAirport" : "TXL",
  "aircraft" : "Airbus A320",
  "distance" : 950,
  "intercontinental" : false,
  "status" : {
    "description" : "on-time",
    "lastUpdated" : "1 hour ago"
  }
}
>
```



```
> db.flightData.updateMany({}, {$set: {status: {description: "on-time", lastUpdated: "1 hour ago", details: {responsible: "Max Schwarzmueeller"}}}})
```

```
"arrivalAirport" : "SFO",  
"aircraft" : "Airbus A380",  
"distance" : 12000,  
"intercontinental" : true,  
"status" : {  
  "description" : "on-time",  
  "lastUpdated" : "1 hour ago",  
  "details" : {  
    "responsible" : "Max SchwarzmueLLer"  
  }  
}  
}
```

```
{  
  "_id" : ObjectId("5b97882ce62da95ae64206ac"),  
  "departureAirport" : "LHR",  
  "arrivalAirport" : "TXL",  
  "aircraft" : "Airbus A320",  
  "distance" : 950,  
  "intercontinental" : false,  
  "status" : {  
    "description" : "on-time",  
    "lastUpdated" : "1 hour ago",  
    "details" : {  
      "responsible" : "Max SchwarzmueLLer"  
    }  
  }  
}
```

```
> db.passengers.updateOne({name: "Albert Twostone"}, {$set: {hobbies: ["sports", "cooking"]}})
```

```
"age" : 53
```

```
}  
{
```

```
"_id" : ObjectId("5b978c66e62da95ae64206c0"),
```

```
"name" : "Albert Twostone",
```

```
"age" : 68,
```

```
"hobbies" : [
```

```
    "sports",
```

```
    "cooking"
```

```
]
```

```
}
```

```
> db.passengers.find({name: "Albert Twostone"}).pretty()
{
  "_id" : ObjectId("5b978c66e62da95ae64206c0"),
  "name" : "Albert Twostone",
  "age" : 68,
  "hobbies" : [
    "sports",
    "cooking"
  ]
}
> db.passengers.findOne({name: "Albert Twostone"}).hobbies
[ "sports", "cooking" ]
> db.passengers.find({hobbies: "sports"}).pretty()
{
  "_id" : ObjectId("5b978c66e62da95ae64206c0"),
  "name" : "Albert Twostone",
  "age" : 68,
  "hobbies" : [
    "sports",
    "cooking"
  ]
}
>
```

```
> db.flightData.find({"status.description": "on-time"}).pretty()
{
  "_id" : ObjectId("5b97882ce62da95ae64206ab"),
  "departureAirport" : "MUC",
  "arrivalAirport" : "SFO",
  "aircraft" : "Airbus A380",
  "distance" : 12000,
  "intercontinental" : true,
  "status" : {
    "description" : "on-time",
    "lastUpdated" : "1 hour ago",
    "details" : {
      "responsible" : "Max Schwarzmueeller"
    }
  }
}
{
  "_id" : ObjectId("5b97882ce62da95ae64206ac"),
```



```
{
  "_id" : ObjectId("5b97882ce62da95ae64206ac"),
  "departureAirport" : "LHR",
  "arrivalAirport" : "TXL",
  "aircraft" : "Airbus A320",
  "distance" : 950,
  "intercontinental" : false,
  "status" : {
    "description" : "on-time",
    "lastUpdated" : "1 hour ago",
    "details" : {
      "responsible" : "Max SchwarzmueLLer"
    }
  }
}
> db.flightData.find({"status.details.responsible": "Max SchwarzmueLLer"}).pretty()
```