CRUD Operations 2

```
mongos>  use cars

mongos> db.list2.find({},{_id:0})
{ "brand" : "Toyota", "model" : "Supra", "engine" : "Petrol", "gearbox" : "Auto" }
{ "brand" : "Toyota", "model" : "Camry", "engine" : "Petrol", "gearbox" : "Auto", "mileage" :
120000, "year" : 2010 }
{ "brand" : "Honda", "model" : "CR-V", "engine" : "Hybrid", "gearbox" : "CVT" }
{ "brand" : "Honda", "model" : "Civic", "engine" : "Petrol", "gearbox" : "Auto", "mileage" : 5000,
"year" : 2019 }
{ "brand" : "Toyota", "model" : "Corolla", "engine" : "Petrol", "gearbox" : "Manual", "mileage" :
NumberLong(200000), "year" : 2000 }
{ "brand" : "Honda", "model" : "Accord", "engine" : "Diesel", "gearbox" : "CVT", "mileage" :
NumberLong(65000), "year" : 2010 }
{ "brand" : "Lexus", "model" : "RX350H", "engine" : "Hybrid", "gearbox" : "CVT", "mileage" :
7000, "year" : 2018 }
{ "brand" : "Nissan", "model" : "Leaf", "engine" : "Electric", "gearbox" : "CVT", "mileage" :
15000, "year" : 2010 }
{ "brand" : "Ford", "model" : "F-150", "engine" : "Petrol", "gearbox" : "Auto", "mileage" : 27000,
"year" : 2015 }
{ "brand" : "Honda", "model" : "Civic", "engine" : "Diesel", "gearbox" : "Manual", "mileage" :
35000, "year" : 2016 }

mongos> db.list2.update({model:'Supra'},{$set:{gearbox:'Auto'}},{})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })


mongos> db.list2.findOne()
{
        "_id" : ObjectId("60ad973fc5218b4d37b144b4"),
        "brand" : "Honda",
        "model" : "Civic",
        "engine" : "Diesel",
        "gearbox" : "Manual",
        "mileage" : 35000,
        "year" : 2016
}

mongos>
db.list2.update({_id:ObjectId("60ad973fc5218b4d37b144b4")},{set:{brand:'Honda',model:'Civic'
,engine:'Petrol'}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
```

```
mongos> db.list2.find({model:'Supra'}).pretty()
{
	"_id" : ObjectId("60ad973fc5218b4d37b144ab"),
	"brand" : "Toyota",
	"model" : "Supra",
	"engine" : "Petrol"
}

mongos> db.list2.update({model:'Supra'},{$rename:{engine:'engine_type'}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.list2.find({model:'Supra'}).pretty()
{
	"_id" : ObjectId("60ad973fc5218b4d37b144ab"),
	"brand" : "Toyota",
	"model" : "Supra",
	"engine_type" : "Petrol"
}

mongos> db.list2.update({model:'Supra'},{$set:{mileage:5000}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.list2.find({model:'Supra'}).pretty()
{
	"_id" : ObjectId("60ad973fc5218b4d37b144ab"),
	"brand" : "Toyota",
	"model" : "Supra",
	"engine_type" : "Petrol",
	"mileage" : 5000
}

mongos> db.list2.update({model:'Supra'},{$mul:{mileage:2}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.list2.find({model:'Supra'}).pretty()
{
	"_id" : ObjectId("60ad973fc5218b4d37b144ab"),
	"brand" : "Toyota",
	"model" : "Supra",
	"engine_type" : "Petrol",
	"mileage" : 10000
}
```

```
mongos> db.list2.update({model:'Supra'},{$inc:{mileage:200}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.list2.find({model:'Supra'}).pretty()
{
	"_id" : ObjectId("60ad973fc5218b4d37b144ab"),
	"brand" : "Toyota",
	"model" : "Supra",
	"engine_type" : "Petrol",
	"mileage" : 10200
}

mongos> db.list2.update({model:'Supra'},{$max:{mileage:200000}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.list2.find({model:'Supra'}).pretty()
{
	"_id" : ObjectId("60ad973fc5218b4d37b144ab"),
	"brand" : "Toyota",
	"model" : "Supra",
	"engine_type" : "Petrol",
	"mileage" : 200000
}
mongos> db.list2.update({model:'Supra'},{$max:{mileage:200}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 0 })



mongos> db.list2.find({model:'Supra'}).pretty()
{
	"_id" : ObjectId("60ad973fc5218b4d37b144ab"),
	"brand" : "Toyota",
	"model" : "Supra",
	"engine_type" : "Petrol",
	"mileage" : 200000
}
```

```
mongos> db.list2.update({model:'Supra'},{$min:{mileage:200}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.list2.find({model:'Supra'}).pretty()
{
	"_id" : ObjectId("60ad973fc5218b4d37b144ab"),
	"brand" : "Toyota",
	"model" : "Supra",
	"engine_type" : "Petrol",
	"mileage" : 200
}
mongos> db.list2.update({gearbox:'Auto'},{$set:{gearbox:'Automatic'}},{multi:true})
WriteResult({ "nMatched" : 3, "nUpserted" : 0, "nModified" : 3 })

mongos> db.list2.find({},{_id:0})
{ "set" : { "brand" : "Honda", "model" : "Civic", "engine" : "Petrol" } }
{ "brand" : "Toyota", "model" : "Camry", "engine" : "Petrol", "gearbox" : "Automatic", "mileage"
: 120000, "year" : 2010 }
{ "brand" : "Lexus", "model" : "RX350H", "engine" : "Hybrid", "gearbox" : "CVT", "mileage" :
7000, "year" : 2018 }
{ "brand" : "Toyota", "model" : "Corolla", "engine" : "Petrol", "gearbox" : "Manual", "mileage" :
NumberLong(200000), "year" : 2000 }
{ "brand" : "Ford", "model" : "F-150", "engine" : "Petrol", "gearbox" : "Automatic", "mileage" :
27000, "year" : 2015 }
{ "brand" : "Honda", "model" : "CR-V", "engine" : "Hybrid", "gearbox" : "CVT" }
{ "brand" : "Toyota", "model" : "Supra", "engine_type" : "Petrol", "mileage" : 200 }
{ "brand" : "Nissan", "model" : "Leaf", "engine" : "Electric", "gearbox" : "CVT", "mileage" :
15000, "year" : 2010 }
{ "brand" : "Honda", "model" : "Civic", "engine" : "Petrol", "gearbox" : "Automatic", "mileage" :
5000, "year" : 2019 }
{ "brand" : "Honda", "model" : "Accord", "engine" : "Diesel", "gearbox" : "CVT", "mileage" :
NumberLong(65000), "year" : 2010 }

mongos> db.list2.find({},{_id:0,gearbox:1})
{ }
{ "gearbox" : "Automatic" }
{ "gearbox" : "CVT" }
{ "gearbox" : "Manual" }
{ "gearbox" : "Automatic" }
{ "gearbox" : "CVT" }
{ }
{ "gearbox" : "CVT" }
{ "gearbox" : "Automatic" }
{ "gearbox" : "CVT" }
```

```
mongos> db.upsert.update({_id:1},{$set:{brand:'Toyota',model:'Supra'}},{upsert:true})
WriteResult({ "nMatched" : 0, "nUpserted" : 1, "nModified" : 0, "_id" : 1 })

mongos> db.upsert.find()
{ "_id" : 1, "brand" : "Toyota", "model" : "Supra" }

mongos> db.upsert.update({_id:1},{$set:{engine:'Petrol'}},{upsert:true})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })


mongos> db.upsert.find()
{ "_id" : 1, "brand" : "Toyota", "model" : "Supra", "engine" : "Petrol" }

mongos> db.upsert.update({_id:2},{engine:'Petrol'},{upsert:true})
WriteResult({ "nMatched" : 0, "nUpserted" : 1, "nModified" : 0, "_id" : 2 })

mongos> db.upsert.find()
{ "_id" : 1, "brand" : "Toyota", "model" : "Supra", "engine" : "Petrol" }
{ "_id" : 2, "engine" : "Petrol" }

mongos> db.upsert.update({gearbox:'CVT'},{engine:'Petrol'},{upsert:true})
WriteResult({
        "nMatched" : 0,
        "nUpserted" : 1,
        "nModified" : 0,
        "_id" : ObjectId("60aec5ec941cc935380aca76")
})

mongos> db.upsert.find()
{ "_id" : 1, "brand" : "Toyota", "model" : "Supra", "engine" : "Petrol" }
{ "_id" : 2, "engine" : "Petrol" }
{ "_id" : ObjectId("60aec5ec941cc935380aca76"), "engine" : "Petrol" }


mongos>
db.upsert.update({brand:'Toyota'},{$set:{mileage:100},$setOnInsert:{year:2020}},{upsert:true})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
mongos> db.upsert.find()
{ "_id" : 1, "brand" : "Toyota", "model" : "Supra", "engine" : "Petrol", "mileage" : 100 }
{ "_id" : 2, "engine" : "Petrol" }
{ "_id" : ObjectId("60aec5ec941cc935380aca76"), "engine" : "Petrol" }
```

```
mongos>
db.upsert.update({brand:'Nissan'},{$set:{mileage:100},$setOnInsert:{year:2020}},{upsert:true})
WriteResult({
        "nMatched" : 0,
        "nUpserted" : 1,
        "nModified" : 0,
        "_id" : ObjectId("60aec741941cc935380ad157")
})
mongos> db.upsert.find()
{ "_id" : 1, "brand" : "Toyota", "model" : "Supra", "engine" : "Petrol", "mileage" : 100 }
{ "_id" : 2, "engine" : "Petrol" }
{ "_id" : ObjectId("60aec5ec941cc935380aca76"), "engine" : "Petrol" }
{ "_id" : ObjectId("60aec741941cc935380ad157"), "brand" : "Nissan", "mileage" : 100, "year" :
2020 }


mongos> new Date()
ISODate("2021-05-26T22:23:58.923Z")

mongos> ISODate()
ISODate("2021-05-26T22:24:10.043Z")

mongos> new ObjectId().getTimestamp()
ISODate("2021-05-26T22:25:51Z")

mongos> ISODate('1991-02-02')
ISODate("1991-02-02T00:00:00Z")

mongos> ISODate('1991')
uncaught exception: Error: invalid ISO date: 1991 :
ISODate@src/mongo/shell/types.js:79:15
@(shell):1:1


mongos> ISODate('1991-1-1')
uncaught exception: Error: invalid ISO date: 1991-1-1 :
ISODate@src/mongo/shell/types.js:79:15
@(shell):1:1

mongos> db.date.insert({_id:1,msg:'Now',date:new Date()})
WriteResult({ "nInserted" : 1 })

mongos> db.date.find()
{ "_id" : 1, "msg" : "Now", "date" : ISODate("2021-05-26T22:30:40.059Z") }
```

```
mongos> db.date.find({date:ISODate("2021-05-26T22:30:40.059Z")})
{ "_id" : 1, "msg" : "Now", "date" : ISODate("2021-05-26T22:30:40.059Z") }

mongos> db.date.find({date:new Date("2021-05-26T22:30:40.059Z")})
{ "_id" : 1, "msg" : "Now", "date" : ISODate("2021-05-26T22:30:40.059Z") }

mongos> db.date.update({_id:1},{$currentDate:{date:{$type:'date'}}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.date.find()
{ "_id" : 1, "msg" : "Now", "date" : ISODate("2021-05-26T22:36:09.060Z") }

mongos> db.date.update({_id:1},{$max:{date:new Date('2030')}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.date.find()
{ "_id" : 1, "msg" : "Now", "date" : ISODate("2030-01-01T00:00:00Z") }
mongos> db.date.update({_id:1},{$max:{date:new Date('1990')}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 0 })

mongos> db.date.find()
{ "_id" : 1, "msg" : "Now", "date" : ISODate("2030-01-01T00:00:00Z") }


mongos> var arr = db.arr.find({},{_id:0}).toArray()

mongos> db.arr2.insert(arr)
BulkWriteResult({
        "writeErrors" : [ ],
        "writeConcernErrors" : [ ],
        "nInserted" : 5,
        "nUpserted" : 0,
        "nMatched" : 0,
        "nModified" : 0,
        "nRemoved" : 0,
        "upserted" : [ ]
})
mongos> db.arr2.find({},{_id:0})
{ "list" : "Australia", "cities" : [ "Sydney", "Melbourne", "Perth", "Outback" ] }
{ "list" : "Northumberland", "cities" : [ "Newcastle", "Durham" ] }
{ "list" : "US", "cities" : [ "New York", "Washington", "LA", "Las Vegas", "Miami", "Seattle",
"Dallas" ] }
{ "list" : "England", "cities" : [ "London", "Newcastle" ] }
```

{ "list" : "UK", "cities" : ["London", "Glasgow", "Cardiff", "Newcastle", "Durham", "Manchester", "Coventry"] }

mongos> db.arr2.update({list:'UK'},{$pop:{cities:-1}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.arr2.find({},{_id:0})
{ "list" : "Australia", "cities" : ["Sydney", "Melbourne", "Perth", "Outback"] }
{ "list" : "Northumberland", "cities" : ["Newcastle", "Durham"] }
{ "list" : "US", "cities" : ["New York", "Washington", "LA", "Las Vegas", "Miami", "Seattle", "Dallas"] }
{ "list" : "England", "cities" : ["London", "Newcastle"] }
{ "list" : "UK", "cities" : ["Glasgow", "Cardiff", "Newcastle", "Durham", "Manchester", "Coventry"] }] }

mongos> db.arr2.update({list:'UK'},{$pop:{cities:1}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.arr2.find({},{_id:0})
{ "list" : "Australia", "cities" : ["Sydney", "Melbourne", "Perth", "Outback"] }
{ "list" : "Northumberland", "cities" : ["Newcastle", "Durham"] }
{ "list" : "US", "cities" : ["New York", "Washington", "LA", "Las Vegas", "Miami", "Seattle", "Dallas"] }
{ "list" : "England", "cities" : ["London", "Newcastle"] }
{ "list" : "UK", "cities" : ["Glasgow", "Cardiff", "Newcastle", "Durham", "Manchester"] }

mongos>
db.arr2.update({list:'UK'},{$set:{cities:['London','London','Newcastle','Newcastle','Durham','Durham','Manchester','Manchester'],nums:[1,1,1,3,3,4,4,6,6,9,9,10,10,12,15,15,16,19]}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.arr2.find()
{ "_id" : ObjectId("60aecf6945460f365754f182"), "list" : "Australia", "cities" : ["Sydney", "Melbourne", "Perth", "Outback"] }
{ "_id" : ObjectId("60aecf6945460f365754f183"), "list" : "Northumberland", "cities" : ["Newcastle", "Durham"] }
{ "_id" : ObjectId("60aecf6945460f365754f184"), "list" : "US", "cities" : ["New York", "Washington", "LA", "Las Vegas", "Miami", "Seattle", "Dallas"] }
{ "_id" : ObjectId("60aecf6945460f365754f185"), "list" : "England", "cities" : ["London", "Newcastle"] }

{ "_id" : ObjectId("60aecf6945460f365754f186"), "list" : "UK", "cities" : ["London", "London", "Newcastle", "Newcastle", "Durham", "Durham", "Manchester", "Manchester"], "nums" : [1, 1, 1, 3, 3, 4, 4, 6, 6, 9, 9, 10, 10, 12, 15, 15, 16, 19] }

mongos> db.arr2.update({list:'UK'},{$pull:{nums:{$gte:10}}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.arr2.find()
{ "_id" : ObjectId("60aecf6945460f365754f182"), "list" : "Australia", "cities" : ["Sydney", "Melbourne", "Perth", "Outback"] }
{ "_id" : ObjectId("60aecf6945460f365754f183"), "list" : "Northumberland", "cities" : ["Newcastle", "Durham"] }
{ "_id" : ObjectId("60aecf6945460f365754f184"), "list" : "US", "cities" : ["New York", "Washington", "LA", "Las Vegas", "Miami", "Seattle", "Dallas"] }
{ "_id" : ObjectId("60aecf6945460f365754f185"), "list" : "England", "cities" : ["London", "Newcastle"] }
{ "_id" : ObjectId("60aecf6945460f365754f186"), "list" : "UK", "cities" : ["London", "London", "Newcastle", "Newcastle", "Durham", "Durham", "Manchester", "Manchester"], "nums" : [1, 1, 1, 3, 3, 4, 4, 6, 6, 9, 9] }

mongos> db.arr2.update({list:'UK'},{$pullAll:{cities:['London','Manchester']}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.arr2.find()
{ "_id" : ObjectId("60aecf6945460f365754f182"), "list" : "Australia", "cities" : ["Sydney", "Melbourne", "Perth", "Outback"] }
{ "_id" : ObjectId("60aecf6945460f365754f183"), "list" : "Northumberland", "cities" : ["Newcastle", "Durham"] }
{ "_id" : ObjectId("60aecf6945460f365754f184"), "list" : "US", "cities" : ["New York", "Washington", "LA", "Las Vegas", "Miami", "Seattle", "Dallas"] }
{ "_id" : ObjectId("60aecf6945460f365754f185"), "list" : "England", "cities" : ["London", "Newcastle"] }
{ "_id" : ObjectId("60aecf6945460f365754f186"), "list" : "UK", "cities" : ["Newcastle", "Newcastle", "Durham", "Durham"], "nums" : [1, 1, 1, 3, 3, 4, 4, 6, 6, 9, 9] }

mongos> db.arr2.find({list:'UK'},{_id:0})
{ "list" : "UK", "cities" : ["Newcastle", "Newcastle", "Durham", "Durham"], "nums" : [1, 1, 1, 3, 3, 4, 4, 6, 6, 9, 9] }

```
mongos> db.arr2.update({list:'UK'},{$push:{cities:'London',nums:10}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.arr2.find({list:'UK'},{_id:0})
{ "list" : "UK", "cities" : [ "Newcastle", "Newcastle", "Durham", "Durham", "London" ], "nums" : [
1, 1, 1, 3, 3, 4, 4, 6, 6, 9, 9, 10 ] }

mongos> db.arr2.update({list:'UK'},{$push:{cities:{$each:['London','Machester','Coventry']}}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.arr2.find({list:'UK'})
{ "_id" : ObjectId("60aecf6945460f365754f186"), "list" : "UK", "cities" : [ "Newcastle",
"Newcastle", "Durham", "Durham", "London", "London", "Machester", "Coventry" ], "nums" : [
1, 1, 1, 3, 3, 4, 4, 6, 6, 9, 9, 10 ] }

mongos> db.arr2.update({list:'UK'},{$push:{cities:{$each:['Newcastle'],$position:1}}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.arr2.find({list:'UK'})
{ "_id" : ObjectId("60aecf6945460f365754f186"), "list" : "UK", "cities" : [ "Newcastle",
"Newcastle", "Newcastle", "Durham", "Durham", "London", "London", "Machester", "Coventry"
], "nums" : [ 1, 1, 1, 3, 3, 4, 4, 6, 6, 9, 9, 10 ] }

mongos> db.arr2.update({list:'UK'},{$push:{cities:{$each:['Durham','South
Shields'],$position:1}}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.arr2.find({list:'UK'})
{ "_id" : ObjectId("60aecf6945460f365754f186"), "list" : "UK", "cities" : [ "Newcastle",
"Durham", "South Shields", "Newcastle", "Newcastle", "Durham", "Durham", "London",
"London", "Machester", "Coventry" ], "nums" : [ 1, 1, 1, 3, 3, 4, 4, 6, 6, 9, 9, 10 ] }

mongos> db.arr2.update({list:'UK'},{$push:{cities:{$each:['Derby'],$position:-1}}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.arr2.find({list:'UK'})
{ "_id" : ObjectId("60aecf6945460f365754f186"), "list" : "UK", "cities" : [ "Newcastle",
"Durham", "South Shields", "Newcastle", "Newcastle", "Durham", "Durham", "London",
"London", "Machester", "Derby", "Coventry" ], "nums" : [ 1, 1, 1, 3, 3, 4, 4, 6, 6, 9, 9, 10 ] }


mongos> db.arr2.update({list:'UK'},{$push:{cities:{$each:['Dundee','Surrey'],$position:-1}}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
```

```
mongos> db.arr2.find({list:'UK'})
{ "_id" : ObjectId("60aecf6945460f365754f186"), "list" : "UK", "cities" : [ "Newcastle",
"Durham", "South Shields", "Newcastle", "Newcastle", "Durham", "Durham", "London",
"London", "Machester", "Derby", "Dundee", "Surrey", "Coventry" ], "nums" : [ 1, 1, 1, 3, 3, 4, 4,
6, 6, 9, 9, 10 ] }

mongos> db.arr2.find({list:'UK'},{_id:0})
{ "list" : "UK", "cities" : [ "Newcastle", "Durham", "South Shields", "Newcastle", "Newcastle",
"Durham", "Durham", "London", "London", "Machester", "Derby", "Dundee", "Surrey",
"Coventry" ], "nums" : [ 1, 1, 1, 3, 3, 4, 4, 6, 6, 9, 9, 10 ] }

mongos> db.arr2.update({list:'UK'},{$push:{nums:{$each:[],$sort:-1}}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.arr2.find({list:'UK'},{_id:0})
{ "list" : "UK", "cities" : [ "Newcastle", "Durham", "South Shields", "Newcastle", "Newcastle",
"Durham", "Durham", "London", "London", "Machester", "Derby", "Dundee", "Surrey",
"Coventry" ], "nums" : [ 10, 9, 9, 6, 6, 4, 4, 3, 3, 1, 1, 1 ] }

mongos> db.arr2.update({list:'UK'},{$push:{cities:{$each:[],$sort:1}}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.arr2.find({list:'UK'},{_id:0})
{ "list" : "UK", "cities" : [ "Coventry", "Derby", "Dundee", "Durham", "Durham", "Durham",
"London", "London", "Machester", "Newcastle", "Newcastle", "Newcastle", "South Shields",
"Surrey" ], "nums" : [ 10, 9, 9, 6, 6, 4, 4, 3, 3, 1, 1, 1 ] }

mongos> db.arr2.update({list:'UK'},{$addToSet:{cities:'London'}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 0 })


mongos> db.arr2.update({list:'UK'},{$addToSet:{cities:'Glasgow'}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })


mongos> db.arr2.find({list:'UK'},{_id:0})
{ "list" : "UK", "cities" : [ "Coventry", "Derby", "Dundee", "Durham", "Durham", "Durham",
"London", "London", "Machester", "Newcastle", "Newcastle", "Newcastle", "South Shields",
"Surrey", "Glasgow" ], "nums" : [ 10, 9, 9, 6, 6, 4, 4, 3, 3, 1, 1, 1 ] }


mongos> db.arr2.update({list:'UK'},{$addToSet:{cities:{$each:['Edinburgh','Tynemouth']}}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
```

```
mongos> db.arr2.find({list:'UK'},{_id:0})
{ "list" : "UK", "cities" : [ "Coventry", "Derby", "Dundee", "Durham", "Durham", "Durham",
"London", "London", "Machester", "Newcastle", "Newcastle", "Newcastle", "South Shields",
"Surrey", "Glasgow", "Edinburgh", "Tynemouth" ], "nums" : [ 10, 9, 9, 6, 6, 4, 4, 3, 3, 1, 1, 1 ] }

mongos> db.arr2.update({list:'UK'},{$push:{cities:{$each:['London','London','lONDON']}}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.arr2.find({},{_id:0})
{ "list" : "US", "cities" : [ "New York", "Washington", "LA", "Las Vegas", "Miami", "Seattle",
"Dallas" ] }
{ "list" : "Australia", "cities" : [ "Sydney", "Melbourne", "Perth", "Outback" ] }
{ "list" : "Northumberland", "cities" : [ "Newcastle", "Durham" ] }
{ "list" : "England", "cities" : [ "London", "Newcastle" ] }
{ "list" : "UK", "cities" : [ "Coventry", "Derby", "Dundee", "Durham", "Durham", "Durham",
"London", "London", "Machester", "Newcastle", "Newcastle", "Newcastle", "South Shields",
"Surrey", "Glasgow", "Edinburgh", "Tynemouth", "London", "London", "lONDON" ], "nums" : [
10, 9, 9, 6, 6, 4, 4, 3, 3, 1, 1, 1 ] }


mongos> db.arr2.update({list:'UK',cities:'London'},{$set:{'cities.$':'UK Capital'}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

mongos> db.arr2.find({},{_id:0})
{ "list" : "US", "cities" : [ "New York", "Washington", "LA", "Las Vegas", "Miami", "Seattle",
"Dallas" ] }
{ "list" : "Australia", "cities" : [ "Sydney", "Melbourne", "Perth", "Outback" ] }
{ "list" : "Northumberland", "cities" : [ "Newcastle", "Durham" ] }
{ "list" : "England", "cities" : [ "London", "Newcastle" ] }
{ "list" : "UK", "cities" : [ "Coventry", "Derby", "Dundee", "Durham", "Durham", "Durham", "UK
Capital", "London", "Machester", "Newcastle", "Newcastle", "Newcastle", "South Shields",
"Surrey", "Glasgow", "Edinburgh", "Tynemouth", "London", "London", "lONDON" ], "nums" : [
10, 9, 9, 6, 6, 4, 4, 3, 3, 1, 1, 1 ] }


mongos> db.list2.find({},{_id:0})
{ "brand" : "Toyota", "model" : "Supra", "engine_type" : "Petrol", "mileage" : 200 }
{ "brand" : "Toyota", "model" : "Camry", "engine" : "Petrol", "gearbox" : "Automatic", "mileage"
: 120000, "year" : 2010 }
{ "brand" : "Honda", "model" : "CR-V", "engine" : "Hybrid", "gearbox" : "CVT" }
{ "brand" : "Honda", "model" : "Civic", "engine" : "Petrol", "gearbox" : "Automatic", "mileage" :
5000, "year" : 2019 }
{ "brand" : "Toyota", "model" : "Corolla", "engine" : "Petrol", "gearbox" : "Manual", "mileage" :
NumberLong(200000), "year" : 2000 }
```

{ "brand" : "Honda", "model" : "Accord", "engine" : "Diesel", "gearbox" : "CVT", "mileage" : NumberLong(65000), "year" : 2010 }
{ "brand" : "Lexus", "model" : "RX350H", "engine" : "Hybrid", "gearbox" : "CVT", "mileage" : 7000, "year" : 2018 }
{ "brand" : "Nissan", "model" : "Leaf", "engine" : "Electric", "gearbox" : "CVT", "mileage" : 15000, "year" : 2010 }
{ "brand" : "Ford", "model" : "F-150", "engine" : "Petrol", "gearbox" : "Automatic", "mileage" : 27000, "year" : 2015 }
{ "set" : { "brand" : "Honda", "model" : "Civic", "engine" : "Petrol" } }

```
mongos> db.list2.findOneAndDelete({},{sort:{mileage:-1}})
{
	"_id" : ObjectId("60ad973fc5218b4d37b144af"),
	"brand" : "Toyota",
	"model" : "Corolla",
	"engine" : "Petrol",
	"gearbox" : "Manual",
	"mileage" : NumberLong(200000),
	"year" : 2000
}

mongos> db.list2.find()
{ "_id" : ObjectId("60ad973fc5218b4d37b144ab"), "brand" : "Toyota", "model" : "Supra", "engine_type" : "Petrol", "mileage" : 200 }
{ "_id" : ObjectId("60ad973fc5218b4d37b144ac"), "brand" : "Toyota", "model" : "Camry", "engine" : "Petrol", "gearbox" : "Automatic", "mileage" : 120000, "year" : 2010 }
{ "_id" : ObjectId("60ad973fc5218b4d37b144ad"), "brand" : "Honda", "model" : "CR-V", "engine" : "Hybrid", "gearbox" : "CVT" }
{ "_id" : ObjectId("60ad973fc5218b4d37b144ae"), "brand" : "Honda", "model" : "Civic", "engine" : "Petrol", "gearbox" : "Automatic", "mileage" : 5000, "year" : 2019 }
{ "_id" : ObjectId("60ad973fc5218b4d37b144b0"), "brand" : "Honda", "model" : "Accord", "engine" : "Diesel", "gearbox" : "CVT", "mileage" : NumberLong(65000), "year" : 2010 }
{ "_id" : ObjectId("60ad973fc5218b4d37b144b1"), "brand" : "Lexus", "model" : "RX350H", "engine" : "Hybrid", "gearbox" : "CVT", "mileage" : 7000, "year" : 2018 }
{ "_id" : ObjectId("60ad973fc5218b4d37b144b2"), "brand" : "Nissan", "model" : "Leaf", "engine" : "Electric", "gearbox" : "CVT", "mileage" : 15000, "year" : 2010 }
{ "_id" : ObjectId("60ad973fc5218b4d37b144b3"), "brand" : "Ford", "model" : "F-150", "engine" : "Petrol", "gearbox" : "Automatic", "mileage" : 27000, "year" : 2015 }
{ "_id" : ObjectId("60ad973fc5218b4d37b144b4"), "set" : { "brand" : "Honda", "model" : "Civic", "engine" : "Petrol" } }

mongos> db.list2.remove({gearbox:'CVT'},{justOne:true})
WriteResult({ "nRemoved" : 1 })
```

```
mongos> db.list2.find()
{ "_id" : ObjectId("60ad973fc5218b4d37b144ab"), "brand" : "Toyota", "model" : "Supra",
"engine_type" : "Petrol", "mileage" : 200 }
{ "_id" : ObjectId("60ad973fc5218b4d37b144ac"), "brand" : "Toyota", "model" : "Camry",
"engine" : "Petrol", "gearbox" : "Automatic", "mileage" : 120000, "year" : 2010 }
{ "_id" : ObjectId("60ad973fc5218b4d37b144ae"), "brand" : "Honda", "model" : "Civic",
"engine" : "Petrol", "gearbox" : "Automatic", "mileage" : 5000, "year" : 2019 }
{ "_id" : ObjectId("60ad973fc5218b4d37b144b0"), "brand" : "Honda", "model" : "Accord",
"engine" : "Diesel", "gearbox" : "CVT", "mileage" : NumberLong(65000), "year" : 2010 }
{ "_id" : ObjectId("60ad973fc5218b4d37b144b1"), "brand" : "Lexus", "model" : "RX350H",
"engine" : "Hybrid", "gearbox" : "CVT", "mileage" : 7000, "year" : 2018 }
{ "_id" : ObjectId("60ad973fc5218b4d37b144b2"), "brand" : "Nissan", "model" : "Leaf",
"engine" : "Electric", "gearbox" : "CVT", "mileage" : 15000, "year" : 2010 }
{ "_id" : ObjectId("60ad973fc5218b4d37b144b3"), "brand" : "Ford", "model" : "F-150", "engine"
: "Petrol", "gearbox" : "Automatic", "mileage" : 27000, "year" : 2015 }
{ "_id" : ObjectId("60ad973fc5218b4d37b144b4"), "set" : { "brand" : "Honda", "model" : "Civic",
"engine" : "Petrol" } }


mongos> db.list2.remove({gearbox:'CVT'})
WriteResult({ "nRemoved" : 3 })

mongos> db.list2.find()
{ "_id" : ObjectId("60ad973fc5218b4d37b144ab"), "brand" : "Toyota", "model" : "Supra",
"engine_type" : "Petrol", "mileage" : 200 }
{ "_id" : ObjectId("60ad973fc5218b4d37b144ac"), "brand" : "Toyota", "model" : "Camry",
"engine" : "Petrol", "gearbox" : "Automatic", "mileage" : 120000, "year" : 2010 }
{ "_id" : ObjectId("60ad973fc5218b4d37b144ae"), "brand" : "Honda", "model" : "Civic",
"engine" : "Petrol", "gearbox" : "Automatic", "mileage" : 5000, "year" : 2019 }
{ "_id" : ObjectId("60ad973fc5218b4d37b144b3"), "brand" : "Ford", "model" : "F-150", "engine"
: "Petrol", "gearbox" : "Automatic", "mileage" : 27000, "year" : 2015 }
{ "_id" : ObjectId("60ad973fc5218b4d37b144b4"), "set" : { "brand" : "Honda", "model" : "Civic",
"engine" : "Petrol" } }

mongos> db.list2.deleteOne({brand:'Toyota'})
{ "acknowledged" : true, "deletedCount" : 1 }

mongos> db.list2.find()
{ "_id" : ObjectId("60ad973fc5218b4d37b144ac"), "brand" : "Toyota", "model" : "Camry",
"engine" : "Petrol", "gearbox" : "Automatic", "mileage" : 120000, "year" : 2010 }
{ "_id" : ObjectId("60ad973fc5218b4d37b144ae"), "brand" : "Honda", "model" : "Civic",
"engine" : "Petrol", "gearbox" : "Automatic", "mileage" : 5000, "year" : 2019 }
{ "_id" : ObjectId("60ad973fc5218b4d37b144b3"), "brand" : "Ford", "model" : "F-150", "engine"
: "Petrol", "gearbox" : "Automatic", "mileage" : 27000, "year" : 2015 }
```

{ "_id" : ObjectId("60ad973fc5218b4d37b144b4"), "set" : { "brand" : "Honda", "model" : "Civic", "engine" : "Petrol" } }