

1- ایجاد دیتابیس با نام store

```
Command Prompt - mongo
> use store
switched to db store
```

1-1 ایجاد collection با نام products

```
C:\Program Files\MongoDB\Server\4.4\bin\mongo.exe
> db.createCollection("products")
{ "ok" : 1 }
> _
```

B - افزودن یک داکيومنت

دستور `db.collections.insert({})`

```
C:\Program Files\MongoDB\Server\4.4\bin\mongo.exe
local 0.000GB
> use store
switched to db store
> db
store
> db.products.insert({
...     "type": "Audio Album",
...     "title": "A Love Supreme",
...     "description": "by John Coltrane",
...     "shipping": {
...         "weight": 6,
...         "dimensions": {
...             "width": 10,
...             "height": 10,
...             "depth": 1
...         }
...     },
...     "pricing": {
...         "list": 1200,
...         "retail": 1100,
...         "savings": 100,
...         "pct_savings": 8
...     },
...     "details": {
...         "title": "A Love Supreme [Original Recording Reissued]",
...         "artist": "John Coltrane",
...         "genre": [
...             "Jazz",
...             "General"
...         ],
...         "tracks": [
...             "A Love Supreme Part I: Acknowledgement",
...             "A Love Supreme Part II - Resolution",
...             "A Love Supreme, Part III: Pursuance",
...             "A Love Supreme, Part IV-Psalm"
...         ]
...     }
... })
WriteResult({ "nInserted" : 1 })
>
```

B - افزودن چندین داکيومنت

دستور db.collections.insertMany([{} , {} , ...])

```
C:\Program Files\MongoDB\Server\4.4\bin\mongo.exe
> db.products.insertMany([
...   "type": "Audio Album",
...   "title": "BlackStar",
...   "description": "BlackStar is the twenty-fifth and final studio album by English musician David Bowie. It was released worldwide through ISO, RCA, Columbia, and Sony on 8 January 2016, coinciding with
Bowie's 69th birthday",
...   "shipping": {
...     "weight": 8,
...     "dimensions": {
...       "width": 15,
...       "height": 15,
...       "depth": 1
...     }
...   },
...   "pricing": {
...     "list": 1450,
...     "retail": 2450,
...     "savings": 110,
...     "pct_savings": 5
...   },
...   "details": {
...     "title": "BlackStar [Original Recording Reissued]",
...     "artist": "David Bowie",
...     "genre": [
...       "Experimental rock",
...       "Art rock",
...       "Avant-garde jazz"
...     ],
...     "tracks": [
...       "Blackstar",
...       "'Tis a Pity She Was a Whore",
...       "Lazarus",
...       "Sue (Or in a Season of Crime)",
...       "Girl Loves Me",
...       "Dollar Days",
...       "I Can't Give Everything Away"
...     ]
...   }
... ],{
...   "type": "Audio Album",
...   "title": "Funeral",
...   "description": "Funeral is the debut studio album by Canadian indie rock band Arcade Fire, released on September 14, 2004 by Merge Records.",
...   "shipping": {
...     "weight": 10,
...     "dimensions": {
...       "width": 12,
...       "height": 10,
...       "depth": 1
...     }
...   },
...   "pricing": {
```

1-3

A- نمایش داکيومنت های موجود در products

```
C:\Program Files\MongoDB\Server\4.4\bin\mongo.exe
> db.products.find({})
{ "_id" : ObjectId("602e64b0dd3b695dfeec707b"), "type" : "Audio Album", "title" : "A Love Supreme", "description" : "by John Coltrane", "shipping" : { "weight" : 6, "dimensions" : { "width" : 10, "height" : 10, "depth" : 1 } }, "pricing" : { "list" : 1200, "retail" : 1100, "savings" : 100, "pct_savings" : 8 }, "details" : { "title" : "A Love Supreme [Original Recording Reissued]", "artist" : "John Coltrane", "genre" : [ "Jazz", "General" ], "tracks" : [ "A Love Supreme Part I : Acknowledgement", "A Love Supreme Part II - Resolution", "A Love Supreme, Part III: Pursuance", "A Love Supreme, Part IV-Psalm" ] } }
{ "_id" : ObjectId("602e67f1dd3b695dfeec707d"), "type" : "Audio Album", "title" : "BlackStar", "description" : "BlackStar is the twenty-fifth and final studio album by English musician David Bowie. It was released worldwide through ISO, RCA, Columbia, and Sony on 8 January 2016, coinciding with Bowie's 69th birthday", "shipping" : { "weight" : 8, "dimensions" : { "width" : 15, "height" : 15, "depth" : 1 } }, "pricing" : { "list" : 1450, "retail" : 2450, "savings" : 110, "pct_savings" : 5 }, "details" : { "title" : "BlackStar [Original Recording Reissued]", "artist" : "David Bowie", "genre" : [ "Experimental rock", "Art rock", "Avant-garde jazz" ], "tracks" : [ "Blackstar", "'Tis a Pity She Was a Whore", "Lazarus", "Sue (Or in a Season of Crime)", "Girl Loves Me", "Dollar Days", "I Can't Give Everything Away" ] } }
{ "_id" : ObjectId("602e67f1dd3b695dfeec707e"), "type" : "Audio Album", "title" : "Funeral", "description" : "Funeral is the debut studio album by Canadian indie rock band Arcade Fire, released on September 14, 2004 by Merge Records.", "shipping" : { "weight" : 10, "dimensions" : { "width" : 12, "height" : 10, "depth" : 1 } }, "pricing" : { "list" : 2450, "retail" : 3450, "savings" : 310, "pct_savings" : 2 }, "details" : { "title" : "Funeral [Original Recording Reissued]", "artist" : "Arcade Fire", "genre" : [ "Indie rock", "Alternative rock", "Art rock", "Baroque pop", "Rock" ], "tracks" : [ "Neighborhood #1 (Tunnels)", "Neighborhood #2 (Laika)", "Une ann e sans lumi re", "Crown of Love", "Wake Up", "Haiti", "Rebellion (Lies)" ] } }
{ "_id" : ObjectId("602e67f1dd3b695dfeec707f"), "type" : "Film", "shipping" : { "weight" : 10, "dimensions" : { "width" : 20, "height" : 30, "depth" : 1 } }, "pricing" : { "list" : 2200, "retail" : 5100, "savings" : 200, "pct_savings" : 10 }, "details" : { "title" : "The Matrix", "director" : [ "Andy Wachowski", "Larry Wachowski" ], "writer" : [ "Andy Wachowski", "Larry Wachowski" ], "aspect_ratio" : "1.66:1" } }
{ "_id" : ObjectId("602e67f1dd3b695dfeec7080"), "type" : "Film", "shipping" : { "weight" : 25, "dimensions" : { "width" : 12, "height" : 21, "depth" : 2 } }, "pricing" : { "list" : 5200, "retail" : 10100, "savings" : 500, "pct_savings" : 15 }, "details" : { "title" : "InterStellar", "director" : [ "Christopher Nolan" ], "writer" : [ "Christopher Nolan", "Jonathan Nolan" ], "aspect_ratio" : "1.33:1" } }
{ "_id" : ObjectId("602e67f1dd3b695dfeec7081"), "type" : "Film", "shipping" : { "weight" : 18, "dimensions" : { "width" : 16, "height" : 16, "depth" : 1 } }, "pricing" : { "list" : 7100, "retail" : 8000, "savings" : 429, "pct_savings" : 9 }, "details" : { "title" : "Inception", "director" : [ "Christopher Nolan" ], "writer" : [ "Christopher Nolan" ], "aspect_ratio" : "1.50:1" } }
>
```

B- نمایش داکيومنت های موجود در products به صورت خوانا

```
C:\Program Files\MongoDB\Server\4.4\bin\mongo.exe
> db.products.find({}).pretty()
{
  "_id" : ObjectId("602e64b0dd3b695dfeec707b"),
  "type" : "Audio Album",
  "title" : "A Love Supreme",
  "description" : "by John Coltrane",
  "shipping" : {
    "weight" : 6,
    "dimensions" : {
      "width" : 10,
      "height" : 10,
      "depth" : 1
    }
  },
  "pricing" : {
    "list" : 1200,
    "retail" : 1100,
    "savings" : 100,
    "pct_savings" : 8
  },
  "details" : {
    "title" : "A Love Supreme [Original Recording Reissued]",
    "artist" : "John Coltrane",
    "genre" : [
      "Jazz",
      "General"
    ],
    "tracks" : [
      "A Love Supreme Part I: Acknowledgement",
      "A Love Supreme Part II - Resolution",
      "A Love Supreme, Part III: Pursuance",
      "A Love Supreme, Part IV-Psalm"
    ]
  }
}
{
  "_id" : ObjectId("602e67f1dd3b695dfeec707d"),
  "type" : "Audio Album",
  "title" : "BlackStar",
  "description" : "BlackStar is the twenty-fifth and final studio album by English musician David Bowie. It was re
```

C- نمایش داکيومنت های موجود در products بدون فیلد id

```
C:\Program Files\MongoDB\Server\4.4\bin\mongo.exe
> db.products.find({}, {_id:0}).pretty()
{
  "type" : "Audio Album",
  "title" : "A Love Supreme",
  "description" : "by John Coltrane",
  "shipping" : {
    "weight" : 6,
    "dimensions" : {
      "width" : 10,
      "height" : 10,
      "depth" : 1
    }
  },
  "pricing" : {
    "list" : 1200,
    "retail" : 1100,
    "savings" : 100,
    "pct_savings" : 8
  },
  "details" : {
    "title" : "A Love Supreme [Original Recording Reissued]",
    "artist" : "John Coltrane",
    "genre" : [
      "Jazz",
      "General"
    ],
    "tracks" : [
      "A Love Supreme Part I: Acknowledgement",
      "A Love Supreme Part II - Resolution",
      "A Love Supreme, Part III: Pursuance",
      "A Love Supreme, Part IV-Psalm"
    ]
  }
}
{
  "type" : "Audio Album",
  "title" : "BlackStar",
  "description" : "BlackStar is the twenty-fifth and final studio album by English musician David Bowie. It was released worldwide through ISO, RCA, Columbia, and Sony on 8 January 2016, coinciding with Bowie's 69th birthday",
  "shipping" : {
```

D- نمایش داکيومنت ها با "type:Audio Album"

```
C:\Program Files\MongoDB\Server\4.4\bin\mongo.exe

> db.products.find({type:"Audio Album"})
{ "_id" : ObjectId("602e64b0dd3b695dfeec707b"), "type" : "Audio Album", "title" : "A Love Supreme", "description" : "by John Coltrane", "shipping" : { "weight" : 6, "dimensions" : { "width" : 10, "height" : 10, "depth" : 1 } }, "pricing" : { "list" : 1200, "retail" : 1100, "savings" : 100, "pct_savings" : 8 }, "details" : { "title" : "A Love Supreme [Original Recording Reissued]", "artist" : "John Coltrane", "genre" : [ "Jazz", "General" ], "tracks" : [ "A Love Supreme Part I : Acknowledgement", "A Love Supreme Part II - Resolution", "A Love Supreme, Part III: Pursuance", "A Love Supreme, Part IV-Psalm" ] } }
{ "_id" : ObjectId("602e67f1dd3b695dfeec707d"), "type" : "Audio Album", "title" : "BlackStar", "description" : "BlackStar is the twenty-fifth and final studio album by English musician David Bowie. It was released worldwide through ISO, RCA, Columbia, and Sony on 8 January 2016, coinciding with Bowie's 69th birthday", "shipping" : { "weight" : 8, "dimensions" : { "width" : 15, "height" : 15, "depth" : 1 } }, "pricing" : { "list" : 1450, "retail" : 2450, "savings" : 110, "pct_savings" : 5 }, "details" : { "title" : "BlackStar [Original Recording Reissued]", "artist" : "David Bowie", "genre" : [ "Experimental rock", "Art rock", "Avant-garde jazz" ], "tracks" : [ "Blackstar", "'Tis a Pity She Was a Whore", "Lazarus", "Sue (Or in a Season of Crime)", "Girl Loves Me", "Dollar Days", "I Can't Give Everything Away" ] } }
{ "_id" : ObjectId("602e67f1dd3b695dfeec707e"), "type" : "Audio Album", "title" : "Funeral", "description" : "Funeral is the debut studio album by Canadian indie rock band Arcade Fire, released on September 14, 2004 by Merge Records.", "shipping" : { "weight" : 10, "dimensions" : { "width" : 12, "height" : 10, "depth" : 1 } }, "pricing" : { "list" : 2450, "retail" : 3450, "savings" : 310, "pct_savings" : 2 }, "details" : { "title" : "Funeral [Original Recording Reissued]", "artist" : "Arcade Fire", "genre" : [ "Indie rock", "Alternative rock", "Art rock", "Baroque pop", "Rock" ], "tracks" : [ "Neighborhood #1 (Tunnels)", "Neighborhood #2 (Laika)", "Une année sans lumière", "Crown of Love", "Wake Up", "Haiti", "Rebellion (Lies)" ] } }
> _
```

E- نمایش داکيومنت هایی که مقدار فیلد retail در قسمت pricing کمتر از 5000 باشد

```
C:\Program Files\MongoDB\Server\4.4\bin\mongo.exe
> db.products.find({"pricing.retail":{$lt:5000}}).pretty()
{
  "_id" : ObjectId("602e64b0dd3b695dfeec707b"),
  "type" : "Audio Album",
  "title" : "A Love Supreme",
  "description" : "by John Coltrane",
  "shipping" : {
    "weight" : 6,
    "dimensions" : {
      "width" : 10,
      "height" : 10,
      "depth" : 1
    }
  },
  "pricing" : {
    "list" : 1200,
    "retail" : 1100,
    "savings" : 100,
    "pct_savings" : 8
  },
  "details" : {
    "title" : "A Love Supreme [Original Recording Reissued]",
    "artist" : "John Coltrane",
    "genre" : [
      "Jazz",
      "General"
    ],
    "tracks" : [
      "A Love Supreme Part I: Acknowledgement",
      "A Love Supreme Part II - Resolution",
      "A Love Supreme, Part III: Pursuance",
      "A Love Supreme, Part IV-Psalm"
    ]
  }
}
{
  "_id" : ObjectId("602e67f1dd3b695dfeec707d"),
  "type" : "Audio Album",
  "title" : "BlackStar",
  "description" : "BlackStar is the twenty-fifth and final studio album by English musician David Bowie. It was released worldwide through ISO, RCA, Columbia, and Sony on 8 January 2016, coinciding with Bowie's 69th birthday",
  "shipping" : {
    "weight" : 8,
    "dimensions" : {
      "width" : 15,
      "height" : 15,
      "depth" : 1
    }
  },
  "pricing" : {
```


F- نمایش داکيومنت هایی که مقدار فیلد type آن ها Film نباشد

```
C:\Program Files\MongoDB\Server\4.4\bin\mongo.exe
> db.products.find({"type":{"ne":"Film"}}).pretty()
{
  "_id" : ObjectId("60369c43400c50827af24319"),
  "type" : "Audio Album",
  "title" : "A Love Supreme",
  "description" : "by John Coltrane",
  "shipping" : {
    "weight" : 6,
    "dimensions" : {
      "width" : 10,
      "height" : 10,
      "depth" : 1
    }
  },
  "pricing" : {
    "list" : 1200,
    "retail" : 1100,
    "savings" : 100,
    "pct_savings" : 8
  },
  "details" : {
    "title" : "A Love Supreme [Original Recording Reissued]",
    "artist" : "John Coltrane",
    "genre" : [
      "Jazz",
      "General"
    ],
    "tracks" : [
      "A Love Supreme Part I: Acknowledgement",
      "A Love Supreme Part II - Resolution",
      "A Love Supreme, Part III: Pursuance",
      "A Love Supreme, Part IV-Psalm"
    ]
  }
}

{
  "_id" : ObjectId("60369d29400c50827af2431a"),
  "type" : "Audio Album",
  "title" : "BlackStar",
  "description" : "BlackStar is the twenty-fifth and final studio album by English musician David
Bowie. It was released worldwide through ISO, RCA, Columbia, and Sony on 8 January 2016, coinciding with
Bowie's 69th birthday",
  "shipping" : {
    "weight" : 8,
    "dimensions" : {
      "width" : 15,
      "height" : 15,
      "depth" : 1
    }
  }
}
```

G- نمایش داکيومنت هایی که مقدار فیلد weight آنها در قسمت shipping بیش از 15 باشد

```
C:\Program Files\MongoDB\Server\4.4\bin\mongo.exe
> db.products.find({"shipping.weight":{"$gt:15}}).pretty()
{
  "_id" : ObjectId("602e67f1dd3b695dfeec7080"),
  "type" : "Film",
  "shipping" : {
    "weight" : 25,
    "dimensions" : {
      "width" : 12,
      "height" : 21,
      "depth" : 2
    }
  },
  "pricing" : {
    "list" : 5200,
    "retail" : 10100,
    "savings" : 500,
    "pct_savings" : 15
  },
  "details" : {
    "title" : "InterStellar",
    "director" : [
      "Christopher Nolan"
    ],
    "writer" : [
      "Christopher Nolan",
      "Jonathan Nolan"
    ],
    "aspect_ratio" : "1.33:1"
  }
}

{
  "_id" : ObjectId("602e67f1dd3b695dfeec7081"),
  "type" : "Film",
  "shipping" : {
    "weight" : 18,
    "dimensions" : {
      "width" : 16,
      "height" : 16,
      "depth" : 1
    }
  },
  "pricing" : {
    "list" : 7100,
    "retail" : 8000,
    "savings" : 429,
    "pct_savings" : 9
  },
  "details" : {
    "title" : "Inception",
    "director" : [

```

H- داکيومنت با فيلد "title:The Matrix" در بخش details را پيدا كنيد و مقدار فيلد list در بخش pricing آن را به مقدار 2500 آپديت كنيد.

```
C:\Program Files\MongoDB\Server\4.4\bin\mongo.exe
> db.products.update({"details.title":"The Matrix"},{"$set":{"pricing.list":2500}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 0 })
>
```

۱- نمایش داکيومنت هایی که مقدار فیلد type آن ها برابر با Film و مقدار depth در بخش dimensions در بخش shipping آن ها برابر 1 باشد

```
C:\Program Files\MongoDB\Server\4.4\bin\mongo.exe
> db.products.find({"type":{"$eq":"Film"},"shipping.dimensions.depth":{"$eq:1"}}).pretty()
{
  "_id" : ObjectId("60369d29400c50827af2431c"),
  "type" : "Film",
  "shipping" : {
    "weight" : 10,
    "dimensions" : {
      "width" : 20,
      "height" : 30,
      "depth" : 1
    }
  },
  "pricing" : {
    "list" : 2200,
    "retail" : 5100,
    "savings" : 200,
    "pct_savings" : 10
  },
  "details" : {
    "title" : "The Matrix",
    "director" : [
      "Andy Wachowski",
      "Larry Wachowski"
    ],
    "writer" : [
      "Andy Wachowski",
      "Larry Wachowski"
    ],
    "aspect_ratio" : "1.66:1"
  }
}
{
  "_id" : ObjectId("60369d29400c50827af2431e"),
  "type" : "Film",
  "shipping" : {
    "weight" : 18,
    "dimensions" : {
      "width" : 16,
      "height" : 16,
      "depth" : 1
    }
  },
  "pricing" : {
    "list" : 7100,
    "retail" : 8000,
    "savings" : 429,
    "pct_savings" : 9
  },
  "details" : {
```

۱- نمایش داکيومنت هایی که مقدار فیلد type آن ها Film باشد

```
C:\Program Files\MongoDB\Server\4.4\bin\mongo.exe
> db.products.find({"type":{"$eq":"Film"}}).pretty()

  "_id" : ObjectId("60369d29400c50827af2431c"),
  "type" : "Film",
  "shipping" : {
    "weight" : 10,
    "dimensions" : {
      "width" : 20,
      "height" : 30,
      "depth" : 1
    }
  },
  "pricing" : {
    "list" : 2200,
    "retail" : 5100,
    "savings" : 200,
    "pct_savings" : 10
  },
  "details" : {
    "title" : "The Matrix",
    "director" : [
      "Andy Wachowski",
      "Larry Wachowski"
    ],
    "writer" : [
      "Andy Wachowski",
      "Larry Wachowski"
    ],
    "aspect_ratio" : "1.66:1"
  }
}

  "_id" : ObjectId("60369d29400c50827af2431d"),
  "type" : "Film",
  "shipping" : {
    "weight" : 25,
    "dimensions" : {
      "width" : 12,
      "height" : 21,
      "depth" : 2
    }
  },
  "pricing" : {
    "list" : 5200,
    "retail" : 10100,
    "savings" : 500,
    "pct_savings" : 15
  },
  "details" : {
```

K- نمایش داکيومنت هایی که مقدار فیلد writer در بخش details شامل Jonathan Nolan باشد

```
C:\Program Files\MongoDB\Server\4.4\bin\mongo.exe
> db.products.find({"details.writer":{"$in":["Jonathan Nolan"]}}).pretty()
{
  "_id" : ObjectId("60369d29400c50827af2431d"),
  "type" : "Film",
  "shipping" : {
    "weight" : 25,
    "dimensions" : {
      "width" : 12,
      "height" : 21,
      "depth" : 2
    }
  },
  "pricing" : {
    "list" : 5200,
    "retail" : 10100,
    "savings" : 500,
    "pct_savings" : 15
  },
  "details" : {
    "title" : "InterStellar",
    "director" : [
      "Christopher Nolan"
    ],
    "writer" : [
      "Christopher Nolan",
      "Jonathan Nolan"
    ],
    "aspect_ratio" : "1.33:1"
  }
}
```

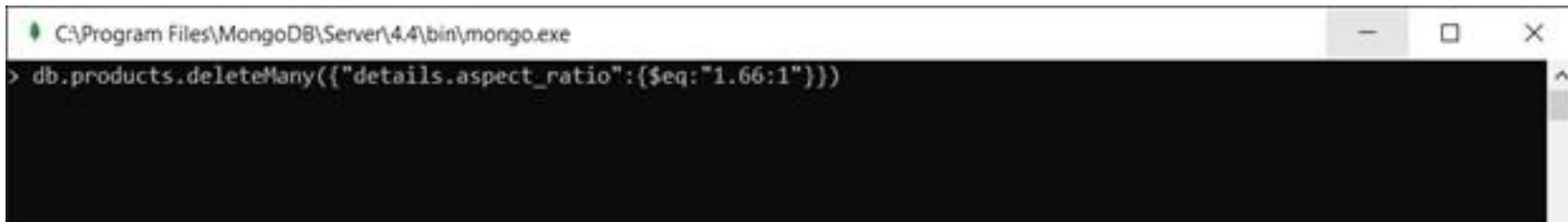
L- نمایش داکيومنت با بیشترین مقدار savings در قسمت pricing

```
C:\Program Files\MongoDB\Server\4.4\bin\mongo.exe
> db.products.find().sort({"pricing.savings":-1}).limit(1).pretty()
{
  "_id" : ObjectId("60369d29400c50827af2431d"),
  "type" : "Film",
  "shipping" : {
    "weight" : 25,
    "dimensions" : {
      "width" : 12,
      "height" : 21,
      "depth" : 2
    }
  },
  "pricing" : {
    "list" : 5200,
    "retail" : 10100,
    "savings" : 500,
    "pct_savings" : 15
  },
  "details" : {
    "title" : "InterStellar",
    "director" : [
      "Christopher Nolan"
    ],
    "writer" : [
      "Christopher Nolan",
      "Jonathan Nolan"
    ],
    "aspect_ratio" : "1.33:1"
  }
}
```

M- نمایش داکيومنت های که مقدار فیلد title در بخش details آن ها دارای حرف x است

```
C:\Program Files\MongoDB\Server\4.4\bin\mongo.exe
> db.products.find({"details.title":/x/}).pretty();
{
  "_id" : ObjectId("60369d29400c50827af2431c"),
  "type" : "Film",
  "shipping" : {
    "weight" : 10,
    "dimensions" : {
      "width" : 20,
      "height" : 30,
      "depth" : 1
    }
  },
  "pricing" : {
    "list" : 2200,
    "retail" : 5100,
    "savings" : 200,
    "pct_savings" : 10
  },
  "details" : {
    "title" : "The Matrix",
    "director" : [
      "Andy Wachowski",
      "Larry Wachowski"
    ],
    "writer" : [
      "Andy Wachowski",
      "Larry Wachowski"
    ],
    "aspect_ratio" : "1.66:1"
  }
}
```


N - داکيومنت ها با فيلد aspect_ratio:1.66:1 در بخش details را از collection حذف کنید

A screenshot of a MongoDB command prompt window. The title bar shows the path 'C:\Program Files\MongoDB\Server\4.4\bin\mongo.exe' and standard window controls. The command prompt is black with white text, showing the command: > db.products.deleteMany({"details.aspect_ratio":{"\$eq":"1.66:1"}})

```
C:\Program Files\MongoDB\Server\4.4\bin\mongo.exe
> db.products.deleteMany({"details.aspect_ratio":{"$eq":"1.66:1"}})
```