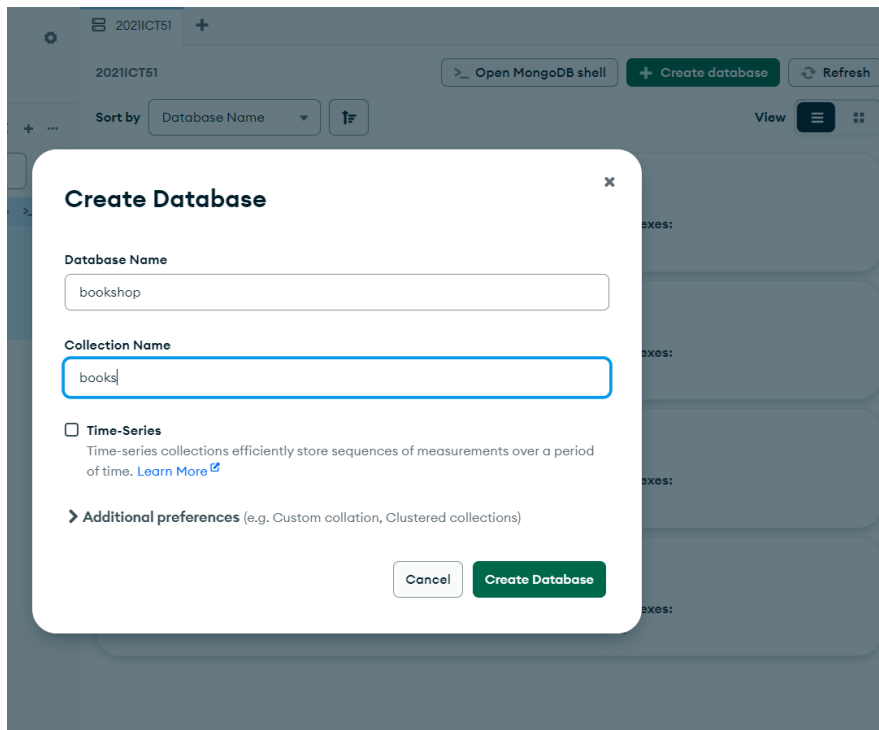# MongoDB Exercise

1. create a database bookshop

create a collection books

2. Insert the following data

```
{
  "title": "The Hobbit",
  "author": "J.R.R. Tolkien",
  "published_year": 1937,
  "genres": ["Fantasy", "Adventure"],
  "pages": 310,
  "available": true,
  "rating": 4.8
```

```json
  }
  {
    "title": "1984",
    "author": "George Orwell",
    "published_year": 1949,
    "genres": ["Dystopian", "Political Fiction"],
    "pages": 328,
    "available": true,
    "rating": 4.7
  },
  {
    "title": "To Kill a Mockingbird",
    "author": "Harper Lee",
    "published_year": 1960,
    "genres": ["Southern Gothic", "Drama"],
    "pages": 281,
    "available": false,
    "rating": 4.6
  },
  {
    "title": "The Great Gatsby",
    "author": "F. Scott Fitzgerald",
    "published_year": 1925,
    "genres": ["Tragedy"],
    "pages": 180,
    "available": true,
```
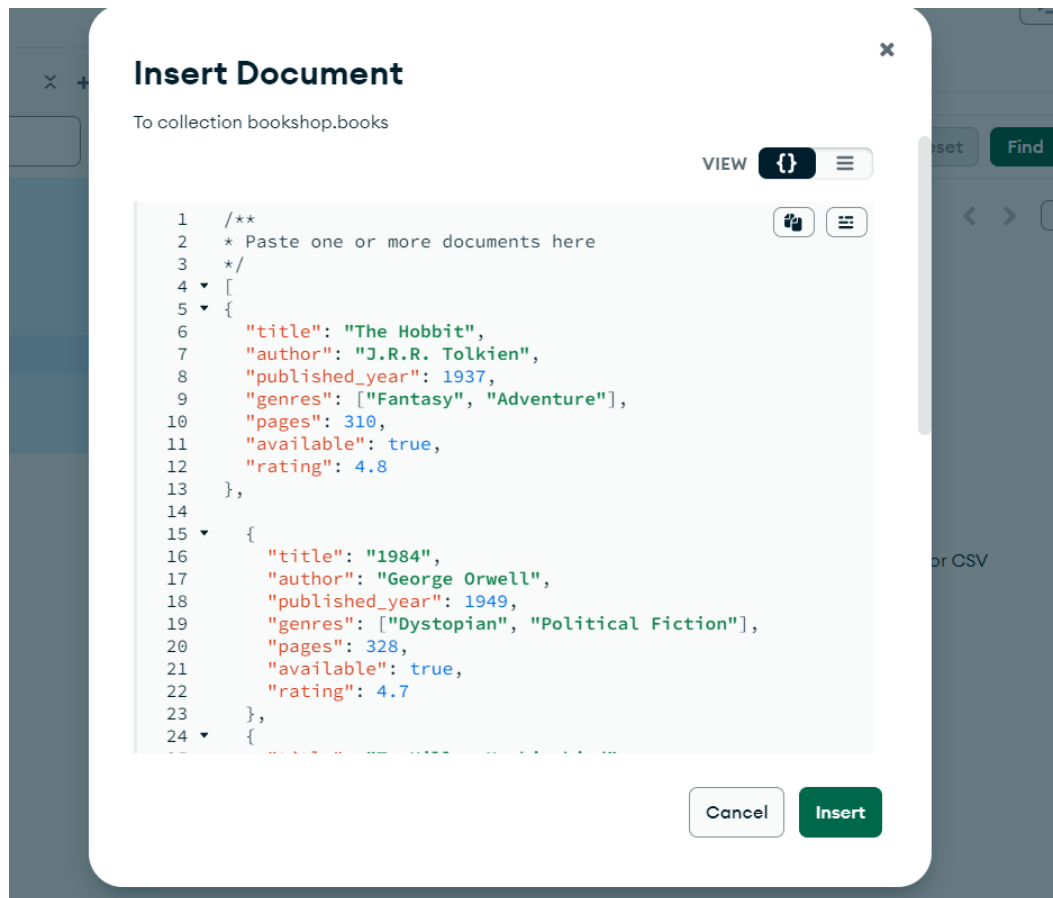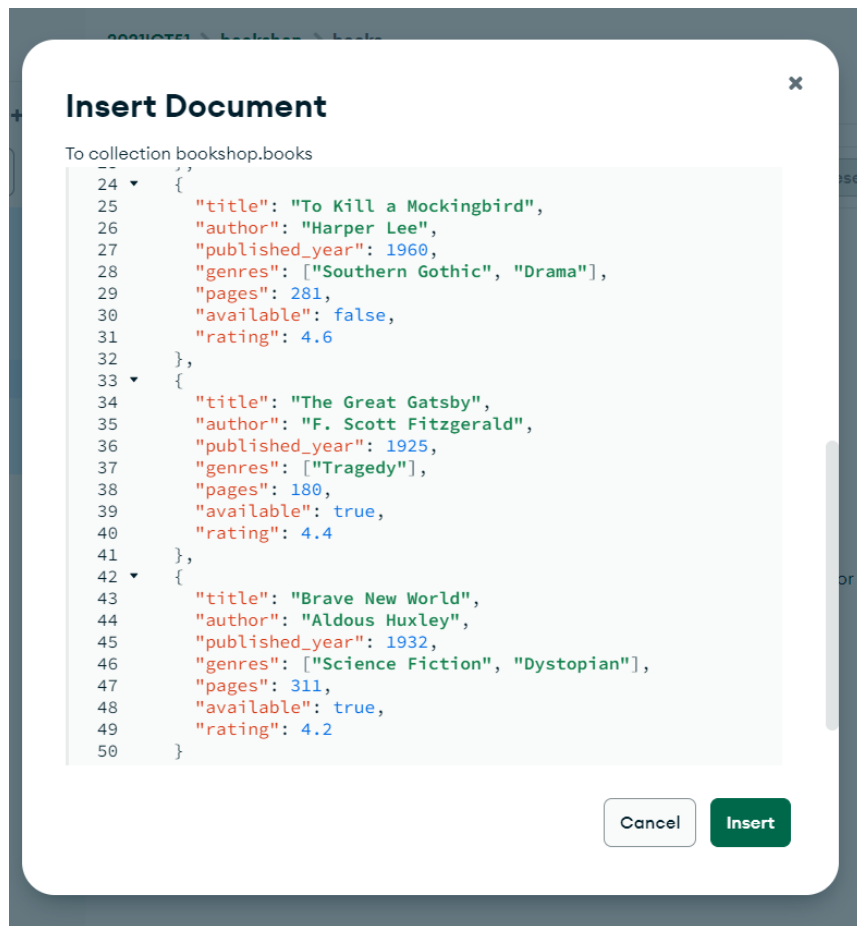
```
  "rating": 4.4

},

{

 "title": "Brave New World",

 "author": "Aldous Huxley",

 "published_year": 1932,

 "genres": ["Science Fiction", "Dystopian"],

 "pages": 311,

 "available": true,

 "rating": 4.2

}
```

Insert Document

To collection bookshop.books

VIEW {} ≡

```
 1   /**
 2    * Paste one or more documents here
 3    */
 4 ▾ [
 5 ▾   {
 6       "title": "The Hobbit",
 7       "author": "J.R.R. Tolkien",
 8       "published_year": 1937,
 9       "genres": ["Fantasy", "Adventure"],
10       "pages": 310,
11       "available": true,
12       "rating": 4.8
13     },
14
15 ▾   {
16       "title": "1984",
17       "author": "George Orwell",
18       "published_year": 1949,
19       "genres": ["Dystopian", "Political Fiction"],
20       "pages": 328,
21       "available": true,
22       "rating": 4.7
23     },
24 ▾   {
```

Cancel   Insert

Insert Document

To collection bookshop.books

```
24 ▾    {
25        "title": "To Kill a Mockingbird",
26        "author": "Harper Lee",
27        "published_year": 1960,
28        "genres": ["Southern Gothic", "Drama"],
29        "pages": 281,
30        "available": false,
31        "rating": 4.6
32      },
33 ▾    {
34        "title": "The Great Gatsby",
35        "author": "F. Scott Fitzgerald",
36        "published_year": 1925,
37        "genres": ["Tragedy"],
38        "pages": 180,
39        "available": true,
40        "rating": 4.4
41      },
42 ▾    {
43        "title": "Brave New World",
44        "author": "Aldous Huxley",
45        "published_year": 1932,
46        "genres": ["Science Fiction", "Dystopian"],
47        "pages": 311,
48        "available": true,
49        "rating": 4.2
50      }
```
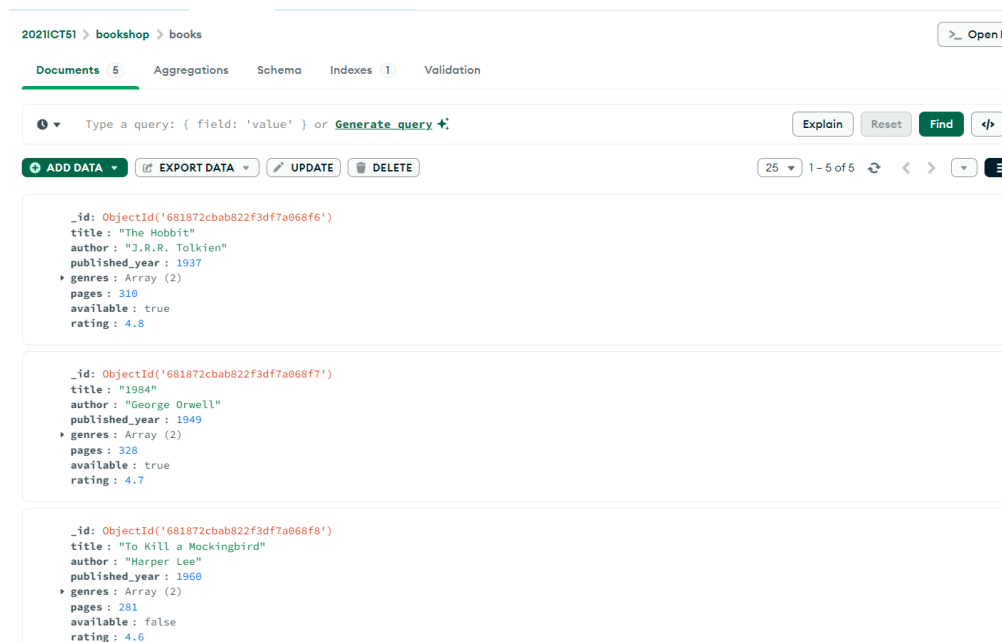
Cancel   Insert

Inserted Data:

2021ICT51 > bookshop > books   >_ Open

Documents 5   Aggregations   Schema   Indexes 1   Validation

Type a query: { field: 'value' } or **Generate query** ✦   Explain   Reset   Find   </>

⊕ ADD DATA ▾   ☑ EXPORT DATA ▾   ✎ UPDATE   🗑 DELETE   25 ▾ 1–5 of 5 ⟳ ‹ › ▾

```
_id: ObjectId('681872cbab822f3df7a068f6')
title : "The Hobbit"
author : "J.R.R. Tolkien"
published_year : 1937
▸ genres : Array (2)
pages : 310
available : true
rating : 4.8


_id: ObjectId('681872cbab822f3df7a068f7')
title : "1984"
author : "George Orwell"
published_year : 1949
▸ genres : Array (2)
pages : 328
available : true
rating : 4.7


_id: ObjectId('681872cbab822f3df7a068f8')
title : "To Kill a Mockingbird"
author : "Harper Lee"
published_year : 1960
▸ genres : Array (2)
pages : 281
available : false
rating : 4.6
```

Open M

Documents 5   Aggregations   Schema   Indexes 1   Validation

Type a query: { field: 'value' } or **Generate query** ✦   Explain   Reset   Find </>

⊕ ADD DATA ▾   ⬈ EXPORT DATA ▾   ✎ UPDATE   🗑 DELETE   25 ▾ 1 – 5 of 5 ⟳ ‹ › ▾ ☰

```
        _id: ObjectId('681872cbab822f3df7a068f8')
        title : "To Kill a Mockingbird"
        author : "Harper Lee"
        published_year : 1960
      ▸ genres : Array (2)
        pages : 281
        available : false
        rating : 4.6


        _id: ObjectId('681872cbab822f3df7a068f9')
        title : "The Great Gatsby"
        author : "F. Scott Fitzgerald"
        published_year : 1925
      ▸ genres : Array (1)
        pages : 180
        available : true
        rating : 4.4


  ▶     _id: ObjectId('681872cbab822f3df7a068fa')          ✎  ▣
        title : "Brave New World"
        author : "Aldous Huxley"
        published_year : 1932
      ▸ genres : Array (2)
        pages : 311
        available : true
        rating : 4.2
```

3.Find all books

db.books.find()

```
>_MONGOSH                                                          ⓘ
> db.bookshop.find()
< {
    _id: ObjectId('6818723ec3fd4e6bc8051791'),
    title: 'The Hobbit',
    author: 'J.R.R. Tolkien',
    published_year: 1937,
    genres: [
      'Fantasy',
      'Adventure'
    ],
    pages: 310,
    available: true,
    rating: 4.8
  }
  {
    _id: ObjectId('6818723ec3fd4e6bc8051792'),
    title: '1984',
    author: 'George Orwell',
    published_year: 1949,
    genres: [
      'Dystopian',
      'Political Fiction'
    ],
    pages: 328,
    available: true,
    rating: 4.7
  }
```

```
>_MONGOSH
  {
    _id: ObjectId('6818723ec3fd4e6bc8051793'),
    title: 'To Kill a Mockingbird',
    author: 'Harper Lee',
    published_year: 1960,
    genres: [
      'Southern Gothic',
      'Drama'
    ],
    pages: 281,
    available: false,
    rating: 4.6
  }
  {
    _id: ObjectId('6818723ec3fd4e6bc8051794'),
    title: 'The Great Gatsby',
    author: 'F. Scott Fitzgerald',
    published_year: 1925,
    genres: [
      'Tragedy'
    ],
    pages: 180,
    available: true,
    rating: 4.4
  }
  {
```

```
  {
    _id: ObjectId('6818723ec3fd4e6bc8051795'),
    title: 'Brave New World',
    author: 'Aldous Huxley',
    published_year: 1932,
    genres: [
      'Science Fiction',
      'Dystopian'
    ],
    pages: 311,
    available: true,
    rating: 4.2
  }
bookshop >
```

4.Find all books published after 1950

db.books.find({ published_year: { $gt: 1950 } })

```
> db.books.find({ published_year: { $gt: 1950 } })
< {
    _id: ObjectId('681872cbab822f3df7a068f8'),
    title: 'To Kill a Mockingbird',
    author: 'Harper Lee',
    published_year: 1960,
    genres: [
      'Southern Gothic',
      'Drama'
    ],
    pages: 281,
    available: false,
    rating: 4.6
  }
bookshop >
```

5.Find the available books

db.books.find({ available: true })

```
> db.books.find({ available: true })
< {
    _id: ObjectId('681872cbab822f3df7a068f6'),
    title: 'The Hobbit',
    author: 'J.R.R. Tolkien',
    published_year: 1937,
    genres: [
      'Fantasy',
      'Adventure'
    ],
    pages: 310,
    available: true,
    rating: 4.8
  }
  {
    _id: ObjectId('681872cbab822f3df7a068f7'),
    title: '1984',
    author: 'George Orwell',
    published_year: 1949,
    genres: [
      'Dystopian',
      'Political Fiction'
    ],
    pages: 328,
    available: true,
    rating: 4.7
  }
```

```
  {
    _id: ObjectId('681872cbab822f3df7a068f9'),
    title: 'The Great Gatsby',
    author: 'F. Scott Fitzgerald',
    published_year: 1925,
    genres: [
      'Tragedy'
    ],
    pages: 180,
    available: true,
    rating: 4.4
  }
  {
    _id: ObjectId('681872cbab822f3df7a068fa'),
    title: 'Brave New World',
    author: 'Aldous Huxley',
    published_year: 1932,
    genres: [
      'Science Fiction',
      'Dystopian'
    ],
    pages: 311,
    available: true,
    rating: 4.2
  }
bookshop >
```

6.Find all books that belong to the "Dystopian" genre

db.books.find({ genres: "Dystopian" })

```
> db.books.find({ genres: "Dystopian" })
< {
    _id: ObjectId('681872cbab822f3df7a068f7'),
    title: '1984',
    author: 'George Orwell',
    published_year: 1949,
    genres: [
      'Dystopian',
      'Political Fiction'
    ],
    pages: 328,
    available: true,
    rating: 4.7
  }
  {
    _id: ObjectId('681872cbab822f3df7a068fa'),
    title: 'Brave New World',
    author: 'Aldous Huxley',
    published_year: 1932,
    genres: [
      'Science Fiction',
      'Dystopian'
    ],
    pages: 311,
    available: true,
    rating: 4.2
  }
bookshop >
```

7.Find the books published after 1960 and had rating more than 4.0

db.books.find({ published_year: { $gt: 1960 }, rating: { $gt: 4.0 } })

```
<
> db.books.find({ published_year: { $gt: 1960 }, rating: { $gt: 4.0 } })
<
bookshop >
```

8. Project only title and author fields

db.books.find({}, { title: 1, author: 1, _id: 0 })

```
> db.books.find({}, { title: 1, author: 1, _id: 0 })
< {
    title: 'The Hobbit',
    author: 'J.R.R. Tolkien'
  }
  {
    title: '1984',
    author: 'George Orwell'
  }
  {
    title: 'To Kill a Mockingbird',
    author: 'Harper Lee'
  }
  {
    title: 'The Great Gatsby',
    author: 'F. Scott Fitzgerald'
  }
  {
    title: 'Brave New World',
    author: 'Aldous Huxley'
  }
bookshop >
```

9. Update the book "1984" to set available: false

db.books.updateOne(

  { title: "1984" },

  { $set: { available: false } }

)

```
> db.books.updateOne(
    { title: "1984" },
    { $set: { available: false } }
  )
< {
    acknowledged: true,
    insertedId: null,
    matchedCount: 1,
    modifiedCount: 1,
    upsertedCount: 0
  }
bookshop >
```

```
    _id: ObjectId('681872cbab822f3df7a068f7')
    title : "1984"
    author : "George Orwell"
    published_year : 1949
  ▸ genres : Array (2)
    pages : 328
    available : false
    rating : 4.7
```

10. Increase the rating of "Brave New World" by +0.1

db.books.updateOne(

 { title: "Brave New World" },

 { $inc: { rating: 0.1 } }

)

```
> db.books.updateOne(
    { title: "Brave New World" },
    { $inc: { rating: 0.1 } }
  )
< {
    acknowledged: true,
    insertedId: null,
    matchedCount: 1,
    modifiedCount: 1,
    upsertedCount: 0
  }
bookshop >
```

```
_id: ObjectId('681872cbab822f3df7a068fa')
title : "Brave New World"
author : "Aldous Huxley"
published_year : 1932
▶ genres : Array (2)
pages : 311
available : true
rating : 4.3
```

11. Add a new genre "Classic" to "The Great Gatsby"

db.books.updateOne(

 { title: "The Great Gatsby" },

 { $addToSet: { genres: "Classic" } }

)

```
> db.books.updateOne(
    { title: "The Great Gatsby" },
    { $addToSet: { genres: "Classic" } }
  )
< {
    acknowledged: true,
    insertedId: null,
    matchedCount: 1,
    modifiedCount: 1,
    upsertedCount: 0
  }
bookshop >
```

```
  ▶   _id: ObjectId('681872cbab822f3df7a068f9')
        title : "The Great Gatsby"
        author : "F. Scott Fitzgerald"
        published_year : 1925
      ▼ genres : Array (2)
          0: "Tragedy"
          1: "Classic"
        pages : 180
        available : true
        rating : 4.4
```

12. Sort books by published year ascending

db.books.find().sort({ published_year: 1 })

```
>_MONGOSH
> db.books.find().sort({ published_year: 1 })
< {
    _id: ObjectId('681872cbab822f3df7a068f9'),
    title: 'The Great Gatsby',
    author: 'F. Scott Fitzgerald',
    published_year: 1925,
    genres: [
      'Tragedy',
      'Classic'
    ],
    pages: 180,
    available: true,
    rating: 4.4
  }
  {
    _id: ObjectId('681872cbab822f3df7a068fa'),
    title: 'Brave New World',
    author: 'Aldous Huxley',
    published_year: 1932,
    genres: [
      'Science Fiction',
      'Dystopian'
    ],
    pages: 311,
    available: true,
    rating: 4.3
  }
```

```
>_MONGOSH                                                                        ⓘ
  {
    _id: ObjectId('681872cbab822f3df7a068f6'),
    title: 'The Hobbit',
    author: 'J.R.R. Tolkien',
    published_year: 1937,
    genres: [
      'Fantasy',
      'Adventure'
    ],
    pages: 310,
    available: true,
    rating: 4.8
  }
  {
    _id: ObjectId('681872cbab822f3df7a068f7'),
    title: '1984',
    author: 'George Orwell',
    published_year: 1949,
    genres: [
      'Dystopian',
      'Political Fiction'
    ],
    pages: 328,
    available: false,
    rating: 4.7
  }
```

```
  {
    _id: ObjectId('681872cbab822f3df7a068f8'),
    title: 'To Kill a Mockingbird',
    author: 'Harper Lee',
    published_year: 1960,
    genres: [
      'Southern Gothic',
      'Drama'
    ],
    pages: 281,
    available: false,
    rating: 4.6
  }
bookshop >
```

13. Sort books by rating descending

db.books.find().sort({ rating: -1 })

```
>_MONGOSH                                                                                    ⓘ

> db.books.find().sort({ rating: -1 })
< {
    _id: ObjectId('681872cbab822f3df7a068f6'),
    title: 'The Hobbit',
    author: 'J.R.R. Tolkien',
    published_year: 1937,
    genres: [
      'Fantasy',
      'Adventure'
    ],
    pages: 310,
    available: true,
    rating: 4.8
  }
  {
    _id: ObjectId('681872cbab822f3df7a068f7'),
    title: '1984',
    author: 'George Orwell',
    published_year: 1949,
    genres: [
      'Dystopian',
      'Political Fiction'
    ],
    pages: 328,
    available: false,
    rating: 4.7
  }
```

```
>_MONGOSH

  {
    _id: ObjectId('681872cbab822f3df7a068f8'),
    title: 'To Kill a Mockingbird',
    author: 'Harper Lee',
    published_year: 1960,
    genres: [
      'Southern Gothic',
      'Drama'
    ],
    pages: 281,
    available: false,
    rating: 4.6
  }
  {
    _id: ObjectId('681872cbab822f3df7a068f9'),
    title: 'The Great Gatsby',
    author: 'F. Scott Fitzgerald',
    published_year: 1925,
    genres: [
      'Tragedy',
      'Classic'
    ],
    pages: 180,
    available: true,
    rating: 4.4
  }
```

```
  {
    _id: ObjectId('681872cbab822f3df7a068fa'),
    title: 'Brave New World',
    author: 'Aldous Huxley',
    published_year: 1932,
    genres: [
      'Science Fiction',
      'Dystopian'
    ],
    pages: 311,
    available: true,
    rating: 4.3
  }
bookshop >
```

14. Delete all books with a rating lower than 4.5

db.books.deleteMany({ rating: { $lt: 4.5 } })

```
> db.books.deleteMany({ rating: { $lt: 4.5 } })
< {
    acknowledged: true,
    deletedCount: 2
  }
bookshop >
```

Documents 5   Aggregations   Schema   Indexes 1   Validation

Type a query: { field: 'value' } or **Generate query** ✦   Explain   Reset   **Find**   </>   Opti

⊕ ADD DATA ▾   ☑ EXPORT DATA ▾   ✎ UPDATE   🗑 DELETE   25 ▾ 1–3 of 3 ↻ ‹ › ▾ ☰ {}

```
    _id: ObjectId('681872cbab822f3df7a068f6')
    title : "The Hobbit"
    author : "J.R.R. Tolkien"
    published_year : 1937
  ▸ genres : Array (2)
    pages : 310
    available : true
    rating : 4.8
```

```
▶   _id: ObjectId('681872cbab822f3df7a068f7')                                    ✎  🗏  🗐
    title : "1984"
    author : "George Orwell"
    published_year : 1949
  ▸ genres : Array (2)
    pages : 328
    available : false
    rating : 4.7
```

```
    _id: ObjectId('681872cbab822f3df7a068f8')
    title : "To Kill a Mockingbird"
    author : "Harper Lee"
    published_year : 1960
  ▸ genres : Array (2)
    pages : 281
    available : false
    rating : 4.6
```