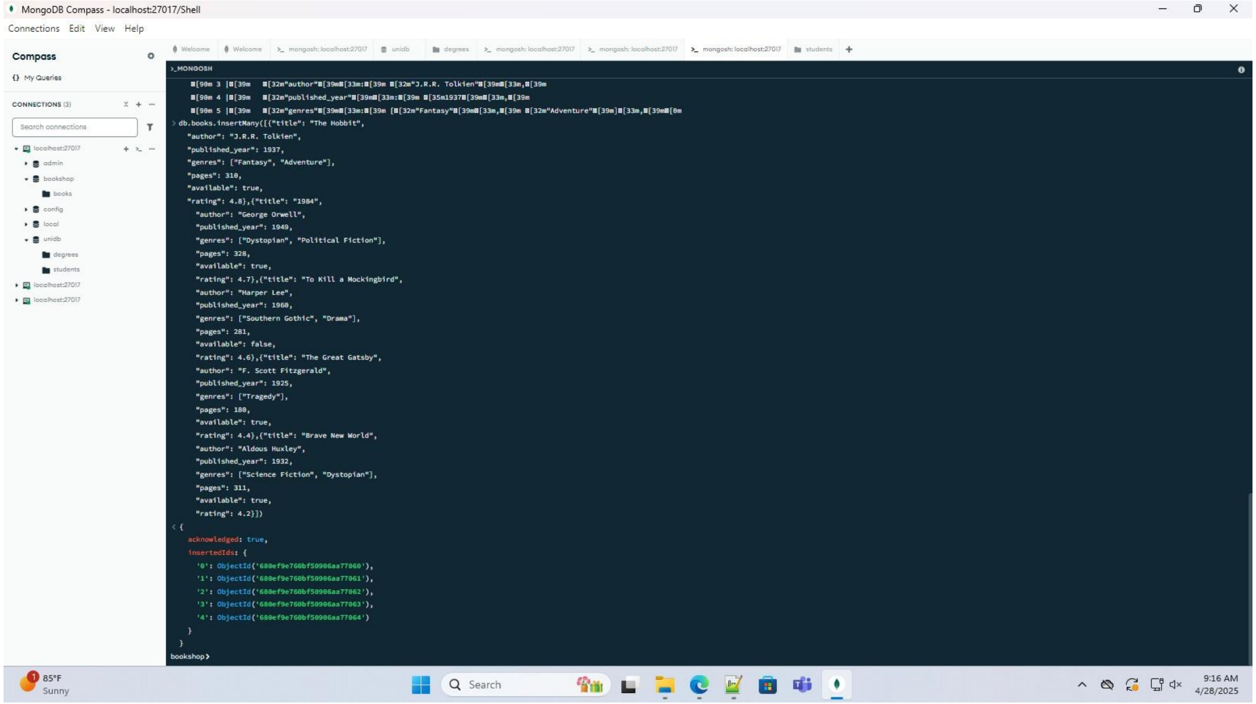
Date: 2024.04.28

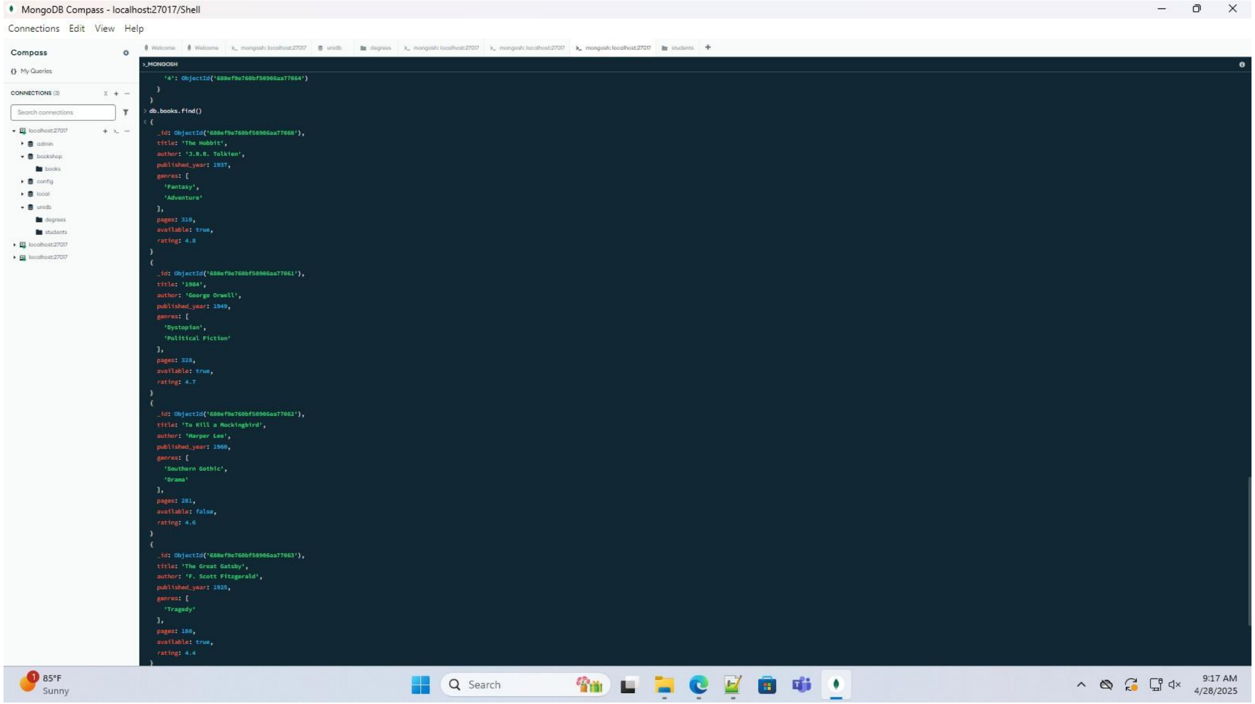
1. Create a database bookshop.
2. Create a collection books.
3. Insert the following data.

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



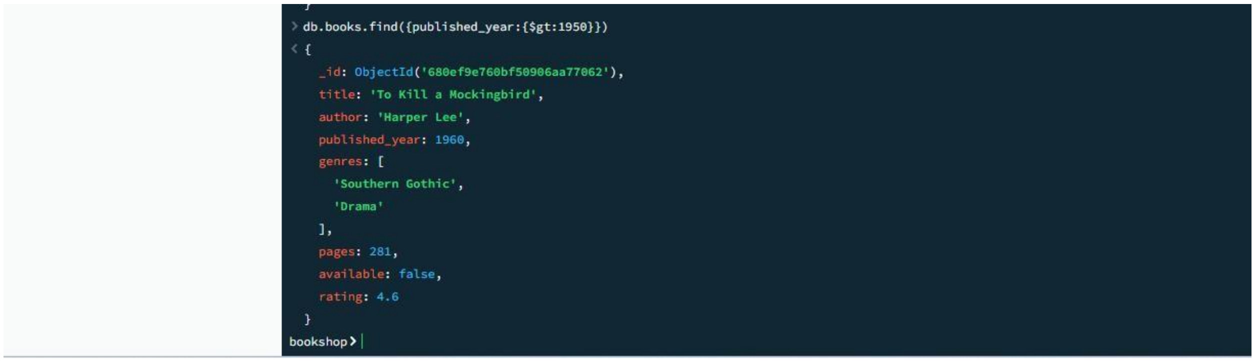
```
    ▯[90m 3 |▯[39m   ▯[32m"author"▯[39m▯[33m:▯[39m ▯[32m"J.R.R. Tolkien"▯[39m▯[33m,▯[39m
    ▯[90m 4 |▯[39m   ▯[32m"published_year"▯[39m▯[33m:▯[39m ▯[35m1937▯[39m▯[33m,▯[39m
    ▯[90m 5 |▯[39m   ▯[32m"genres"▯[39m▯[33m:▯[39m [▯[32m"Fantasy"▯[39m▯[33m,▯[39m ▯[32m"Adventure"▯[39m]▯[33m,▯[39m▯[0m
> db.books.insertMany([{"title": "The Hobbit",
  "author": "J.R.R. Tolkien",
  "published_year": 1937,
  "genres": ["Fantasy", "Adventure"],
  "pages": 310,
  "available": true,
  "rating": 4.8},{"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}])
< {
    acknowledged: true,
    insertedIds: {
      '0': ObjectId('680ef9e760bf50906aa77060'),
      '1': ObjectId('680ef9e760bf50906aa77061'),
      '2': ObjectId('680ef9e760bf50906aa77062'),
      '3': ObjectId('680ef9e760bf50906aa77063'),
      '4': ObjectId('680ef9e760bf50906aa77064')
    }
  }
bookshop>
```

4. Write the query to find all books.



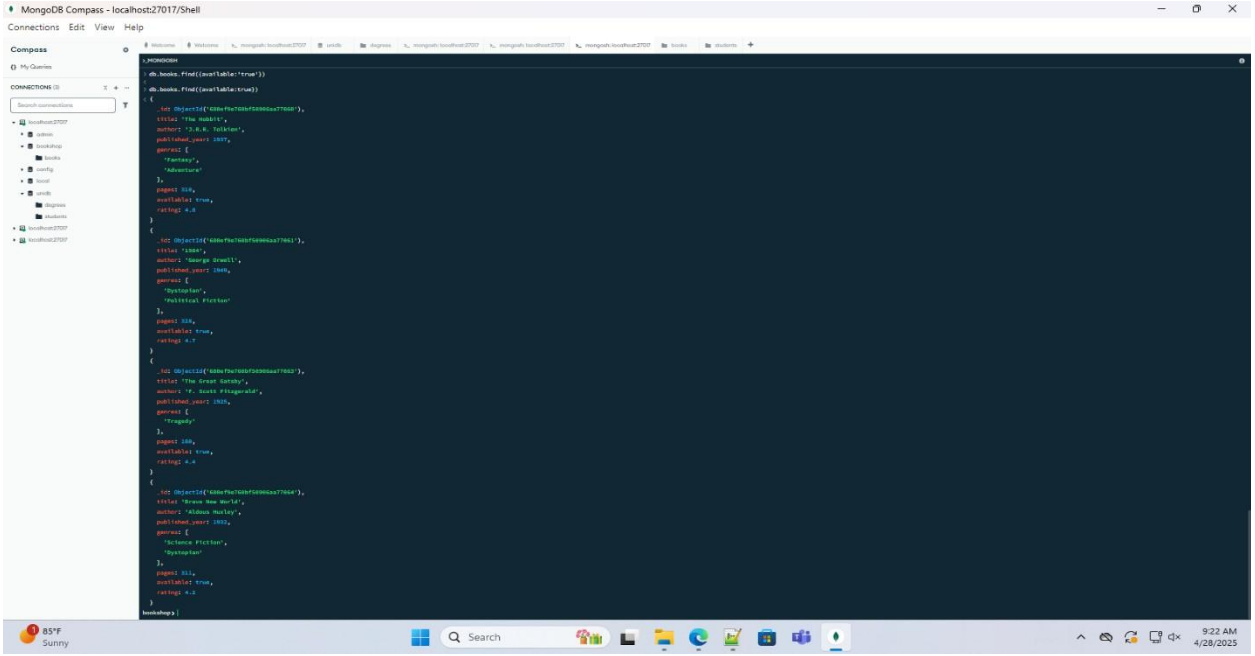
```
    '4': ObjectId('680ef9e760bf50906aa77064')
  }
}
> db.books.find()
< {
    _id: ObjectId('680ef9e760bf50906aa77060'),
    title: 'The Hobbit',
    author: 'J.R.R. Tolkien',
    published_year: 1937,
    genres: [
      'Fantasy',
      'Adventure'
    ],
    pages: 310,
    available: true,
    rating: 4.8
  }
  {
    _id: ObjectId('680ef9e760bf50906aa77061'),
    title: '1984',
    author: 'George Orwell',
    published_year: 1949,
    genres: [
      'Dystopian',
      'Political Fiction'
    ],
    pages: 328,
    available: true,
    rating: 4.7
  }
  {
    _id: ObjectId('680ef9e760bf50906aa77062'),
    title: 'To Kill a Mockingbird',
    author: 'Harper Lee',
    published_year: 1960,
    genres: [
      'Southern Gothic',
      'Drama'
    ],
    pages: 281,
    available: false,
    rating: 4.6
  }
  {
    _id: ObjectId('680ef9e760bf50906aa77063'),
    title: 'The Great Gatsby',
    author: 'F. Scott Fitzgerald',
    published_year: 1925,
    genres: [
      'Tragedy'
    ],
    pages: 180,
    available: true,
    rating: 4.4
  }
```

5. Write the query to find all books published after 1950.



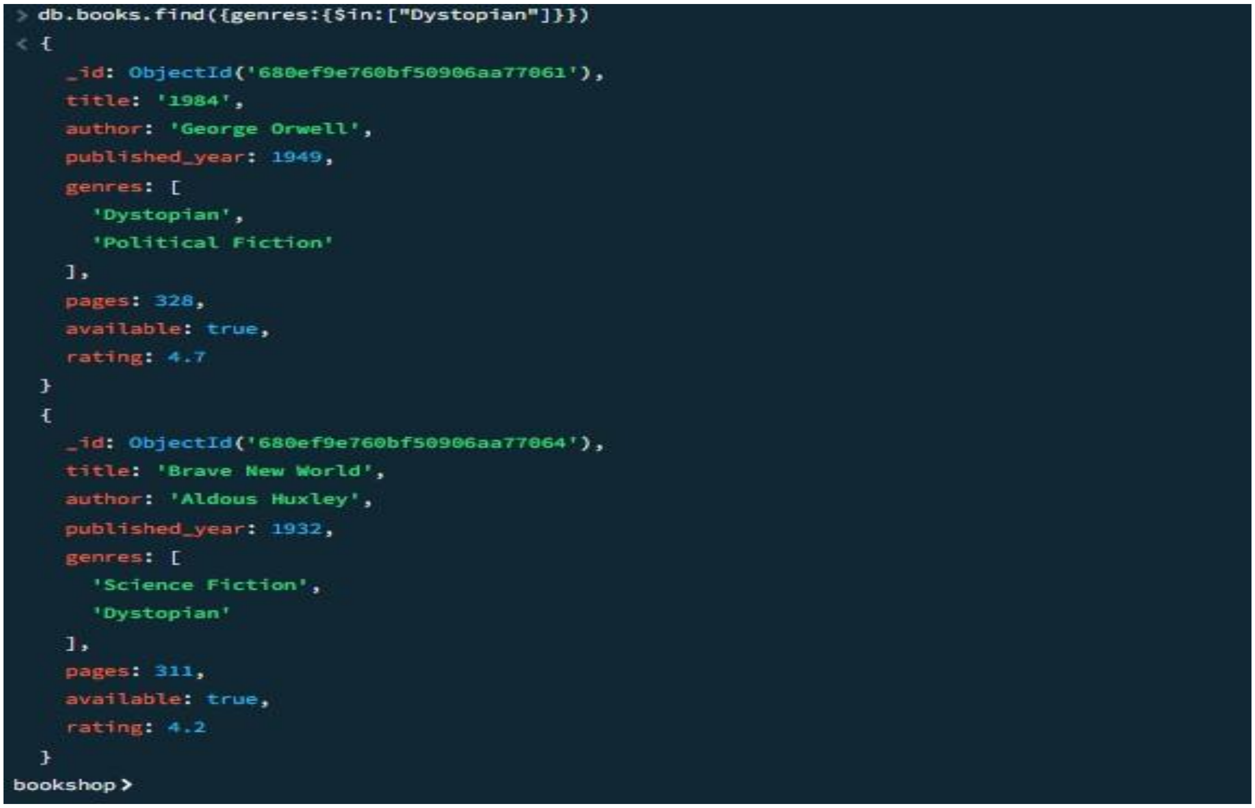
```
> db.books.find({published_year:{$gt:1950}})
< {
    _id: ObjectId('680ef9e760bf50906aa77062'),
    title: 'To Kill a Mockingbird',
    author: 'Harper Lee',
    published_year: 1960,
    genres: [
      'Southern Gothic',
      'Drama'
    ],
    pages: 281,
    available: false,
    rating: 4.6
  }
bookshop>
```

6. Write the query to find the available books.



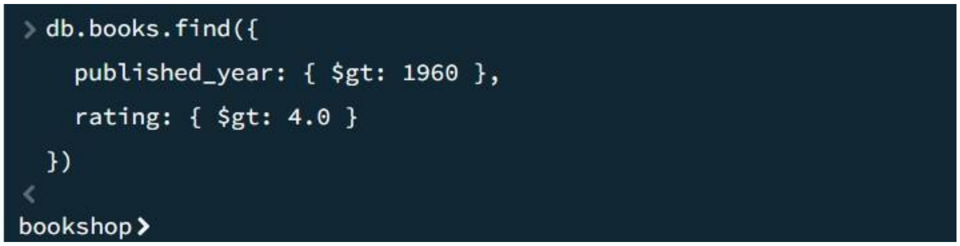
```
> db.books.find({available:'true'})
<
> db.books.find({available:true})
< {
    _id: ObjectId('680ef9e760bf50906aa77060'),
    title: 'The Hobbit',
    author: 'J.R.R. Tolkien',
    published_year: 1937,
    genres: [
      'Fantasy',
      'Adventure'
    ],
    pages: 310,
    available: true,
    rating: 4.8
  }
  {
    _id: ObjectId('680ef9e760bf50906aa77061'),
    title: '1984',
    author: 'George Orwell',
    published_year: 1949,
    genres: [
      'Dystopian',
      'Political Fiction'
    ],
    pages: 328,
    available: true,
    rating: 4.7
  }
  {
    _id: ObjectId('680ef9e760bf50906aa77062'),
    title: 'The Great Gatsby',
    author: 'F. Scott Fitzgerald',
    published_year: 1925,
    genres: [
      'Tragedy'
    ],
    pages: 180,
    available: true,
    rating: 4.4
  }
  {
    _id: ObjectId('680ef9e760bf50906aa77064'),
    title: 'Brave New World',
    author: 'Aldous Huxley',
    published_year: 1932,
    genres: [
      'Science Fiction',
      'Dystopian'
    ],
    pages: 311,
    available: true,
    rating: 4.2
  }
bookshop>
```

7. Write the query to find all books that belong to the "Dystopian" genre.



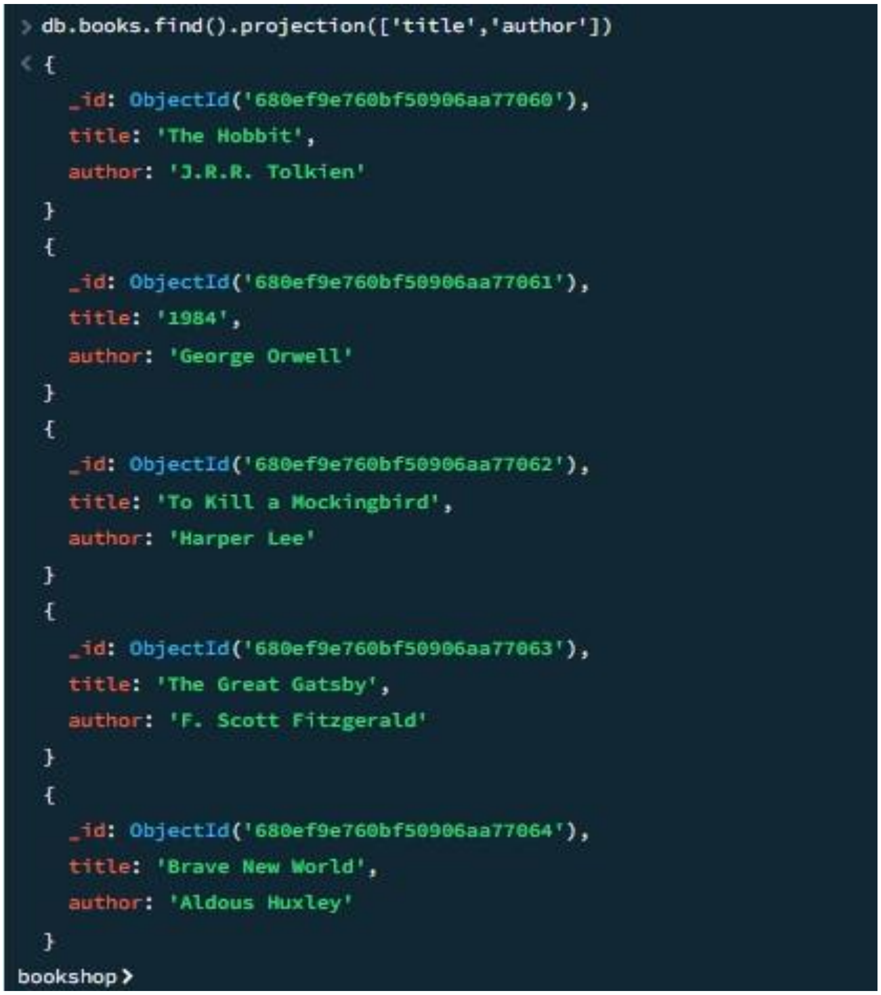
```
> db.books.find({genres:{$in:["Dystopian"]}})
< {
    _id: ObjectId('680ef9e760bf50906aa77061'),
    title: '1984',
    author: 'George Orwell',
    published_year: 1949,
    genres: [
      'Dystopian',
      'Political Fiction'
    ],
    pages: 328,
    available: true,
    rating: 4.7
  }
  {
    _id: ObjectId('680ef9e760bf50906aa77064'),
    title: 'Brave New World',
    author: 'Aldous Huxley',
    published_year: 1932,
    genres: [
      'Science Fiction',
      'Dystopian'
    ],
    pages: 311,
    available: true,
    rating: 4.2
  }
bookshop>
```

8. Write the query to find the books which published after 1960 and had rating more than 4.0.



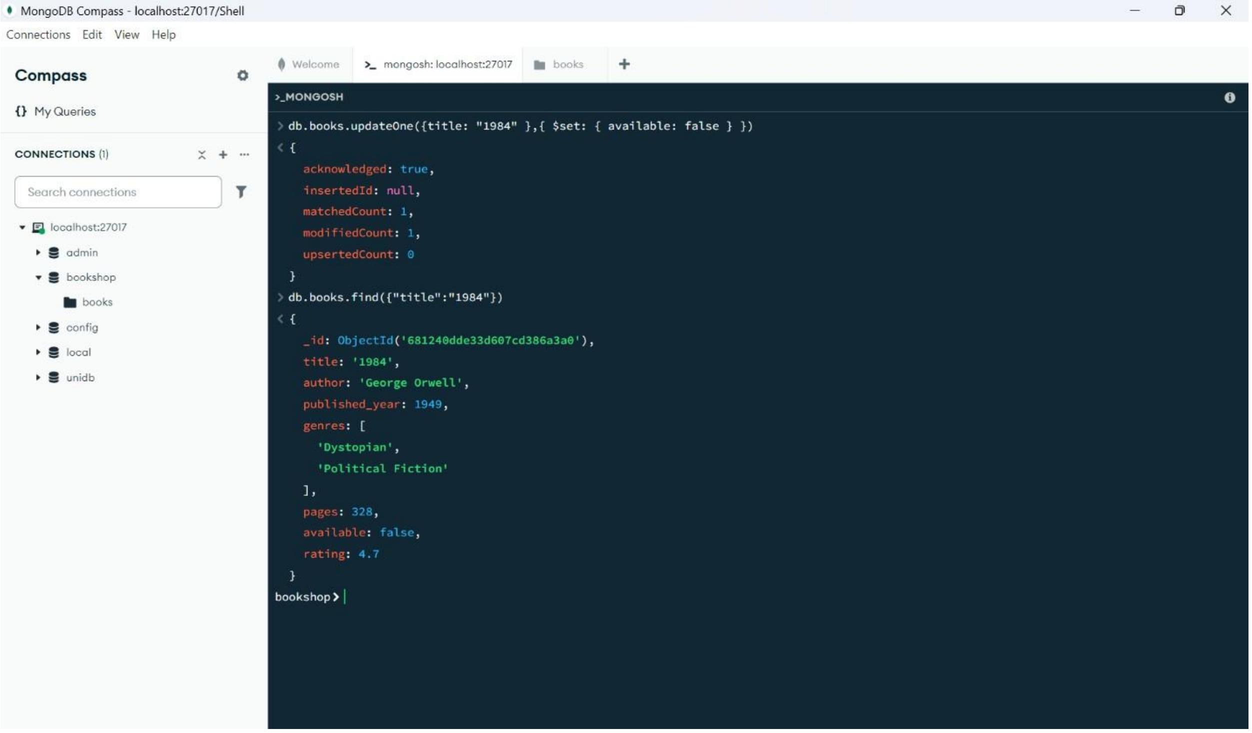
```
> db.books.find({
    published_year: { $gt: 1960 },
    rating: { $gt: 4.0 }
  })
<
bookshop>
```

9. Write the query to project only title and author fields.



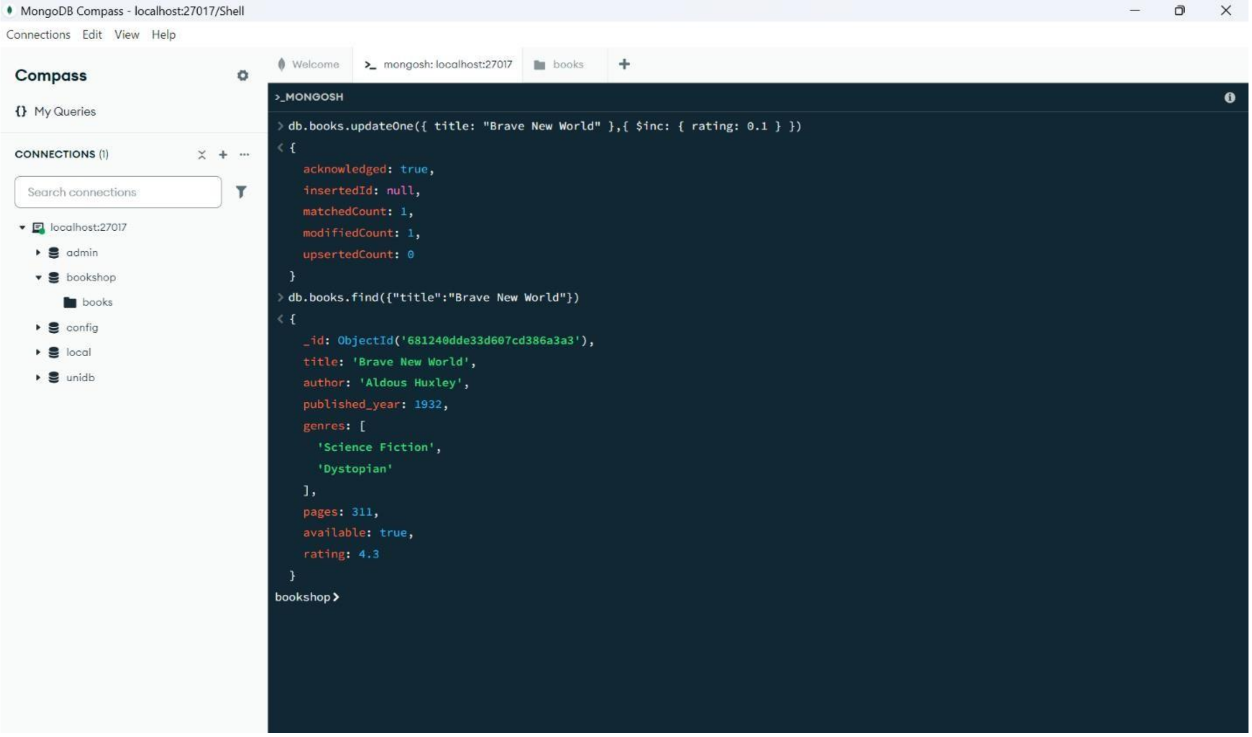
```
> db.books.find().projection(['title','author'])
< {
    _id: ObjectId('680ef9e760bf50906aa77060'),
    title: 'The Hobbit',
    author: 'J.R.R. Tolkien'
  }
  {
    _id: ObjectId('680ef9e760bf50906aa77061'),
    title: '1984',
    author: 'George Orwell'
  }
  {
    _id: ObjectId('680ef9e760bf50906aa77062'),
    title: 'To Kill a Mockingbird',
    author: 'Harper Lee'
  }
  {
    _id: ObjectId('680ef9e760bf50906aa77063'),
    title: 'The Great Gatsby',
    author: 'F. Scott Fitzgerald'
  }
  {
    _id: ObjectId('680ef9e760bf50906aa77064'),
    title: 'Brave New World',
    author: 'Aldous Huxley'
  }
bookshop>
```

10. Write the query to update the book "1984" to set available: false.



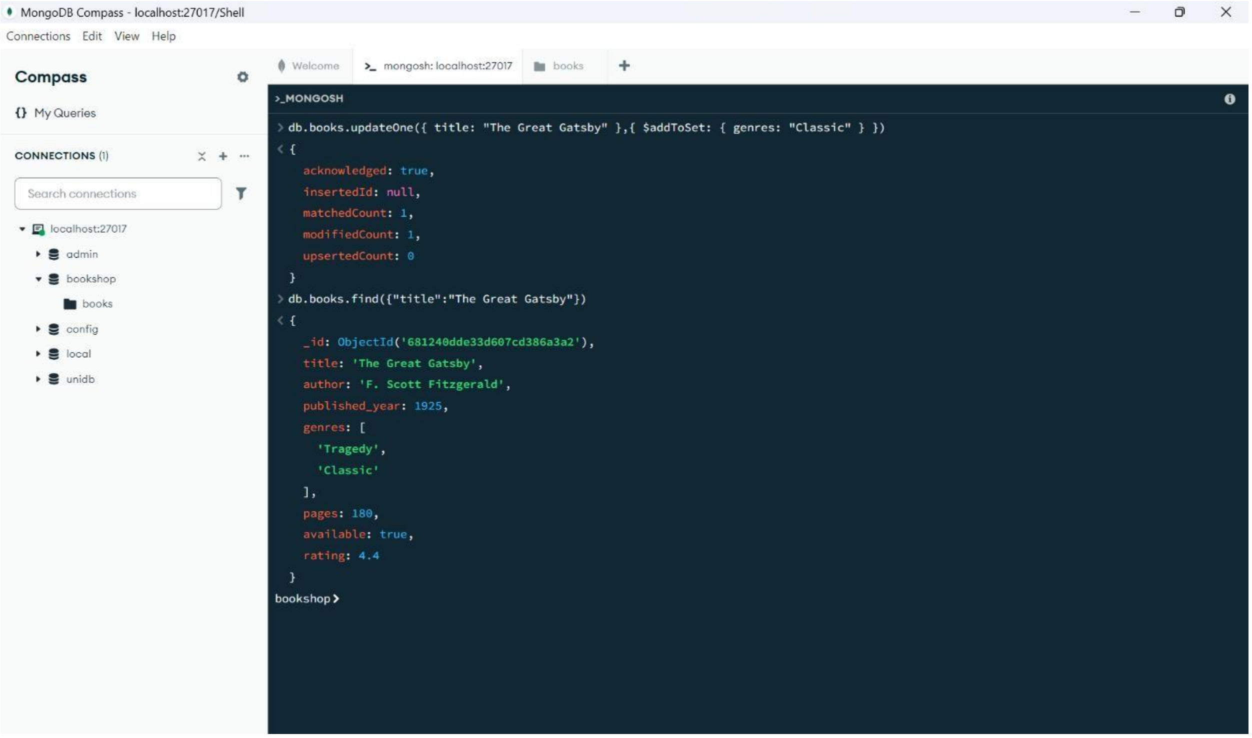
```
> db.books.updateOne({title: "1984" },{ $set: { available: false } })
< {
    acknowledged: true,
    insertedId: null,
    matchedCount: 1,
    modifiedCount: 1,
    upsertedCount: 0
  }
> db.books.find({"title":"1984"})
< {
    _id: ObjectId('681240dde33d607cd386a3a0'),
    title: '1984',
    author: 'George Orwell',
    published_year: 1949,
    genres: [
      'Dystopian',
      'Political Fiction'
    ],
    pages: 328,
    available: false,
    rating: 4.7
  }
bookshop>
```

11. Write the query to increase the rating of "Brave New World" by +0.1.



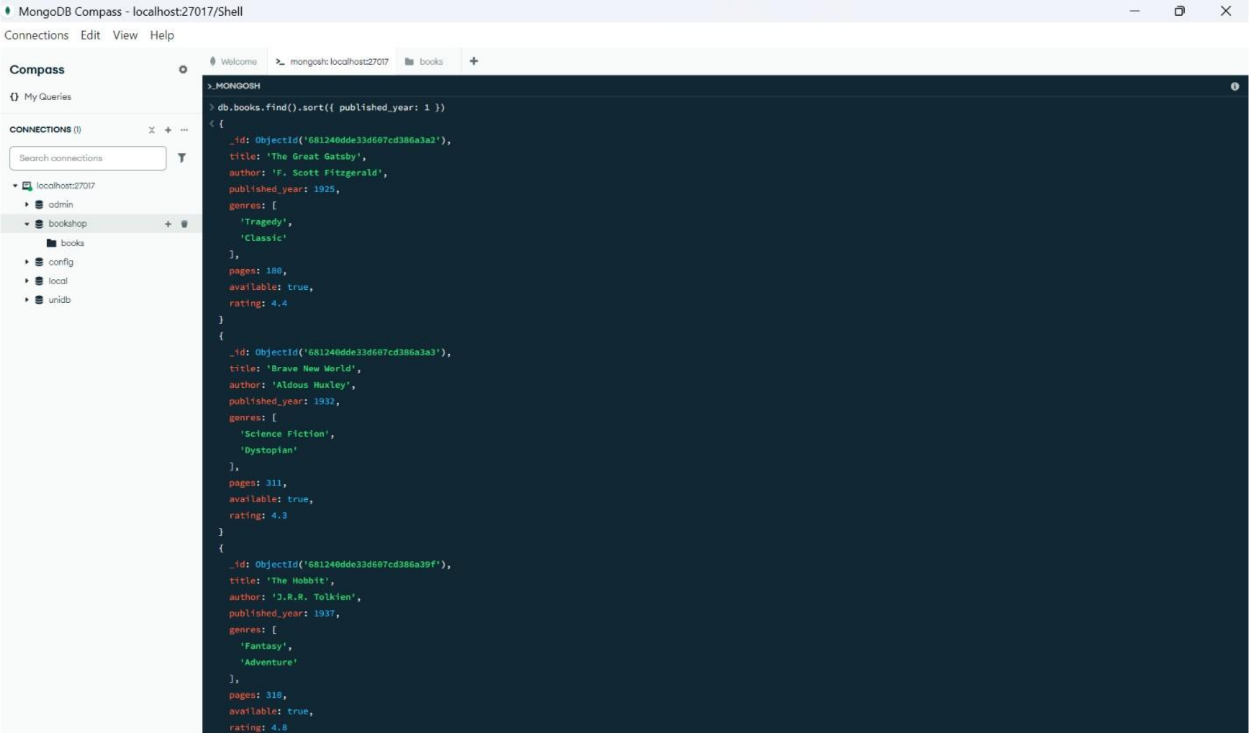
```
> db.books.updateOne({ title: "Brave New World" },{ $inc: { rating: 0.1 } })
< {
    acknowledged: true,
    insertedId: null,
    matchedCount: 1,
    modifiedCount: 1,
    upsertedCount: 0
  }
> db.books.find({"title":"Brave New World"})
< {
    _id: ObjectId('681240dde33d607cd386a3a3'),
    title: 'Brave New World',
    author: 'Aldous Huxley',
    published_year: 1932,
    genres: [
      'Science Fiction',
      'Dystopian'
    ],
    pages: 311,
    available: true,
    rating: 4.3
  }
bookshop>
```

12. Write the query to add a new genre "Classic" to "The Great Gatsby".



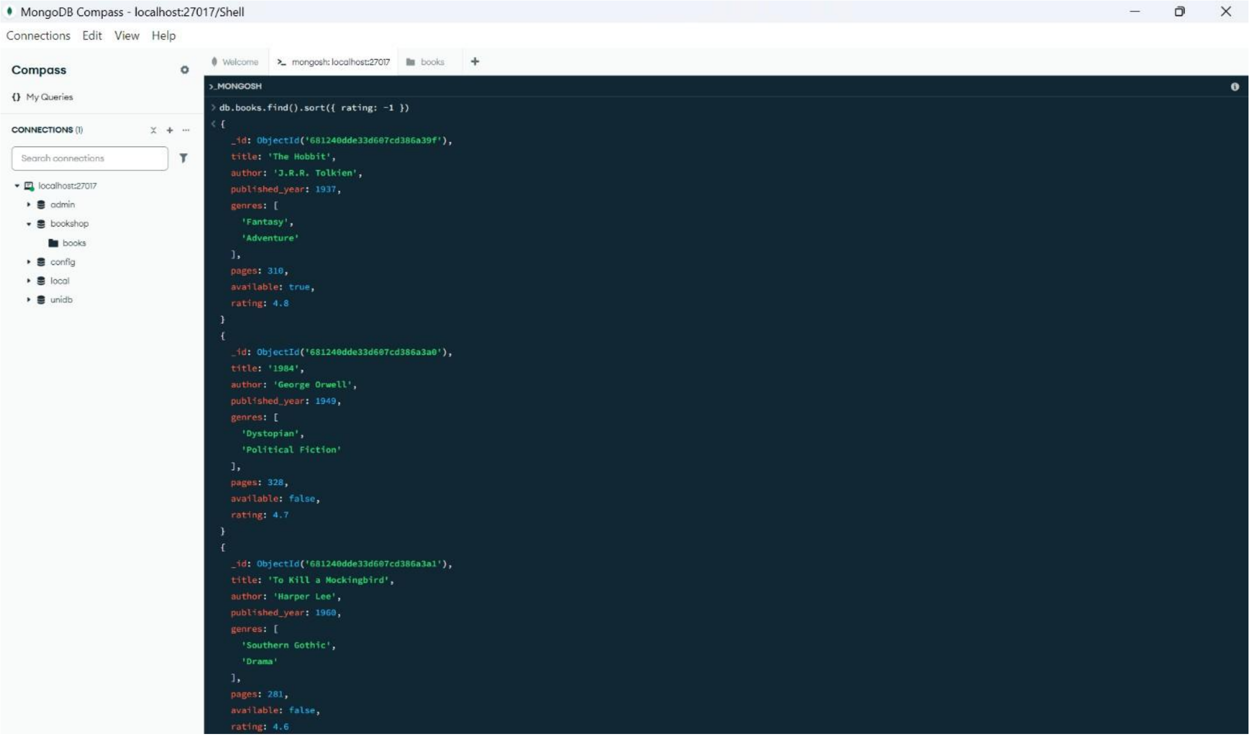
```
> db.books.updateOne({ title: "The Great Gatsby" },{ $addToSet: { genres: "Classic" } })
< {
    acknowledged: true,
    insertedId: null,
    matchedCount: 1,
    modifiedCount: 1,
    upsertedCount: 0
  }
> db.books.find({"title":"The Great Gatsby"})
< {
    _id: ObjectId('681240dde33d607cd386a3a2'),
    title: 'The Great Gatsby',
    author: 'F. Scott Fitzgerald',
    published_year: 1925,
    genres: [
      'Tragedy',
      'Classic'
    ],
    pages: 180,
    available: true,
    rating: 4.4
  }
bookshop>
```

13. Write the query to sort books by published year in ascending order.



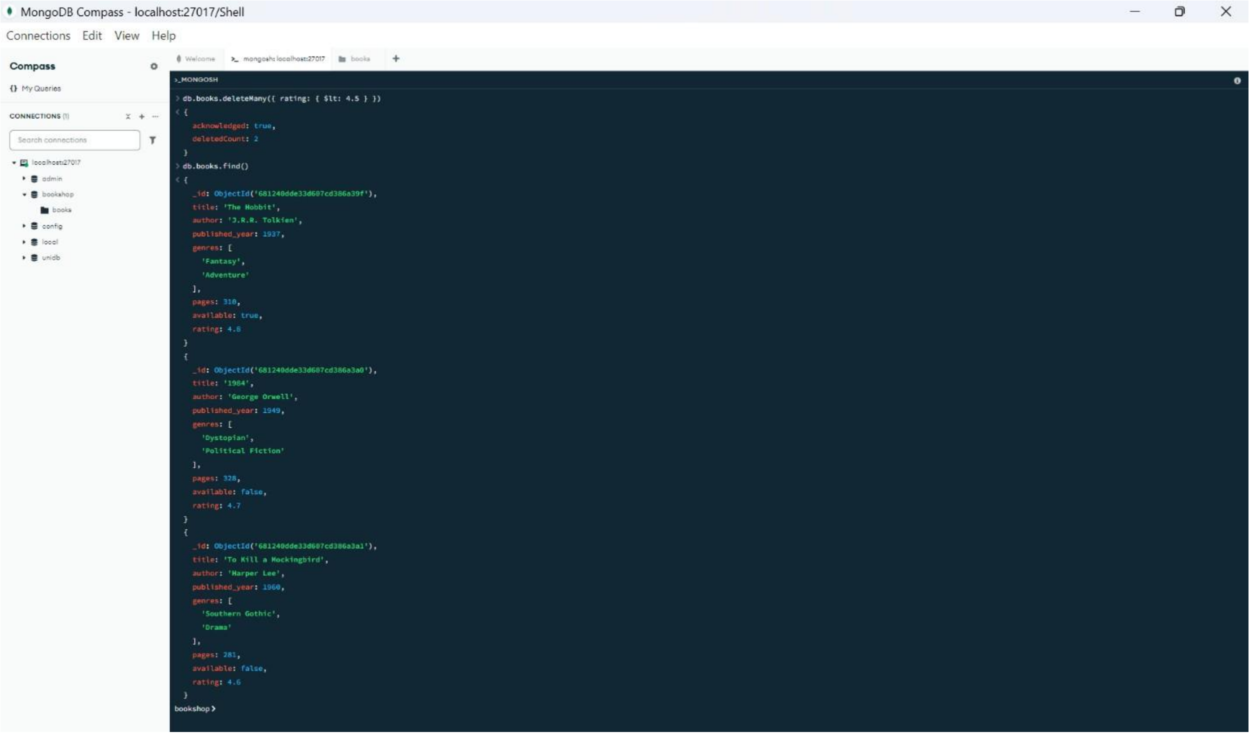
```
> db.books.find().sort({ published_year: 1 })
< {
    _id: ObjectId('681240dde33d607cd386a3a2'),
    title: 'The Great Gatsby',
    author: 'F. Scott Fitzgerald',
    published_year: 1925,
    genres: [
      'Tragedy',
      'Classic'
    ],
    pages: 180,
    available: true,
    rating: 4.4
  }
  {
    _id: ObjectId('681240dde33d607cd386a3a3'),
    title: 'Brave New World',
    author: 'Aldous Huxley',
    published_year: 1932,
    genres: [
      'Science Fiction',
      'Dystopian'
    ],
    pages: 311,
    available: true,
    rating: 4.3
  }
  {
    _id: ObjectId('681240dde33d607cd386a39f'),
    title: 'The Hobbit',
    author: 'J.R.R. Tolkien',
    published_year: 1937,
    genres: [
      'Fantasy',
      'Adventure'
    ],
    pages: 310,
    available: true,
    rating: 4.8
```

14. Write the query to sort books by rating in descending order.



```
> db.books.find().sort({ rating: -1 })
< {
    _id: ObjectId('681240dde33d607cd386a39f'),
    title: 'The Hobbit',
    author: 'J.R.R. Tolkien',
    published_year: 1937,
    genres: [
      'Fantasy',
      'Adventure'
    ],
    pages: 310,
    available: true,
    rating: 4.8
  }
  {
    _id: ObjectId('681240dde33d607cd386a3a0'),
    title: '1984',
    author: 'George Orwell',
    published_year: 1949,
    genres: [
      'Dystopian',
      'Political Fiction'
    ],
    pages: 328,
    available: false,
    rating: 4.7
  }
  {
    _id: ObjectId('681240dde33d607cd386a3a1'),
    title: 'To Kill a Mockingbird',
    author: 'Harper Lee',
    published_year: 1960,
    genres: [
      'Southern Gothic',
      'Drama'
    ],
    pages: 281,
    available: false,
    rating: 4.6
```

15. Write the query to delete all books with a rating lower than 4.5.



```
> db.books.deleteMany({ rating: { $lt: 4.5 } })
< {
    acknowledged: true,
    deletedCount: 2
  }
> db.books.find()
< {
    _id: ObjectId('681240dde33d607cd386a39f'),
    title: 'The Hobbit',
    author: 'J.R.R. Tolkien',
    published_year: 1937,
    genres: [
      'Fantasy',
      'Adventure'
    ],
    pages: 310,
    available: true,
    rating: 4.8
  }
  {
    _id: ObjectId('681240dde33d607cd386a3a0'),
    title: '1984',
    author: 'George Orwell',
    published_year: 1949,
    genres: [
      'Dystopian',
      'Political Fiction'
    ],
    pages: 328,
    available: false,
    rating: 4.7
  }
  {
    _id: ObjectId('681240dde33d607cd386a3a1'),
    title: 'To Kill a Mockingbird',
    author: 'Harper Lee',
    published_year: 1960,
    genres: [
      'Southern Gothic',
      'Drama'
    ],
    pages: 281,
    available: false,
    rating: 4.6
  }
bookshop >
```