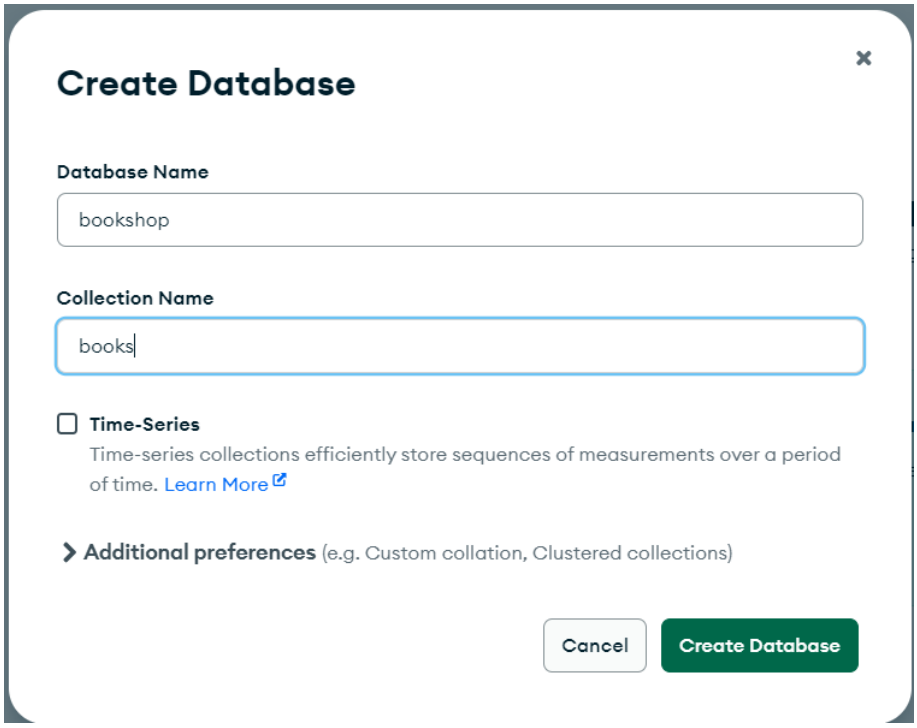
q1.

create a database bookshop

create a collection books



insert the following data

```
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
  }
])
```

>_MONGOSH

```
      "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('681781ffa32252c74496469a'),
      '1': ObjectId('681781ffa32252c74496469b'),
      '2': ObjectId('681781ffa32252c74496469c'),
      '3': ObjectId('681781ffa32252c74496469d'),
      '4': ObjectId('681781ffa32252c74496469e')
    }
  }
```

```
>_MONGOSH
> use bookshop
< switched to db bookshop
>
>  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",
```

Find all books:

db.books.find()

```
>_MONGOSH
> db.books.find()
< {
    _id: ObjectId('681781ffa32252c74496469a'),
    title: 'The Hobbit',
    author: 'J.R.R. Tolkien',
    published_year: 1937,
    genres: [
      'Fantasy',
      'Adventure'
    ],
    pages: 310,
    available: true,
    rating: 4.8
  }
  {
    _id: ObjectId('681781ffa32252c74496469b'),
    title: '1984',
    author: 'George Orwell',
    published_year: 1949,
    genres: [
      'Dystopian',
      'Political Fiction'
    ],
    pages: 328,
    available: true,
    rating: 4.7
  }
  {
    _id: ObjectId('681781ffa32252c74496469c'),
    title: 'To Kill a Mockingbird',
    author: 'Harper Lee',
    published_year: 1960,
    genres: [
      'Southern Gothic',
      'Drama'
```

Find all books published after 1950:

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

```
> db.books.find({published_year:{$gt:1950}})
< {
    _id: ObjectId('681781ffa32252c74496469c'),
    title: 'To Kill a Mockingbird',
    author: 'Harper Lee',
    published_year: 1960,
    genres: [
      'Southern Gothic',
      'Drama'
    ],
    pages: 281,
    available: false,
    rating: 4.6
  }
```

Find the avilable books:

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

```
>_MONGOSH
> db.books.find({available:true})
< {
    _id: ObjectId('681781ffa32252c74496469a'),
    title: 'The Hobbit',
    author: 'J.R.R. Tolkien',
    published_year: 1937,
    genres: [
      'Fantasy',
      'Adventure'
    ],
    pages: 310,
    available: true,
    rating: 4.8
  }
  {
    _id: ObjectId('681781ffa32252c74496469b'),
    title: '1984',
    author: 'George Orwell',
    published_year: 1949,
    genres: [
      'Dystopian',
      'Political Fiction'
    ],
    pages: 328,
    available: true,
    rating: 4.7
  }
  {
    _id: ObjectId('681781ffa32252c74496469d'),
    title: 'The Great Gatsby',
    author: 'F. Scott Fitzgerald',
    published_year: 1925,
    genres: [
      'Tragedy'
```

Find all books that belong to the "Dystopian" genre:

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

```
> db.books.find({'genres':'Dystopian'})
< {
    _id: ObjectId('681781ffa32252c74496469b'),
    title: '1984',
    author: 'George Orwell',
    published_year: 1949,
    genres: [
      'Dystopian',
      'Political Fiction'
    ],
    pages: 328,
    available: true,
    rating: 4.7
  }
  {
    _id: ObjectId('681781ffa32252c74496469e'),
    title: 'Brave New World',
    author: 'Aldous Huxley',
    published_year: 1932,
    genres: [
      'Science Fiction',
      'Dystopian'
    ],
    pages: 311,
    available: true,
    rating: 4.2
  }
```

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}},
  {title: 1, author: 1, _id: 0}
)
```

```
> db.books.find(
    {published_year: {$gt: 1960}, rating: {$gt: 4.0}},
    {title: 1, author: 1, _id: 0}
  )
<
bookshop>
```

Project only title and author fields:

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
  }
```

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
  }
```

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
  }
```

Sort books by published_year ascending:

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

```
> db.books.find().sort({published_year: 1})
< {
    _id: ObjectId('681781ffa32252c74496469d'),
    title: 'The Great Gatsby',
    author: 'F. Scott Fitzgerald',
    published_year: 1925,
    genres: [
      'Tragedy',
      'Classic'
    ],
    pages: 180,
    available: true,
    rating: 4.4
  }
  {
    _id: ObjectId('681781ffa32252c74496469e'),
    title: 'Brave New World',
    author: 'Aldous Huxley',
    published_year: 1932,
    genres: [
      'Science Fiction',
      'Dystopian'
    ],
    pages: 311,
    available: true,
    rating: 4.3
  }
  {
    _id: ObjectId('681781ffa32252c74496469a'),
    title: 'The Hobbit',
    author: 'J.R.R. Tolkien',
    published_year: 1937,
    genres: [
      'Fantasy',
```

Sort books by rating descending:

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

```
> db.books.find().sort({rating: -1})
< {
    _id: ObjectId('681781ffa32252c74496469a'),
    title: 'The Hobbit',
    author: 'J.R.R. Tolkien',
    published_year: 1937,
    genres: [
      'Fantasy',
      'Adventure'
    ],
    pages: 310,
    available: true,
    rating: 4.8
  }
  {
    _id: ObjectId('681781ffa32252c74496469b'),
    title: '1984',
    author: 'George Orwell',
    published_year: 1949,
    genres: [
      'Dystopian',
      'Political Fiction'
    ],
    pages: 328,
    available: false,
    rating: 4.7
  }
  {
    _id: ObjectId('681781ffa32252c74496469c'),
    title: 'To Kill a Mockingbird',
    author: 'Harper Lee',
    published_year: 1960,
    genres: [
      'Southern Gothic',
      'Drama'
```

```
>_MONGOSH
    genres: [
      'Southern Gothic',
      'Drama'
    ],
    pages: 281,
    available: false,
    rating: 4.6
  }
  {
    _id: ObjectId('681781ffa32252c74496469d'),
    title: 'The Great Gatsby',
    author: 'F. Scott Fitzgerald',
    published_year: 1925,
    genres: [
      'Tragedy',
      'Classic'
    ],
    pages: 180,
    available: true,
    rating: 4.4
  }
  {
    _id: ObjectId('681781ffa32252c74496469e'),
    title: 'Brave New World',
    author: 'Aldous Huxley',
    published_year: 1932,
    genres: [
      'Science Fiction',
      'Dystopian'
    ],
    pages: 311,
    available: true,
    rating: 4.3
  }
```

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
  }
```