Assignment

1. Making a booksdb and collection named books.

```
mongosh mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000

test> use booksdb;
switched to db booksdb
booksdb> db.books.findOne()
{
  _id: 1,
  title: 'Unlocking Android',
  isbn: '1933988673',
  pageCount: 416,
  publishedDate: ISODate("2009-04-01T07:00:00.000Z"),
  thumbnailUrl: 'https://s3.amazonaws.com/AKIAJC5RLADLUMVRPFDQ.book-thumb-images/ableson.jpg',
  shortDescription: "Unlocking Android: A Developer's Guide provides concise, hands-on instruction for the Android operating system and development tools. This book teaches important architectural concepts in a straightforward writing style and builds on this with practical and useful examples throughout.",
  longDescription: "Android is an open source mobile phone platform based on the Linux operating system and developed by the Open Handset Alliance, a consortium of over 30 hardware, software and telecom companies that focus on open standards for mobile devices. Led by search giant, Google, Android is designed to deliver a better and more open and cost effective mobile experience.    Unlocking Android: A Developer's Guide provides concise, hands-on instruction for the Android operating system and development tools. This book teaches important architectural concepts in a straightforward writing style and builds on this with practical and useful examples throughout. Based on his mobile development experience and his deep knowledge of the arcane Android technical documentation, the author conveys the know-how you need to develop practical applications that build upon or replace any of Androids features, however small.    Unlocking Android: A Developer's Guide prepares the reader to embrace the platform in easy-to-understand language and builds on this foundation with re-usable Java code examples. It is ideal for corporate and hobbyists alike who have an interest, or a mandate, to deliver software functionality for cell phones.    WHAT'S INSIDE:      * Android's place in the market      * Using the Eclipse environment for Android development      * The Intents - how and why they are used      * Application classes:         o Activity          o Service          o IntentReceiver      * User interface design      * Using the ContentProvider to manage data      * Persisting data with the SQLite database      * Networking examples      * Telephony applications      * Notification methods      * OpenGL, animation & multimedia      * Sample Applications  ",
  status: 'PUBLISH',
  authors: [ 'W. Frank Ableson', 'Charlie Collins', 'Robi Sen' ],
  categories: [ 'Open Source', 'Mobile' ]
}
booksdb>
```

```
sdb> db.books.updateOne({"_id":21},{$set:{"pageCount":544}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
booksdb> db.books({"_id":21})
TypeError: db.books is not a function
booksdb> db.books.find({"_id":21})
[
  {
    _id: 21,
    title: 'MongoDB: The Definitive Guide',
    isbn: '9781491954461',
    publishedDate: ISODate("2009-12-01T07:00:00.000Z"),
    authors: [ 'Kristina Chodorow' ],
    categories: [ 'Next Generation Databases' ],
    publisher: "O'Reilly Media, Inc.",
    pageCount: 544
  }
]
```

2

```
booksdb> db.books.updateOne( {"_id": 21 }, { $push: { "authors": "Michael Dirolf" } }) ;
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
booksdb> db.books.find({"_id":21})
[
  {
    _id: 21,
    title: 'MongoDB: The Definitive Guide',
    isbn: '9781491954461',
    publishedDate: ISODate("2009-12-01T07:00:00.000Z"),
    authors: [ 'Kristina Chodorow', 'Michael Dirolf' ],
    categories: [ 'Next Generation Databases' ],
    publisher: "O'Reilly Media, Inc.",
    pageCount: 544
  }
]
```

3

```
booksdb> db.books.updateOne( {"_id": 21 }, { $addToSet: { "categories": "NoSQL databases" } }
) ;
booksdb> db.books.find({"_id":21})
[
  {
    _id: 21,
    title: 'MongoDB: The Definitive Guide',
    isbn: '9781491954461',
    publishedDate:ISODate("2009-12-01T07:00:00.000Z"),
    authors: [ 'Kristina Chodorow', 'Michael Dirolf' ,,
    categories: [ 'Next Generation Databases', 'NoSQL databases' ],
    publisher: "O'Reilly Media, Inc.",
    pageCount: 544
  }
]
booksdb>
```

4

```
booksdb> db.books.updateOne({"_id":21},{$set:{"pageCount":500}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
booksdb> db.books.find({"_id":21})
[
  {
    _id: 21,
    title: 'MongoDB: The Definitive Guide',
    isbn: '9781491954461',
    publishedDate: ISODate("2009-12-01T07:00:00.000Z"),
    authors: [ 'Kristina Chodorow', 'Michael Dirolf' ,,
    categories: [ 'Next Generation Databases', 'NoSQL databases' ],
    publisher: "O'Reilly Media, Inc.",
    pageCount: 500
  }
]
booksdb>
```

5

```
booksdb> db.books.update({"_id":21},[{$set:{"title": {$concat:["$title"," Third edition."]}}}
],{upsert:true})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
booksdb> db.books.find({"_id":21})
[
  {
    _id: 21,
    title: 'MongoDB: The Definitive Guide Third edition.',
    isbn: '9781491954461',
    publishedDate: ISODate("2009-12-01T07:00:00.000Z"),
    authors: [ 'Kristina Chodorow', 'Michael Dirolf' ],
    categories: [ 'Next Generation Databases', 'NoSQL databases' ],
    publisher: "O'Reilly Media, Inc.",
    pageCount: 500
  }
]
booksdb>
```

6

```
booksdb> db.books.updateOne( {"_id": 21 }, { $push: { "categories": {$each:["mongodb", "advan
ced databases"]} } }) ;
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
booksdb> db.books.find({"_id":21})
[
  {
    _id: 21,
    title: 'MongoDB: The Definitive Guide Third edition.',
    isbn: '9781491954461',
    publishedDate: ISODate("2009-12-01T07:00:00.000Z"),
    authors: [ 'Kristina Chodorow', 'Michael Dirolf' ],
    categories: [
      'Next Generation Databases',
      'NoSQL databases',
      'mongodb',
      'advanced databases'
    ],
    publisher: "O'Reilly Media, Inc.",
    pageCount: 500
  }
]
booksdb>
```

7

```
booksdb> db.books.updateOne( {"_id": 21 }, { $pop: { "categories": -1 } }) ;
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
booksdb> db.books.find({"_id":21})
[
  {
    _id: 21,
    title: 'MongoDB: The Definitive Guide Third edition.',
    isbn: '9781491954461',
    publishedDate: ISODate("2009-12-01T07:00:00.000Z"),
    authors: [ 'Kristina Chodorow', 'Michael Dirolf' ],
    categories: [ 'NoSQL databases', 'mongodb', 'advanced databases' ],
    publisher: "O'Reilly Media, Inc.",
    pageCount: 500
  }
]
booksdb>
```

8

```
booksdb> db.books.updateOne( {"_id": 21 }, { $pull: { "categories": "advanced databases" }})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
booksdb> db.books.find({"_id":21})
[
  {
    _id: 21,
    title: 'MongoDB: The Definitive Guide Third edition.',
    isbn: '9781491954461',
    publishedDate: ISODate("2009-12-01T07:00:00.000Z"),
    authors: [ 'Kristina Chodorow', 'Michael Dirolf' ],
    categories: [ 'NoSQL databases', 'mongodb' ],
    publisher: "O'Reilly Media, Inc.",
    pageCount: 500
  }
]
booksdb>
```

9

```
booksdb> db.books.updateOne( {"_id": 21 }, [{ $set:{"pubyear":{$year:"$publishedDate"}} }])
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
booksdb> db.books.find({"_id":21})
[
  {
    _id: 21,
    title: 'MongoDB: The Definitive Guide Third edition.',
    isbn: '9781491954461',
    publishedDate: ISODate("2009-12-01T07:00:00.000Z"),
    authors: [ 'Kristina Chodorow', 'Michael Dirolf' ],
    categories: [ 'NoSQL databases', 'mongodb' ],
    publisher: "O'Reilly Media, Inc.",
    pageCount: 500,
    pubyear: 2009
  }
]
booksdb>
```

10

```
booksdb> db.books.updateMany( {}, [{ $set:{"pubyear":{$year:"$publishedDate"}} }])
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 19,
  modifiedCount: 18,
  upsertedCount: 0
}
```

11

```
booksdb> db.books.updateMany(
...    {},
...    { $unset: {'longDescription':1}},
...    false, true
... )
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 19,
  modifiedCount: 17,
  upsertedCount: 0
}
```

12

```
booksdb> try{db.books.bulkWrite([{ updateOne : {"filter" : {"_id":19},"update" : { $set : { "commetns" : [{"Name":"Joe","Content":"nice book. Practice questions are helpful","r
ating": 5},{"Name": "David","Content": "excellent book. Contains illustratives","rating": 4}] } }} },{ updateOne : {"filter" : {"_id":21},"update" : { $set : { "commetns" : [{"
Name": "Joe","Content": "nice book.","rating": 4},{"Name": "Sam","Content": "excellent book. Contains illustratives","rating": 5}] } }} }]}}catch(e){print(e);}
{
  acknowledged: true,
  insertedCount: 0,
  insertedIds: {},
  matchedCount: 2,
  modifiedCount: 2,
  deletedCount: 0,
  upsertedCount: 0,
  upsertedIds: {}
}
booksdb> db.books.find({"_id":19})
[
  {
    _id: 19,
    title: 'Jaguar Development with PowerBuilder 7',
    isbn: '1884777864',
    pageCount: 550,
    publishedDate: ISODate("1999-08-01T07:00:00.000Z"),
    thumbnailUrl: 'https://s3.amazonaws.com/AKIAJC5RLADLUMVRPFDQ.book-thumb-images/barlotta2.jpg',
    shortDescription: 'Jaguar Development with PowerBuilder 7 is the definitive guide to distributed application development with PowerBuilder. It is the only book dedicated to
preparing PowerBuilder developers for Jaguar applications and has been approved by Sybase engineers and product specialists who build the tools described in the book.',
    status: 'PUBLISH',
    authors: [ 'Michael Barlotta' ],
    categories: [ 'PowerBuilder', 'Client-Server' ],
    pubyear: 1999,
    commetns: [
      {
        Name: 'Joe',
        Content: 'nice book. Practice questions are helpful',
        rating: 5
      },
      {
        Name: 'David',
        Content: 'excellent book. Contains illustratives',
        rating: 4
      }
    ]
  }
]
booksdb>
```

Part 2

13

```
booksdb> db.books.find().forEach( function(d){count++; });

booksdb> count
19
booksdb>
```

14

```
booksdb> db.books.find({"pageCount":{$gt:100}})
[
  {
    _id: 1,
    title: 'Unlocking Android',
    isbn: '1933988673',
    pageCount: 416,
    publishedDate: ISODate("2009-04-01T07:00:00.000Z"),
    thumbnailUrl: 'https://s3.amazonaws.com/AKIAJC5RLADLUMVRPFDQ.book-thumb-images/ableson.jpg',
    shortDescription: "Unlocking Android: A Developer's Guide provides concise, hands-on instruction for the Android operating syste
mportant architectural concepts in a straightforward writing style and builds on this with practical and useful examples throughout.
    status: 'PUBLISH',
    authors: [ 'W. Frank Ableson', 'Charlie Collins', 'Robi Sen' ],
    categories: [ 'Open Source', 'Mobile' ],
    pubyear: 2009
  },
  {
    _id: 2,
    title: 'Android in Action, Second Edition',
    isbn: '1935182722',
    pageCount: 592,
    publishedDate: ISODate("2011-01-14T08:00:00.000Z"),
    thumbnailUrl: 'https://s3.amazonaws.com/AKIAJC5RLADLUMVRPFDQ.book-thumb-images/ableson2.jpg',
    shortDescription: `Android in Action, Second Edition is a comprehensive tutorial for Android developers. Taking you far beyond "
```

15

```
booksdb> db.books.find({"categories":{$in:["mongodb"]}})
[
  {
    _id: 21,
    title: 'MongoDB: The Definitive Guide Third edition.',
    isbn: '9781491954461',
    publishedDate: ISODate("2009-12-01T07:00:00.000Z"),
    authors: [ 'Kristina Chodorow', 'Michael Dirolf' ],
    categories: [ 'NoSQL databases', 'mongodb' ],
    publisher: "O'Reilly Media, Inc.",
    pageCount: 500,
    pubyear: 2009,
    commetns: [
      { Name: 'Joe', Content: 'nice book.', rating: 4 },
      {
        Name: 'Sam',
        Content: 'excellent book. Contains illustratives',
        rating: 5
      }
    ]
  }
]
booksdb>
```

16

```
booksdb> db.books.find({"pubyear":2019})

booksdb>
```

17

```
booksdb> db.books.find({"publishedDate":{$gt:ISODate("2019-01-01")}})

booksdb>
```

18

```
booksdb> count=0
0
booksdb> db.books.find({"authors":{$size:3}}).forEach( function(d){count++; });

booksdb> count
2
booksdb>
```

19

```
booksdb> db.books.find({"title":{$regex:"Android"}});
[
  {
    _id: 1,
    title: 'Unlocking Android',
    isbn: '1933988673',
    pageCount: 416,
    publishedDate: ISODate("2009-04-01T07:00:00.000Z"),
    thumbnailUrl: 'https://s3.amazonaws.com/AKIAJC5RLADLUMVRPFDQ.book-thumb-images/ableson.jpg',
    shortDescription: "Unlocking Android: A Developer's Guide provides concise, hands-on instruction for the Android operating system and development tools. This b
important architectural concepts in a straightforward writing style and builds on this with practical and useful examples throughout.",
    status: 'PUBLISH',
    authors: [ 'W. Frank Ableson', 'Charlie Collins', 'Robi Sen' ],
    categories: [ 'Open Source', 'Mobile' ],
    pubyear: 2009
  },
  {
    _id: 2,
    title: 'Android in Action, Second Edition',
    isbn: '1935182722',
    pageCount: 592,
    publishedDate: ISODate("2011-01-14T08:00:00.000Z"),
    thumbnailUrl: 'https://s3.amazonaws.com/AKIAJC5RLADLUMVRPFDQ.book-thumb-images/ableson2.jpg',
    shortDescription: `Android in Action, Second Edition is a comprehensive tutorial for Android developers. Taking you far beyond "Hello Android," this fast-paced
u in the driver's seat as you learn important architectural concepts and implementation strategies. You'll master the SDK, build WebKit apps using HTML 5, and even
end or replace Android's built-in features by building useful and intriguing examples. `,
    status: 'PUBLISH',
    authors: [ 'W. Frank Ableson', 'Robi Sen' ],
    categories: [ 'Java' ],
    pubyear: 2011
  }
]
booksdb>
```

20

```
booksdb> db.books.find({"shortDescription":{$exists:false}});
[
  {
    _id: 3,
    title: 'Specification by Example',
    isbn: '1617290084',
    pageCount: 0,
    publishedDate: ISODate("2011-06-03T07:00:00.000Z"),
    thumbnailUrl: 'https://s3.amazonaws.com/AKIAJC5RLADLUMVRPFDQ.book-thumb-images/adzic.jpg',
    status: 'PUBLISH',
    authors: [ 'Gojko Adzic' ],
    categories: [ 'Software Engineering' ],
    pubyear: 2011
  },
  {
    _id: 4,
    title: 'Flex 3 in Action',
    isbn: '1933988746',
    pageCount: 576,
    publishedDate: ISODate("2009-02-02T08:00:00.000Z"),
    thumbnailUrl: 'https://s3.amazonaws.com/AKIAJC5RLADLUMVRPFDQ.book-thumb-images/ahmed.jpg',
    status: 'PUBLISH',
    authors: [ 'Tariq Ahmed with Jon Hirschi', 'Faisal Abid' ],
    categories: [ 'Internet' ],
```

21

```
booksdb> db.books.find({"comments.Name":"David"},{"_id":1,"title":1,"isbn":1, "comments.Name":1})
[
  {
    _id: 19,
    title: 'Jaguar Development with PowerBuilder 7',
    isbn: '1884777864',
    comments: [ { Name: 'Joe' }, { Name: 'David' } ]
  }
]
booksdb>
```

22

```
booksdb> db.books.find({"comments.rating":{$lte:3}})

booksdb>
```

23

```
booksdb> db.books.find({"comments.Name":"David","comments.rating":{$eq:3}})

booksdb>
```

24

```
booksdb> db.books.find({"comments":{$size:2}})
[
  {
    _id: 19,
    title: 'Jaguar Development with PowerBuilder 7',
    isbn: '1884777864',
    pageCount: 550,
    publishedDate: ISODate("1999-08-01T07:00:00.000Z"),
    thumbnailUrl: 'https://s3.amazonaws.com/AKIAJC5RLADLUMVRPFDQ.book-thumb-imag
    shortDescription: 'Jaguar Development with PowerBuilder 7 is the definitive
```