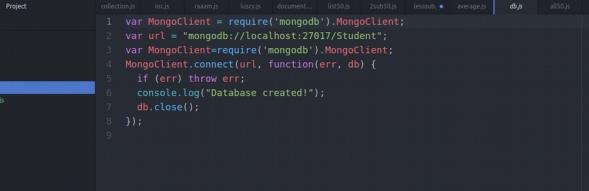


Create a Database called student

```
Terminal @ ukitstul2@ukipc12:~/Desktop/nodejs+mongodb/node+student
uikitstul2@ukipc12:~/Desktop/nodejs+mongodb/node+student$ node db.js
(node:4096) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use the new Server Discovery and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.
Database created!
uikitstul2@ukipc12:~/Desktop/nodejs+mongodb/node+student$
```



The screenshot shows the Atom code editor with the following details:

- Project Path:** Project — ~/Desktop/nodejs/mongodb/node/student — Atom
- File:** db.js
- Code Content:**

```
1 var MongoClient = require('mongodb').MongoClient;
2 var url = "mongodb://localhost:27017/Student";
3 var MongoClient=require('mongodb').MongoClient;
4 MongoClient.connect(url, function(err, db) {
5   if (err) throw err;
6   console.log("Database created!");
7   db.close();
8 });
9
```

Create a collection called studentmarks

```
Terminal wkitu12@uk1pc12:~/Desktop/nodejs+mongodb/node+student
Desktop/nodejs+mongodb/node+student$ node db.js
(node:4996) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use the new Server Discovery and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor. 6 var dbo = db('Student');
Desktop/nodejs+mongodb/node+student$ node db.js
(node:4614) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use the new Server Discovery and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.
Collection created!
wkitu12@uk1pc12:~/Desktop/nodejs+mongodb/node+student$ █
```



Atom

collection.js - /Desktop/nodejs/mongodb/node-student - Atom

Project

node-student

- collection.js
- db.js

collection.js

```
var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://localhost:27017/";

MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var studentCollection = db.collection('Student');
  studentCollection.createCollection("studentmarks", function(err, res) {
    if (err) throw err;
    console.log("Collection created!");
    db.close();
  });
});
```

dbs.js

collectioncreate.js

dbCreate.js

Create the documents listed in above table.

4) Increase the maths marks of Mala by 6 marks.



A screenshot of the Atom code editor showing a file named inc.js. The code uses the MongoClient from the mongoose library to update documents in a collection named "studentmarks". It includes error handling and logging.

```
var MongoClient = require('mongoose').MongoClient;
var url = "mongodb://127.0.0.1:27017/";
MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("Student");
  var query = { name: "malu" };
  var newvalues = { $inc: { maths_marks: 6 } };
  dbo.collection("studentmarks").updateMany(query, newvalues, function(err, res) {
    if (err) throw err;
    console.log(`${res.n} document was updated`);
    db.close();
  });
});
```

5) List the names of students who got more than 50 marks in Maths Subject.

```
Terminal 10: uki12@uki12: ~/Desktop/nodejs+mongodb$ node student
[1] 10000+ uki12@uki12: ~/Desktop/nodejs+mongodb$ node student
1 document was updated
[1] 10000+ uki12@uki12: ~/Desktop/nodejs+mongodb$ node student
(node:8626) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use the new Server Discover and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.
1 document was updated
[1] 10000+ uki12@uki12: ~/Desktop/nodejs+mongodb$ node student
(node:8626) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use the new Server Discover and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.
1 document was updated
[1] 10000+ uki12@uki12: ~/Desktop/nodejs+mongodb$ node student
(node:8779) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use the new Server Discover and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.
[ { name: 'Anita' },
  { name: 'Shayu' },
  { name: 'Lucky' },
  { name: 'Gyan' } ]
uki12@uki12: ~/Desktop/nodejs+mongodb$ node student$
```



The screenshot shows the Atom code editor with a project titled "nodejs-mongodb/nodestudent". The file "index.js" is open, displaying a Node.js script that connects to a MongoDB database and finds documents where the "maths_marks" field is greater than or equal to 50. The code uses ES6 syntax and imports MongoClient from the mongodb package.

```
var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://localhost:27017/";

MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var collection = db.collection("Student");
  collection.find({ "maths_marks": { $gt: 50 } }, { projection: { _id: 0, name: 1 } })
    .toArray(function(err, result) {
      if (err) throw err;
      console.log(result);
      db.close();
    });
});
```

6) Add a new column(field) for Average for all students.

The screenshot shows the Atom code editor with the following details:

- File Path:** `average.js` (highlighted in red)
- Project:** node-student (highlighted in blue)
- Code Content:**

```
var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://localhost:27017/";

MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var collection = db.collection('student');
  collection.aggregate([{$addFields: {"average": ""}}]).toArray(function(err, result) {
    if (err) throw err;
    console.log(result);
  });
  db.close();
});
```
- Toolbars and Status Bar:** The top bar shows tabs like 'recent', 'source', 'document', 'list', 'diff', 'diffstage', 'linter', and 'atom'. The status bar at the bottom right shows 'UTT-B' and '1 update'.

```
Terminal 100% 11:01 o'clock UKPC12
ubuntu12@ukpc12:~$ /Desktop/nodejs+mongodb/node+student
ubuntu12@ukpc12:~$ /Desktop/nodejs+mongodb + wuk12@ukpc12:~$ /Desktop/nodejs+mong... + wuk12@ukpc12:~$ /Desktop/nodejs+mong...
{
    name: 'John',
    maths_marks: 32,
    science_marks: 84,
    english_marks: 73,
    average: '',
    { _id: 5e324a8844808b0142e115101,
        name: 'John',
        maths_marks: 66,
        science_marks: 88,
        english_marks: 90,
        average: '',
        { _id: 5e324a8844808b0142e115102,
            name: 'John',
            maths_marks: 66,
            science_marks: 75,
            english_marks: 75,
            average: '',
            { _id: 5e324a8844808b0142e115103,
                name: 'Gva',
                maths_marks: 71,
                science_marks: 56,
                english_marks: 75,
                average: '',
                { _id: 5e324a8844808b0142e115104,
                    name: 'Raam',
                    maths_marks: 41,
                    english_marks: 65,
                    average: '' } } } } }

Note : Make sure all your answer screenshots are pretty.

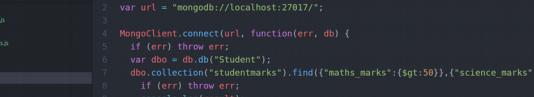
wuk12@ukpc12:~$ /Desktop/nodejs+mongodb/node+student$
```

Update Marks Science=75 to Lucky

```
Terminal
ukistulu2@ukip12:~/Desktop/nodejs/mongodb/node+student$ node raam.js
(node:8170) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use the new Server Discover and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.
1 document was updated
ukistulu2@ukip12:~/Desktop/nodejs/mongodb/node+students$ node lucsy.js
(node:8511) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use the new Server Discover and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.
1 document was updated
ukistulu2@ukip12:~/Desktop/nodejs/mongodb/node+students$ node lucsy.js
(node:8511) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use the new Server Discover and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.
1 document was updated
ukistulu2@ukip12:~/Desktop/nodejs/mongodb/node+students$
```

List the names who got more than 50 marks in all subjects.

```
① kistiu@kicp12:~/Desktop/nodejs+mongodb/node+student$ mongo
MongoDB shell version v4.4.1
connecting to: mongodb://127.0.0.1:27017/
MongoDB server version: 4.4.1
Welcome to the MongoDB shell.
For usage details type "help".
For built-in documentation type "docs".
Type "quit()" to exit.
> db.student.find().sort({name:1}).toArray()
[{"name": "Arun", "maths": 85, "science marks": 85, "english marks": 75}, {"name": "Rahul", "maths": 80, "science marks": 80, "english marks": 85}, {"name": "Nikhil", "maths": 88, "science marks": 76, "english marks": 65}, {"name": "Kishan", "maths": 66, "science marks": 88, "english marks": 90}, {"name": "Raj", "maths": 71, "science marks": 56, "english marks": 75}]
kistiu@kicp12:~/Desktop/nodejs+mongodb/node+student$
```



The screenshot shows the Atom code editor with the file `at50.js` open. The code is a Node.js script for connecting to a MongoDB database and querying student marks. The code includes imports for `collection.js`, `inc.js`, `list.js`, `reason.js`, and `lucky.js`. It uses the `MongoClient` from the `mongoose` package to connect to a local MongoDB instance at port 27017. It then finds all documents in the `studentmarks` collection where `maths_marks` is greater than or equal to 50, and prints the results to the console.

```
var MongoClient = require('mongoose').MongoClient;
var url = "mongodb://localhost:27017/";

MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("Student");
  dbo.collection("studentmarks").find({ "maths_marks": {$gt: 50} }, { "science_marks": {$gt: 50} }, { "_id": 0 })
    .toArray(function(err, result) {
      if (err) throw err;
      console.log(result);
    });
  db.close();
});
```

9) List the names who got less than 50 marks in Maths subject and more than 50 marks in English

The screenshot shows the Atom code editor with a file named `zsub50.js` open. The code is a Node.js script using the `mongoose` library to interact with a MongoDB database. It defines a connection URL, connects to the database, finds documents where `maths_marks` is between 50 and 50, and logs the results. The code editor interface includes tabs for other files like `collection.js`, `int.js`, etc., and a status bar at the bottom.

```
var MongoClient = require('mongoose').MongoClient;
var url = "mongodb://localhost:27017";
MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("Student");
  dbo.collection("studentmarks").find({$and:[{"maths_marks":{$lt:50}}, {"english_marks":{$gt:50}}]}).toArray(function(err, result) {
    if (err) throw err;
    console.log(result);
    db.close();
  });
});
```

11) Remove Science column/field for Raam

```
Terminal
$ ukit12@ukit12:~/Desktop/nodejs$ mongod --nodestudent
uikit12@ukit12:~/Desktop/nodejs$ node student
uikit12@ukit12:~/Desktop/nodejs$ mongod --nodestudent
uikit12@ukit12:~/Desktop/nodejs$ node student

ReferenceError: query is not defined
    at /home/ukit12/Desktop/nodejs/mongod/node/student/list50.js:9:39
  at executeAllCallback (/home/ukit12/Desktop/nodejs/mongod/lib/operations/executer_operations.js:74:13)
  at /home/ukit12/Desktop/node_modules/mongodb/lib/operations/connect.js:218:7
  at connectAllCallback (/home/ukit12/Desktop/node_modules/mongodb/lib/operations/conne
ct.js:375:5)
  at server.connect (/home/ukit12/Desktop/node_modules/mongodb/lib/operations/connect
.js:468:5)
  at server.connectHandler (/home/ukit12/Desktop/node_modules/mongodb/lib/topologies
/server.js:291:9)
  at Object._connectWrapper (events.js:273:13)
  at Server.emit (events.js:182:13)
  at Pool. (/home/ukit12/Desktop/node_modules/mongodb/lib/core/topologies
/server.js:384:12)
  at Pool.Pool._emitEvent (events.js:182:13)
  at Pool.Pool.add (events.js:182:13)
  at uikit12@ukit12:~/Desktop/nodejs$ mongod --nodestudent node raam.js
(node:8170) DeprecationWarning: current Server Discovery and Monitoring engine is
deprecated, and will be removed in a future version. To use the new Server Dis
covery and Monitoring engine, pass option { useUnifiedTopology: true } to the Mon
goclient constructor.
  document was updated
uikit12@ukit12:~/Desktop/nodejs$ mongod --nodestudent$
```



A screenshot of the Atom code editor. The title bar shows 'Atom' and the path '/Users/raam/Downloads/mongodb/node/student'. The left sidebar lists files: 'nodestudent', 'index.js', 'dbjs', 'documents.js', 'readme', 'listobj', and 'raam.js'. The main editor area contains the following JavaScript code:

```
var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://127.0.0.1:27017/";

MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("Student");
  var myquery = { name: "Sunset" };
  var newvalues = { $unset: { science: 88 } };

  dbo.collection("studentmarks").updateMany(myquery, newvalues, function(err, res) {
    if (err) throw err;
    console.log("1 document was updated");
    db.close();
  });
});
```

List the names who got less than 40 in both Maths and Science.

```
Terminal 100% 2:51 14/05/2024
uk1stut12@uk1pc12:~/Desktop/nodejs+mongodb$ node+student
[ { _id: 5e32a4844808b0142e150fc, MongoClient: require('mongodb').MongoClient,
  name: 'Kumaran', constructor: [Function: MongoClient],
  maths_marks: 45, MongoClient.connect.err, science_marks: 53, db: undefined,
  english_marks: 72, _id: 5e32a4844808b0142e15101, _id: 5e32a4844808b0142e15101,
  name: 'Kumaran', _id: 5e32a4844808b0142e15101, _id: 5e32a4844808b0142e15101,
  maths_marks: 32, _id: 5e32a4844808b0142e15101, _id: 5e32a4844808b0142e15101,
  science_marks: 84, _id: 5e32a4844808b0142e15101, _id: 5e32a4844808b0142e15101,
  english_marks: 73, _id: 5e32a4844808b0142e15101, _id: 5e32a4844808b0142e15101,
  name: 'Kumaran', _id: 5e32a4844808b0142e15101, _id: 5e32a4844808b0142e15101,
  maths_marks: 41, _id: 5e32a4844808b0142e15101, _id: 5e32a4844808b0142e15101,
  english_marks: 65 } ]
uk1stut12@uk1pc12:~/Desktop/nodejs+mongodb$ node less
less.js
less.less
uk1stut12@uk1pc12:~/Desktop/nodejs+mongodb/node+student$ node less.js
(node:11884) DeprecationWarning: current Server Discovery and Monitoring engine
is deprecated, and will be removed in a future version. To use the new Server Di-
scovery and Monitoring engine, pass option { useUnifiedTopology: true } to the Mo-
ngoClient constructor.
[]
uk1stut12@uk1pc12:~/Desktop/nodejs+mongodb$ node+student$
```

The screenshot shows the Atom code editor with a file named `less.js` open. The code is a MongoDB client script using the `Mongoose` library to find student documents where the sum of `maths` and `science` marks is less than or equal to 40. The code includes imports for `mongoose`, `url`, and `db`, and defines a function to execute the query.

```
var MongoClient = require('mongoose').MongoClient;
var url = "mongodb://localhost:28170";
MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("student");
  dbo.collection("studentmarks").find({$and:[{"maths_marks":{$lt:40}}, {"science_marks":{$lt:40}}]}).toArray(function(err, result) {
    if (err) throw err;
    console.log(result);
    db.close();
  });
});
```

Update John's Math mark as 87 and English mark as 23, if john not available upsert.

```
Terminal 100% 2:56 PM UKI

[10:06:48] uki121@uki1pc12:~/Desktop/nodejs+mongodb/node+student
uki121@uki1pc12:~/Desktop/nodejs+mongodb/node+student$ node less.js
{
  _id: 5e324ab8800b0142e115101,
  name: 'Kumaran',
  var url = "mongodb://127.0.0.1:27017/";
  maths_marks: 32,
  science_marks: 84,
  english_marks: 73,
  function(err, db) {
    if (err) throw err;
    db.collection('students').insertOne({
      name: 'John',
      maths_marks: 41,
      english_marks: 65
    }, function(err, res) {
      if (err) throw err;
      console.log(res.ops);
      db.close();
    });
  }
}

[10:06:54] uki121@uki1pc12:~/Desktop/nodejs+mongodb/node+student$ node less.js
{
  _id: 5e324ab8800b0142e115104,
  name: 'Kumaran',
  var url = "mongodb://127.0.0.1:27017/";
  maths_marks: 32,
  science_marks: 84,
  english_marks: 73,
  function(err, db) {
    if (err) throw err;
    db.collection('students').insertOne({
      name: 'John',
      maths_marks: 41,
      english_marks: 65
    }, function(err, res) {
      if (err) throw err;
      console.log(res.ops);
      db.close();
    });
  }
}

[10:07:00] uki121@uki1pc12:~/Desktop/nodejs+mongodb/node+student$ node less.js
(node:11804) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use the new Server Discovery and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.

[10:07:05] uki121@uki1pc12:~/Desktop/nodejs+mongodb/node+student$ node less.js
(node:12155) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use the new Server Discovery and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.

1 document updated
[10:07:10] uki121@uki1pc12:~/Desktop/nodejs+mongodb/node+student$
```



The screenshot shows the Atom code editor with a file named `reset.js`. The code is a Node.js script using the `Mongoose` library to connect to a MongoDB database and update a document.

```
var MongoClient = require('mongoose').MongoClient;
var url = "mongodb://127.0.0.1:27017/";

MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("mydb");
  var query = { name: "John" };
  var newvalues = { $set: { "maths_marks":87,"english_marks":23 } };
  dbo.collection("customers").updateOne(query, newvalues, function(err, res) {
    if (err) throw err;
    console.log("1 document updated");
    db.close();
  });
});
```

13) Rename the english_marks column/field for John to science_marks

```
Terminal
ukistu12@ukipc12:~/Desktop/nodejs+mongodb/node+student$ node less.js
  name: 'Raan',
  maths marks: 41,
  english marks: 65 }
ukistu12@ukipc12:~/Desktop/nodejs+mongodb/node+student$ node less
less is less_sub.
ukistu12@ukipc12:~/Desktop/nodejs+mongodb/node+student$ node less.js
(node:11804) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use the new Server Discovery and Monitoring engine, pass option { useNewUrlParser: true } to the MongoClient constructor.
          console.log('1 document deleted');
[]
ukistu12@ukipc12:~/Desktop/nodejs+mongodb/node+student$ node reset.js
(node:12150) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use the new Server Discovery and Monitoring engine, pass option { useNewUrlParser: true } to the MongoClient constructor.
          console.log('1 document deleted');
ukistu12@ukipc12:~/Desktop/nodejs+mongodb/node+student$ node remove.js
(node:12775) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use the new Server Discovery and Monitoring engine, pass option { useNewUrlParser: true } to the MongoClient constructor.
          console.log('1 document deleted');
ukistu12@ukipc12:~/Desktop/nodejs+mongodb/node+student$ █
```



The screenshot shows the Atom code editor with the following details:

- Project Path:** node-student
- File:** remove.js
- Code Content:**

```
var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://localhost:27017/";

MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("Student");
  var myquery = { name: "Kumaran", maths_marks:32,science_marks:84,english_marks:73 };
  dbo.collection("studentmarks").deleteOne(myquery, function(err, obj) {
    if (err) throw err;
    console.log("1 document deleted");
    db.close();
  });
});
```

Rename the english_marks column/field for John to science_marks

The screenshot shows a Linux desktop environment with a terminal window and an Atom code editor window.

Terminal:

```
Terminal 12: uki12@ukipcl2: ~$ nodejs+mongodb/node+student
/home/uki12/node_modules/mongodb/lib/utils.js:132
    throw err;
      ^
MongoError: Projection cannot have a mix of inclusion and exclusion.
  at Connection.<anonymous> (/home/uki12/node_modules/mongodb/lib/core/connection/base.js:458:11)
  at Connection.emit (events.js:182:13)
  at processMessage (/home/uki12/node_modules/mongodb/lib/core/connection/collection.js:384:10)
  at Connection.<anonymous> (/home/uki12/node_modules/mongodb/lib/core/connection/onconnection.js:553:15)
  at Socket.emit (events.js:182:13)
  at addChunk (internal/streams/readable.js:261:12)
  at _readableAddChunk (internal/streams/readable.js:264:11)
  at Socket.Readable.push (internal/streams/readable.js:219:10)
  at TCP.onStreamRead [as onread] (internal/stream_base_commons.js:94:17)
uki12@ukipcl2:~/Desktop/nodejs+mongodb/node+students$ node rename.js
DeprecationWarning: current Server Discovery and Monitoring engine
is deprecated and will be removed in a future version. To use the new Server Di-
scover and Monitoring engine, pass option { useUnifiedTopology: true } to the Mo-
ngoclient constructor.
document updated
uki12@ukipcl2:~/Desktop/nodejs+mongodb/node+students$
```

Atom Editor:

```
Atom 1.34.0 - rename.js — ~/Desktop/nodejs+mongodb/node+student — Atom
Project
(rename.js) rename.js
  1 var MongoClient = require('mongodb').MongoClient;
  2 var url = "mongodb://127.0.0.1:27017/";
  3
  4 MongoClient.connect(url, function(err, db) {
  5   if (err) throw err;
  6   var dbo = db.db("mydb");
  7   var myquery = { name: "John" };
  8   var newvalues = { $rename: { "english_marks": "science_marks" } };
  9   dbo.collection("customers").updateOne(myquery, newvalues, function(err, res) {
 10     if (err) throw err;
 11     console.log("1 document updated");
 12   });
 13 });
 14 });
 15 }
```

The code in the Atom editor is a Node.js script named `rename.js` located in a project folder. It uses the `MongoClient` from the `mongodb` package to connect to a MongoDB database. It then performs a `updateOne` operation on the `customers` collection, renaming the `english_marks` field to `science_marks` for the document where `name` is `"John"`.