Node JS + MongoDB Exercise

1) Create a Database called student

```js
JS Node_MongoEx2.js > ...
1    // 1. To create a DataBase
2    const MongoClient = require('mongodb').MongoClient;
3    MongoClient.connect("mongodb://localhost:27017/student", function (err,db) {
4        if (err) throw err;
5        console.log('Database Created');
6        db.close();
7    })
8    // End
9
10
```

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL

sriram@sriram-Inspiron-5570:~/Documents/Node JS$ node Node_MongoEx2.js
Database Created
sriram@sriram-Inspiron-5570:~/Documents/Node JS$ ▏
```

2) Create a collection called studentmarks

```js
 9
10    //2. To create studentmarks Collection
11    const MongoClient = require('mongodb').MongoClient;
12    const url = "mongodb://localhost:27017/";
13    MongoClient.connect(url, function (err,db) {
14        if (err) throw err;
15        var dbo = db.db("student");
16        dbo.createCollection("studentmarks", function (err,res) {
17            if (err) throw err;
18            console.log('Collection Created');
19            db.close();
20        })
21    })
22    // End.
23
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

```
sriram@sriram-Inspiron-5570:~/Documents/Node JS$ node Node_MongoEx2.js
Collection Created
sriram@sriram-Inspiron-5570:~/Documents/Node JS$ 
```

3) Create the documents listed in above table.

```
JS Node_MongoEx2.js > ...
23
24    // 3. To Insert Multipile Datas
25    const MongoClient = require('mongodb').MongoClient;
26    const url = "mongodb://localhost:27017/";
27    MongoClient.connect(url, function (err,db) {
28        if (err) throw err;
29        var dbo = db.db("student");
30        const myobject = [{name:"Mala",maths_marks:45,english_marks:53,science_marks:72},
31        {name:"Vanu",maths_marks:80,english_marks:75,science_marks:85},
32        {name:"Kala",maths_marks:32,english_marks:46,science_marks:53},
33        {name:"Aruli",maths_marks:78,english_marks:85,science_marks:80},
34        {name:"Shayu",maths_marks:80,english_marks:76,science_marks:65}
35        ,{name:"Kumaran",maths_marks:32,english_marks:73,science_marks:84},
36        {name:"Lucky",maths_marks:66,english_marks:90,science_marks:45}
37        ,{name:"Gva",maths_marks:71,english_marks:75,science_marks:56},
38        {name:"Raam",maths_marks:41,english_marks:65,science_marks:88}];
39        dbo.collection ( "studentmarks" ).insertMany ( myobject, function (err,res) {
40            if (err) throw err;
41            console.log(res);
42            db.close();
43        });
44    });
45    // End
```

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL

sriram@sriram-Inspiron-5570:~/Documents/Node JS$ node Node_MongoEx2.js
{
  acknowledged: true,
  insertedCount: 9,
  insertedIds: {
    '0': new ObjectId("62c06e4bb35add973cd73b39"),
    '1': new ObjectId("62c06e4bb35add973cd73b3a"),
    '2': new ObjectId("62c06e4bb35add973cd73b3b"),
    '3': new ObjectId("62c06e4bb35add973cd73b3c"),
    '4': new ObjectId("62c06e4bb35add973cd73b3d"),
    '5': new ObjectId("62c06e4bb35add973cd73b3e"),
    '6': new ObjectId("62c06e4bb35add973cd73b3f"),
    '7': new ObjectId("62c06e4bb35add973cd73b40"),
    '8': new ObjectId("62c06e4bb35add973cd73b41")
  }
}
sriram@sriram-Inspiron-5570:~/Documents/Node JS$
```

4) Increase the maths marks of Mala by 6 marks

```js
// 4. To Update Single Data
const mongoClient = require('mongodb').MongoClient;
const url = "mongodb://localhost:27017/";
mongoClient.connect(url, function (err,db) {
    if (err) throw err;
    var dbo = db.db("student");
    dbo.collection("studentmarks").updateOne({name:"Mala"},{$inc:{maths_marks:6}},
     function (err,res) {
        if (err) throw err;
        console.log(res);
        db.close();
    });
});
// End
```

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL

sriram@sriram-Inspiron-5570:~/Documents/Node JS$ node Node_MongoEx2.js
{
  acknowledged: true,
  modifiedCount: 1,
  upsertedId: null,
  upsertedCount: 0,
  matchedCount: 1
}
sriram@sriram-Inspiron-5570:~/Documents/Node JS$ 
```

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

```js
JS Node_MongoEx2.js > ...
40
41    // 5. To Find gt 50 in maths_marks
42    const mongoClient = require('mongodb').MongoClient;
43    const url = "mongodb://localhost:27017/";
44    mongoClient.connect(url, function (err,db) {
45        if (err) throw err;
46        var dbo = db.db("student");
47        var query = {maths_marks:{$gt:50}};
48        dbo.collection("studentmarks").find(query,{projection:{ _id:0 , name: 1}})
49        .toArray(function(err, result) {
50            if (err) throw err;
51            console.log(result);
52            db.close();
53        });
54    });
55    // End
56
```

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL

sriram@sriram-Inspiron-5570:~/Documents/Node JS$ node Node_MongoEx2.js
[
  { name: 'Mala' },
  { name: 'Vanu' },
  { name: 'Aruli' },
  { name: 'Shayu' },
  { name: 'Lucky' },
  { name: 'Gva' }
]
sriram@sriram-Inspiron-5570:~/Documents/Node JS$
```

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

```js
// 6. To Find Average
const mongoClient = require('mongodb').MongoClient;
const url = "mongodb://localhost:27017/";
mongoClient.connect(url, function (err,db) {
    if (err) throw err;
    var dbo = db.db("student");
    dbo.collection ("studentmarks").updateMany({},{$set:{average:1}},
        function (err,res) {
        if (err) throw err;
        console.log(res);
        db.close();
    });
});
// End
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   **TERMINAL**

```
sriram@sriram-Inspiron-5570:~/Documents/Node JS$ node Node_MongoEx2.js
{
  acknowledged: true,
  modifiedCount: 9,
  upsertedId: null,
  upsertedCount: 0,
  matchedCount: 9
}
sriram@sriram-Inspiron-5570:~/Documents/Node JS$
```

7) Update Marks_Science=75 to Lucky .

```js
JS Node_MongoEx2.js > ...
71
72    //7. Update marks to 75
73    const mongoClient = require('mongodb').MongoClient;
74    const url = "mongodb://localhost:27017/";
75    mongoClient.connect(url, function (err,db) {
76        if (err) throw err;
77        var dbo = db.db("student");
78        dbo.collection ("studentmarks").updateOne({name:"Lucky"},{$set:{science_marks:75}},
79        function (err,res) {
80            if (err) throw err;
81            console.log(res);
82            db.close();
83        });
84    });
85    // End
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

```
sriram@sriram-Inspiron-5570:~/Documents/Node JS$ node Node_MongoEx2.js
{
  acknowledged: true,
  modifiedCount: 1,
  upsertedId: null,
  upsertedCount: 0,
  matchedCount: 1
}
sriram@sriram-Inspiron-5570:~/Documents/Node JS$
```

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

```js
JS Node_MongoEx2.js > ...
86
87    // 8. 50 marks in all subjects
88    const mongoClient = require('mongodb').MongoClient;
89    const url = "mongodb://localhost:27017/";
90    mongoClient.connect(url, function (err,db) {
91        if (err) throw err;
92        var dbo = db.db("student");
93        var query = {$and:[{maths_marks:{$gt:50}},{english_marks:{$gt:50}},
94            {science_marks:{$gt:50}}]};
95        dbo.collection("studentmarks").find(query,{projection:{ _id:0 , name: 1}})
96        .toArray(function(err, result) {
97            if (err) throw err;
98            console.log(result);
99            db.close();
100       });
101   });
102   // End
103
```

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL

sriram@sriram-Inspiron-5570:~/Documents/Node JS$ node Node_MongoEx2.js
[
  { name: 'Mala' },
  { name: 'Vanu' },
  { name: 'Aruli' },
  { name: 'Shayu' },
  { name: 'Lucky' },
  { name: 'Gva' }
]
sriram@sriram-Inspiron-5570:~/Documents/Node JS$ 
```

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

```js
JS Node_MongoEx2.js > ...
89    // 9. lt and gt to 50 in maths_marks and english_marks
90    const mongoClient = require('mongodb').MongoClient;
91    const url = "mongodb://localhost:27017/";
92    mongoClient.connect(url, function (err,db) {
93        if (err) throw err;
94        var dbo = db.db("student");
95        var query = {$and:[{maths_marks:{$lt:50}},{english_marks:{$gt:50}}]};
96    dbo.collection("studentmarks").find(query,{projection:{ _id:0 , name: 1}})
97    .toArray(function(err, result) {
98            if (err) throw err;
99            console.log(result);
100           db.close();
101       });
102   });
103   // End
```

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL

[ { name: 'Kumaran' }, { name: 'Raam' } ]
sriram@sriram-Inspiron-5570:~/Documents/Node JS$ 
```

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

```js
JS Node_MongoEx2.js > ...
104
105    // 10. lt 50 both maths_marks and science_marks
106    const mongoClient = require('mongodb').MongoClient;
107    const url = "mongodb://localhost:27017/";
108    mongoClient.connect(url, function (err,db) {
109        if (err) throw err;
110        var dbo = db.db("student");
111        var query = {$or:[{maths_marks:{$lt:40}},{science_marks:{$lt:40}}]};
112        dbo.collection("studentmarks").find(query,{projection:{ _id:0 , name: 1}})
113        .toArray(function(err, result) {
114            console.log(result);
115            db.close();
116        });
117    });
118    // End
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

```
sriram@sriram-Inspiron-5570:~/Documents/Node JS$ node Node_MongoEx2.js
[ { name: 'Kala' }, { name: 'Kumaran' } ]
sriram@sriram-Inspiron-5570:~/Documents/Node JS$
```

11) Remove Science column/field for Raam

```js
// 11. remove field for Raam
const mongoClient = require('mongodb').MongoClient;
const url = "mongodb://localhost:27017/";
mongoClient.connect(url, function (err,db) {
    if (err) throw err;
    var dbo = db.db("student");
    dbo.collection ("studentmarks").updateOne({name:"Raam"},{$unset:{science_marks:1}},
    function (err,res) {
        if (err) throw err;
        console.log(res);
        db.close();
    });
});
// End
```

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL

sriram@sriram-Inspiron-5570:~/Documents/Node JS$ node Node_MongoEx2.js
{
  acknowledged: true,
  modifiedCount: 1,
  upsertedId: null,
  upsertedCount: 0,
  matchedCount: 1
}
sriram@sriram-Inspiron-5570:~/Documents/Node JS$
```

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

```
JS Node_MongoEx2.js > ...
134
135     // 12. Update Jhon maths_marks to 87 and engilsh_marks to 23
136     const mongoClient = require('mongodb').MongoClient;
137     const url = "mongodb://localhost:27017/";
138     mongoClient.connect(url, function (err,db) {
139         if (err) throw err;
140         var dbo = db.db("student");
141         dbo.collection ("studentmarks").updateOne({name:"Jhon"},
142         {$set:{maths_marks:87,english_marks:23}},{upsert:true}, function (err,res) {
143             if (err) throw err;
144             console.log(res);
145             db.close();
146         });
147     });
148     // End
```

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL

sriram@sriram-Inspiron-5570:~/Documents/Node JS$ node Node_MongoEx2.js
{
  acknowledged: true,
  modifiedCount: 0,
  upsertedId: new ObjectId("62c091496514feadee9d6b31"),
  upsertedCount: 1,
  matchedCount: 0
}
sriram@sriram-Inspiron-5570:~/Documents/Node JS$
```

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

```js
JS Node_MongoEx2.js > ...
150    // 13. rename english_marks to science_marks for Jhon
151    const mongoClient = require('mongodb').MongoClient;
152    const url = "mongodb://localhost:27017/";
153    mongoClient.connect(url, function (err,db) {
154        if (err) throw err;
155        var dbo = db.db("student");
156        dbo.collection ("studentmarks").updateOne({name:"Jhon"},
157        {$rename:{"english_marks":"science_marks"}}, function (err,res) {
158            if (err) throw err;
159            console.log(res);
160            db.close();
161        });
162    });
163    // End
```

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL


sriram@sriram-Inspiron-5570:~/Documents/Node JS$ node Node_MongoEx2.js
{
  acknowledged: true,
  modifiedCount: 1,
  upsertedId: null,
  upsertedCount: 0,
  matchedCount: 1
}
sriram@sriram-Inspiron-5570:~/Documents/Node JS$
```

14) Remove Kumaran's document from collection

```js
JS Node_MongoEx2.js > ...
104
165    // 14. Remove Kumaran document from Collection
166    const mongoClient = require('mongodb').MongoClient;
167    const url = "mongodb://localhost:27017/";
168    mongoClient.connect(url, function (err,db) {
169        if (err) throw err;
170        var dbo = db.db("student");
171        var query = {name:"Kumaran"};
172        dbo.collection ("studentmarks").deleteOne(query, function (err,res) {
173            if (err) throw err;
174            console.log(res);
175            db.close();
176        });
177    });
178    // End
```

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL


sriram@sriram-Inspiron-5570:~/Documents/Node JS$ node Node_MongoEx2.js
{ acknowledged: true, deletedCount: 1 }
sriram@sriram-Inspiron-5570:~/Documents/Node JS$ 
```

15) Find Kala's or Aruli's math_marks and science_marks

```js
179
180    // 15. Find Kala's or Aruli's math_marks and science_marks
181    const mongoClient = require('mongodb').MongoClient;
182    const url = "mongodb://localhost:27017/";
183    mongoClient.connect(url, function (err,db) {
184        if (err) throw err;
185        var dbo = db.db("student");
186        dbo.collection("studentmarks").find({$or:[{name:"Kala"},{name:"Aruli"}]},
187        {projection:{_id:0, name:1,maths_marks:1,science_marks:1}})
188        .toArray(function(err, result) {
189            if (err) throw err;
190            console.log(result);
191            db.close();
192        });
193    });
194    // End
```

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL


sriram@sriram-Inspiron-5570:~/Documents/Node JS$ node Node_MongoEx2.js
[
  { name: 'Kala', maths_marks: 32, science_marks: 53 },
  { name: 'Aruli', maths_marks: 78, science_marks: 80 }
]
sriram@sriram-Inspiron-5570:~/Documents/Node JS$
```