

NO SQL LAB ASSIGNMENT – 2

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REGISTRATION NUMBER : 19BCE7230

Creation of collection Student_Details -

```
C:\Program Files\MongoDB\Server\5.0\bin>mongo.exe

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--
  Enable MongoDB's free cloud-based monitoring service, which will then receive and display
  metrics about your deployment (disk utilization, CPU, operation statistics, etc).

  The monitoring data will be available on a MongoDB website with a unique URL accessible to you
  and anyone you share the URL with. MongoDB may use this information to make product
  improvements and to suggest MongoDB products and deployment options to you.

  To enable free monitoring, run the following command: db.enableFreeMonitoring()
  To permanently disable this reminder, run the following command: db.disableFreeMonitoring()
--
--
--
> use student
switched to db student
> show dbs
admin      0.000GB
config     0.000GB
local      0.000GB
movies     0.000GB
test       0.000GB
> db.createCollection("Student_Details")
{ "ok" : 1 }
> db.Student_Details.insert({s_name:"Sanjay Kumar",admission_no:"14589" , course_code:"09876" , course_name:"Oracle",start_date:"12-Mar-17",course_fees:"13800",duration_months:"12",hostel:"Y"})
WriteResult({ "ninserted" : 1 })
> db.Student_Details.insert({s_name:"Gowri Shankar",admission_no:"15896" , course_code:"js3698" , course_name:"Javascript" , start_date:"23-Jan-18",course_fees:"7950",duration_months:"10",hostel:"N"})
WriteResult({ "ninserted" : 1 })
> db.Student_Details.insert({s_name:"Divya Prabha",admission_no:"14836" , course_code:"C2569" , course_name:"Null",start_date:"Null",course_fees:"Null",duration_months:"Null",hostel:"Null"})
WriteResult({ "ninserted" : 1 })
> db.Student_Details.insert({s_name:"Gokul Krishna",admission_no:"15865" , course_code:"L876" , course_name:"Linux",start_date:"13-Aug-17",course_fees:"12500",duration_months:"10",hostel:"Y"})
WriteResult({ "ninserted" : 1 })
> db.Student_Details.insert({s_name:"Shree Nandhini",admission_no:"15487" , course_code:"C2569" , course_name:"C#",start_date:"30-Sep-16",course_fees:"9600",duration_months:"8",hostel:"N"})
WriteResult({ "ninserted" : 1 })
> db.Student_Details.insert({s_name:"Umesh Yadav",admission_no:"15489" , course_code:"Dn598" , course_name:"Dotnet",start_date:"17-Apr-18",course_fees:"6800",duration_months:"6",hostel:"Y"})
WriteResult({ "ninserted" : 1 })
> db.Student_Details.insert({s_name:"Sanjay Kumar",admission_no:"14589" , course_code:"C2569" , course_name:"C#",start_date:"12-Mar-17",course_fees:"9600",duration_months:"12",hostel:"Y"})
WriteResult({ "ninserted" : 1 })
>
```

MongoDB Compass - localhost:27017/student.Student_Details

Connect View Collection Help

localhost:27017

DBS COLLECTIONS

HOST localhost:27017

CLUSTER Standalone

EDITION MongoDB 5.0.9 Community

My Queries

Databases

Filter your data

admin

config

local

movies

student

Student_Details

test

my_name

Documents student.Student_Details

student.Student_Details

1 DOCUMENTS 1 INDEXES

Documents Aggregations Schema Explain Plan Indexes Validation

0 FILTER { field: 'value' }

ADD DATA VIEW

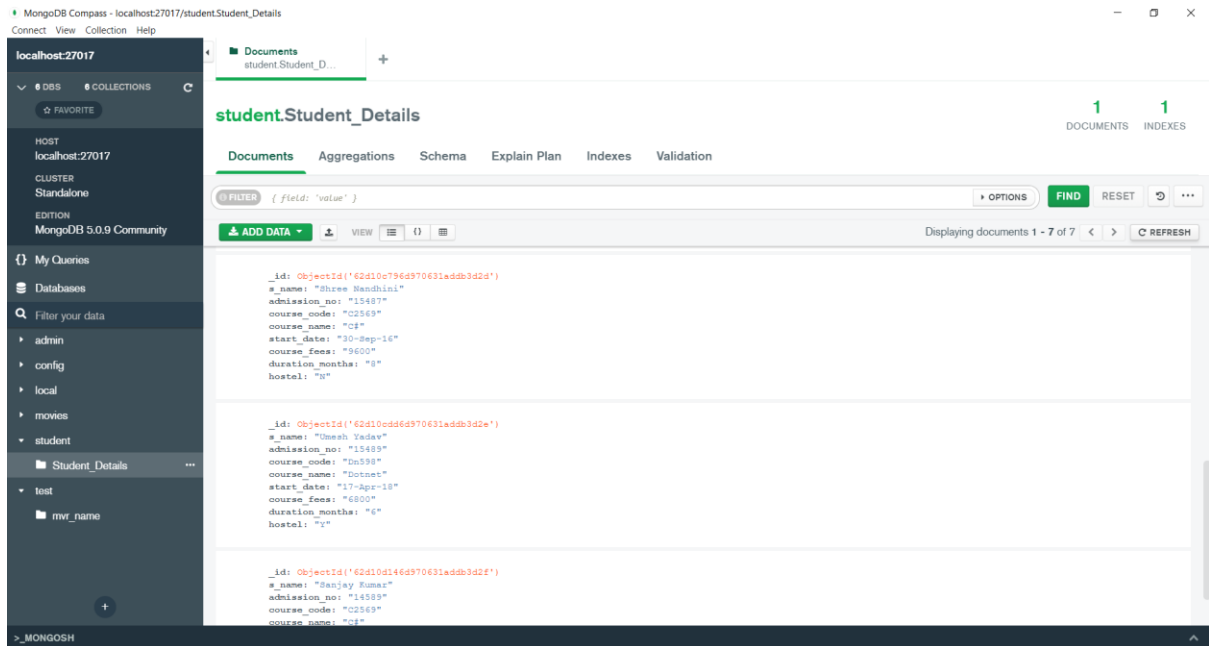
Displaying documents 1 - 7 of 7

REFRESH

```
{ "_id": ObjectId("624109b6d970631adb3d29"),
  "s_name": "Sanjay Kumar",
  "admission_no": "14589",
  "course_code": "09876",
  "course_name": "Oracle",
  "start_date": "12-Mar-17",
  "course_fees": "13800",
  "duration_months": "12",
  "hostel": "Y" }

{ "_id": ObjectId("62410ae76d970631adb3d2a"),
  "s_name": "Gowri Shankar",
  "admission_no": "15896",
  "course_code": "js3698",
  "course_name": "Javascript",
  "start_date": "23-Jan-18",
  "course_fees": "7950",
  "duration_months": "10",
  "hostel": "N" }

{ "_id": ObjectId("62410ba26d970631adb3d2b"),
  "s_name": "Divya Prabha",
  "admission_no": "14836",
  "course_code": "C2569",
  "course_name": "Null",
  "start_date": "Null",
  "course_fees": "Null",
  "duration_months": "Null",
  "hostel": "Null" }
```



QUERIES -

1. Display the Course Name for which the course duration is more than 10 months.

```
> db.Student_Details.find({"duration_months":{"$gt":"10"}}).pretty()
{
  "_id" : ObjectId("62d109bf6d970631adb3d29"),
  "s_name" : "Sanjay Kumar",
  "admission_no" : "14589",
  "course_code" : "09876",
  "course_name" : "Oracle",
  "start_date" : "12-Mar-17",
  "course_fees" : "13800",
  "duration_months" : "12",
  "hostel" : "Y"
}
```

```
{
  "_id" : ObjectId("62d10d146d970631adb3d2f"),
  "s_name" : "Sanjay Kumar",
  "admission_no" : "14589",
  "course_code" : "C2569",
  "course_name" : "C#",
  "start_date" : "12-Mar-17",
  "course_fees" : "9600",
  "duration_months" : "12",
  "hostel" : "Y"
}
```

2. Display the details of students who opted for Course Oracle and C#.

```
C:\Program Files\MongoDB\Server\5.0\bin\mongo.exe
>
> db.Student_Details.find({$or:[{course_name:"Oracle"},{course_name:"C#"}]}).pretty()
{
  "_id" : ObjectId("62d109bf6d970631addb3d29"),
  "s_name" : "Sanjay Kumar",
  "admission_no" : "14589",
  "course_code" : "09876",
  "course_name" : "Oracle",
  "start_date" : "12-Mar-17",
  "course_fees" : "13800",
  "duration_months" : "12",
  "hostel" : "Y"
}
{
  "_id" : ObjectId("62d10c796d970631addb3d2d"),
  "s_name" : "Shree Nandhini",
  "admission_no" : "15487",
  "course_code" : "C2569",
  "course_name" : "C#",
  "start_date" : "30-Sep-16",
  "course_fees" : "9600",
  "duration_months" : "8",
  "hostel" : "N"
}
{
  "_id" : ObjectId("62d10d146d970631addb3d2f"),
  "s_name" : "Sanjay Kumar",
  "admission_no" : "14589",
  "course_code" : "C2569",
  "course_name" : "C#",
  "start_date" : "12-Mar-17",
  "course_fees" : "9600",
  "duration_months" : "12",
  "hostel" : "Y"
}
>
```

3. Display the Name and Admission number in a single column.

```
C:\Program Files\MongoDB\Server\5.0\bin\mongo.exe
>
> db.Student_Details.aggregate(
... [
... { $project: { name: { $concat: [ "$s_name", " - ", "$admission_no" ] } } })
{ "_id" : ObjectId("62d109bf6d970631addb3d29"), "name" : "Sanjay Kumar - 14589" }
{ "_id" : ObjectId("62d10ae76d970631addb3d2a"), "name" : "Gowri Shankar - 15896" }
{ "_id" : ObjectId("62d10ba26d970631addb3d2b"), "name" : "Divya Prabha - 14836" }
{ "_id" : ObjectId("62d10bf66d970631addb3d2c"), "name" : "Gokul Krishna - 15865" }
{ "_id" : ObjectId("62d10c796d970631addb3d2d"), "name" : "Shree Nandhini - 15487" }
{ "_id" : ObjectId("62d10cdd6d970631addb3d2e"), "name" : "Umesh Yadav - 15489" }
{ "_id" : ObjectId("62d10d146d970631addb3d2f"), "name" : "Sanjay Kumar - 14589" }
>
```

4. Display the Name of the student who have chosen C# after December 2016

Select C:\Program Files\MongoDB\Server\5.0\bin\mongo.exe

```
>
> db.Student_Details.find({
...   $and:[
...     {"course_name":"C#"},
...     {"start_date":{"$gt":"01-Dec-16"}}
...   ]
... }).pretty()
{
  "_id" : ObjectId("62d10ba26d970631addb3d2b"),
  "s_name" : "Divya Prabha",
  "admission_no" : "14836",
  "course_code" : "C2569",
  "course_name" : "C#",
  "start_date" : "06-Apr-20",
  "course_fees" : "8750",
  "duration_months" : "09",
  "hostel" : "Y"
}
```

```

{
  "_id" : ObjectId("62d10d146d970631addb3d2f"),
  "s_name" : "Sanjay Kumar",
  "admission_no" : "14589",
  "course_code" : "C2569",
  "course_name" : "C#",
  "start_date" : "12-Mar-17",
  "course_fees" : "9600",
  "duration_months" : "12",
  "hostel" : "Y"
}
>
```

5. Display the Course Name in which the duration is greater than 10 months and amount is less than 13000.

```
> db.Student_Details.find(
... { "$and": [ {"duration_months": {"$gt":"10"}},
... {"course_fees": {"$lt":"13000"}} ] })
>
```

6. Display the student details who has opted hostel facility

C:\Program Files\MongoDB\Server\5.0\bin\mongo.exe

```
> db.Student_Details.find(
... {"hostel":{"$in:["Y"]}}
... ).pretty()
{
  "_id" : ObjectId("62d109bf6d970631adb3d29"),
  "s_name" : "Sanjay Kumar",
  "admission_no" : "14589",
  "course_code" : "09876",
  "course_name" : "Oracle",
  "start_date" : "12-Mar-17",
  "course_fees" : "13800",
  "duration_months" : "12",
  "hostel" : "Y"
}
{
  "_id" : ObjectId("62d10bf66d970631adb3d2c"),
  "s_name" : "Gokul Krishna",
  "admission_no" : "15865",
  "course_code" : "L876",
  "course_name" : "Linux",
  "start_date" : "13-Aug-17",
  "course_fees" : "12500",
  "duration_months" : "10",
  "hostel" : "Y"
}
{
  "_id" : ObjectId("62d10cdd6d970631adb3d2e"),
  "s_name" : "Umesh Yadav",
  "admission_no" : "15489",
  "course_code" : "Dn598",
  "course_name" : "Dotnet",
  "start_date" : "17-Apr-18",
  "course_fees" : "6800",
  "duration_months" : "6",
  "hostel" : "Y"
}
{
  "_id" : ObjectId("62d10d146d970631adb3d2f"),
  "s_name" : "Sanjay Kumar",
  "admission_no" : "14589",
  "course_code" : "C2569",
  "course_name" : "C#",
  "start_date" : "12-Mar-17",
  "course_fees" : "9600",
  "duration_months" : "12",
  "hostel" : "Y"
}
>
```

7. Display the Course code, Course name, StudentName and Admission Number for hostellers.

C:\Program Files\MongoDB\Server\5.0\bin\mongo.exe

```
> db.Student_Details.find({"hostel":"Y"},{"s_name":1,"course_name":1,"course_code":1,"admission_no":1,"_id":0});
{ "s_name" : "Sanjay Kumar", "admission_no" : "14589", "course_code" : "09876", "course_name" : "Oracle" }
{ "s_name" : "Divya Prabha", "admission_no" : "14836", "course_code" : "C2569", "course_name" : "C#" }
{ "s_name" : "Gokul Krishna", "admission_no" : "15865", "course_code" : "L876", "course_name" : "Linux" }
{ "s_name" : "Umesh Yadav", "admission_no" : "15489", "course_code" : "Dn598", "course_name" : "Dotnet" }
{ "s_name" : "Sanjay Kumar", "admission_no" : "14589", "course_code" : "C2569", "course_name" : "C#" }
>
```

8 . Update the details of student Divya Prabha with the following values Course_name=C#, Strt_date='6thApril 2000', course_fees=8750, duration_months=9, hostel=Y.

C:\Program Files\MongoDB\Server\5.0\bin\mongo.exe

```
> db.Student_Details.update(
... {s_name:"Divya Prabha"},
... {$set:{ course_name:"C#", start_date:"06-Apr-20", course_fees:"8750", duration_months:"09",hostel:"Y"}}
... )
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
>
```

9 . Decrement the course fee 10% for the courses have duration less than 10 months

Note : Since the course_fees is in quotes the output is as shown.

C:\Program Files\MongoDB\Server\5.0\bin\mongo.exe

```
> db.Student_Details.update({ "duration_months": { $in: ["1","2","3","4","5","6","7","8","9"] } }, { $mul: { "course_fees": 0.9 }},{multi:true});
WriteResult({
  "nMatched" : 0,
  "nUpserted" : 0,
  "nModified" : 0,
  "writeError" : {
    "code" : 14,
    "errmsg" : "Cannot apply $mul to a value of non-numeric type. {_id: ObjectId('62d18c796d970631addb3d2d')} has the field 'course_fees' of non-numeric type string"
  }
})
>
```

10. Find the average course fee of all the courses.

Note : Since the course_fees is in quotes the average value is displayed null .

C:\Program Files\MongoDB\Server\5.0\bin\mongo.exe

```
> db.Student_Details.aggregate([{$unwind:"$course_name"},{$group:{ _id:"$course_name",AverageValue: { $avg: "$course_fees"}}}])
{ "_id" : "Oracle", "AverageValue" : null }
{ "_id" : "Dotnet", "AverageValue" : null }
{ "_id" : "Null", "AverageValue" : null }
{ "_id" : "Linux", "AverageValue" : null }
{ "_id" : "Javascript", "AverageValue" : null }
{ "_id" : "C#", "AverageValue" : null }
>
```