

CSE-5331-001 DBMS MODELS AND IMPLEMENTATION

PROJECT 2(QUERY)

SUMMER 2020

TEAM :

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Mongo db command:

Start mongo shell:

```
Command Prompt - mongo
Microsoft Windows [Version 10.0.18362.959]
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C:\Users\bnithomongo
MongoDB shell version v4.4.0
connecting to: mongodb://127.0.0.1:27017/?compressors=disabled&gssapiServiceName=mongodb
Implicit session: session { "id" : UUID("01775cd1-9e0c-485e-ac95-99ce813465ee") }
MongoDB server version: 4.4.0
---
The server generated these startup warnings when booting:
  2020-08-06T17:14:03.265-05:00: ***** SERVER RESTARTED *****
  2020-08-06T17:14:16.624-05:00: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted
---
---
  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()
---
>
```

Show dbs:

```
Command Prompt - mongo
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(c) 2019 Microsoft Corporation. All rights reserved.

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  To enable free monitoring, run the following command: db.enableFreeMonitoring()
  To permanently disable this reminder, run the following command: db.disableFreeMonitoring()
---
> show dbs
admin    0.000GB
config  0.000GB
db2      0.001GB
local    0.000GB
pavithra 0.001GB
>
```

Show collections:

```
Command Prompt - mongo
(C) 2019 Microsoft Corporation. All rights reserved.

C:\Users\bnitha\mongo
MongoDB shell version v4.4.0
connecting to: mongodb://127.0.0.1:27017/?compressors=disabled&gssapiServiceName=mongodb
implicit session: session { "id" : UUID("01775cd1-9ebc-485e-ac95-99ce813465ee") }
MongoDB server version: 4.4.0
...
The server generated these startup warnings when booting:
  2020-08-06T17:14:03.265-05:00: ***** SERVER RESTARTED *****
  2020-08-06T17:14:16.624-05:00: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted
...
...
  Enable MongoDB's free cloud-based monitoring service, which will then receive and display
  metrics about your deployment (disk utilization, CPU, operation statistics, etc).

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  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()
...
> show dbs
admin            0.000GB
config           0.000GB
db2              0.001GB
local            0.000GB
pavithra         0.001GB
> use db2
switched to db db2
> show collections
DEPARTMENT
DEPT_LOCATIONS
DepartmentFinal
EMPLOYEE
EmpDept
EmployeeFinal
MgrDetails
PROJECT
ProjDept
ProjEmp
ProjEmpWorks
ProjJunks
ProjectFinal
WORKS_ON
student
>
```

findOne():

```
Command Prompt - mongo
> db.DEPARTMENT.findOne()
{
  "_id" : ObjectId("5f2a06b8485ae1475031ac7b"),
  "Dname" : "Research",
  "Dnumber" : "5",
  "Mgr_ssn" : "333445555",
  "Mgr_start_date" : " 22-MAY-1978"
}
> db.DEPT_LOCATIONS
db2.DEPT_LOCATIONS
> show dbs
admin            0.000GB
config           0.000GB
db2              0.001GB
local            0.000GB
pavithra         0.001GB
> use db2
switched to db db2
> db.EMPLOYEE.findOne()
{
  "_id" : ObjectId("5f2a06f5485ae1475031ac93"),
  "Fname" : "James",
  "Minit" : " E",
  "Lname" : " Borg",
  "Ssn" : "888665555",
  "Bdate" : " 10-NOV-1927",
  "Address" : "450 Stone,Houston,TX",
  "Sex" : " M",
  "Salary" : "55000",
  "Super_ssn" : " null",
  "Dno" : "1"
}
> db.DEPARTMENT.findOne()
{
  "_id" : ObjectId("5f2a06b8485ae1475031ac7b"),
  "Dname" : "Research",
  "Dnumber" : "5",
  "Mgr_ssn" : "333445555",
  "Mgr_start_date" : " 22-MAY-1978"
}
> db.PROJECT.findOne()
{
  "_id" : ObjectId("5f2a0724485ae1475031acda"),
}
```

```
Command Prompt - mongo
> db.PROJECT.findOne()
{
  "_id" : ObjectId("5f2a0724485ae1475031acda"),
  "Pname" : "ProductX",
  "Pnumber" : "1",
  "Plocation" : "Bellaire",
  "Dnum" : "5"
}
> db.WORKS_ON.findOne()
{
  "_id" : ObjectId("5f2a073b485ae1475031acec"),
  "Essn" : "123456789",
  "Pno" : "1",
  "Hours" : "32.5"
}
> db.DepartmentFinal.findOne()
{
  "_id" : ObjectId("5f2a06b8485ae1475031ac7b"),
  "Dname" : "Research",
  "Dnumber" : "5",
  "MgrDetails" : {
    "Fname" : "Franklin",
    "Lname" : "Wong"
  },
  "DeptEmpl" : [
    {
      "Fname" : "Franklin",
      "Lname" : "Wong",
      "Salary" : "40000"
    },
    {
      "Fname" : "John",
      "Lname" : "Smith",
      "Salary" : "30000"
    },
    {
      "Fname" : "Ramesh",
      "Lname" : "Narayan",
      "Salary" : "38000"
    },
    {
      "Fname" : "Joyce",
      "Lname" : "English",
      "Salary" : "30000"
    }
  ]
}
```

```
Command Prompt - mongo
> db.ProjectFinal.findOne()
{
  "_id" : ObjectId("5f2a0724485ae1475031acda"),
  "Pname" : "ProductX",
  "Pnumber" : "1",
  "ProjDept" : {
    "Dname" : "Research"
  },
  "ProjEmp" : [
    {
      "Fname" : "Franklin",
      "Lname" : "Wong"
    },
    {
      "Fname" : "John",
      "Lname" : "Smith"
    },
    {
      "Fname" : "Ramesh",
      "Lname" : "Narayan"
    },
    {
      "Fname" : "Joyce",
      "Lname" : "English"
    },
    {
      "Fname" : "Michael",
      "Lname" : "Morgan"
    },
    {
      "Fname" : "Andrea",
      "Lname" : "Sondrini"
    },
    {
      "Fname" : "James",
      "Lname" : "Miller"
    }
  ],
  "ProjEmpWorks" : [
    {
      "Hours" : "32.5"
    }
  ]
}
```

```
Command Prompt - mongo
> db.EmployeeFinal.findOne()
{
  "_id" : ObjectId("5f2a06f5485ae1475031ac93"),
  "Pname" : "Reorganization",
  "Pnumber" : "20",
  "ProjWorks" : [
    {
      "Hours" : "10"
    },
    {
      "Hours" : "15"
    },
    {
      "Hours" : "5"
    },
    {
      "Hours" : "4"
    },
    {
      "Hours" : "10"
    }
  ],
  "Fname" : "James",
  "Lname" : "Borg",
  "EmpDept" : {
    "Dname" : "Headquarters"
  }
}
> db.DeptEmpl.findOne()
{
  "_id" : ObjectId("5f2a06b8485ae1475031ac7b"),
  "Dname" : "Research",
  "Dnumber" : "5",
  "DeptEmpl" : [
    {
      "Fname" : "Franklin",
      "Lname" : "Wong",
      "Salary" : "40000"
    },
    {
      "Fname" : "John",
      "Lname" : "Smith",
      "Salary" : "30000"
    }
  ]
}
```

```
Command Prompt - mongo
> db.EmpDept.findOne()
{
  "_id" : ObjectId("5f2a06f5485ae1475031ac93"),
  "Fname" : "James",
  "Lname" : "Borg",
  "Dno" : "1",
  "EmpDept" : {
    "Dname" : "Headquarters"
  }
}
> db.MgrDetails.findOne()
{
  "_id" : ObjectId("5f2a06b8485ae1475031ac7b"),
  "Dname" : "Research",
  "Dnumber" : "5",
  "MgrDetails" : {
    "Fname" : "Franklin",
    "Lname" : "Wong"
  }
}
> db.ProjDept.findOne()
{
  "_id" : ObjectId("5f2a0724485ae1475031acda"),
  "Pname" : "ProductX",
  "Pnumber" : "1",
  "ProjDept" : {
    "Dname" : "Research"
  }
}
> db.ProjEmp.findOne()
{
  "_id" : ObjectId("5f2a0724485ae1475031acda"),
  "Pname" : "ProductX",
  "Pnumber" : "1",
  "ProjEmp" : [
    {
      "Fname" : "Franklin",
      "Lname" : "Wong"
    },
    {
      "Fname" : "John",
      "Lname" : "Smith"
    }
  ]
}
```

```
Select Command Prompt - mongo
> db.ProjEmpworks.findOne()
{
  "_id" : ObjectId("5f2a0724485ae1475031acda"),
  "Pname" : "ProductX",
  "Pnumber" : "1",
  "ProjEmp" : [
    {
      "Fname" : "Franklin",
      "Lname" : " Wong"
    },
    {
      "Fname" : "John",
      "Lname" : " Smith"
    },
    {
      "Fname" : "Ramesh",
      "Lname" : " Narayan"
    },
    {
      "Fname" : "Joyce",
      "Lname" : " English"
    },
    {
      "Fname" : "Michael",
      "Lname" : " Morgan"
    },
    {
      "Fname" : "Andrea",
      "Lname" : " Sondrini"
    },
    {
      "Fname" : "James",
      "Lname" : " Miller"
    }
  ],
  "ProjEmpWorks" : [
    {
      "Hours" : "32.5"
    },
    {
      "Hours" : "20"
    }
  ]
}
```

Count():

```
Command Prompt - mongo
> db.DEPARTMENT.find().count()
9
> db.DEPT_LOCATIONS.find().count()
15
> db.DepartmentFinal.find().count()
9
> db.DeptEmpl.find().count()
9
> db.EMPLOYEE.find().count()
71
> db.EmDept.find().count()
71
> db.EmployeeFinal.find().count()
71
> db.MgrDetails.find().count()
9
> db.PROJECT.find().count()
18
> db.ProjDept.find().count()
18
> db.ProjEmp.find().count()
18
> db.ProjEmpWorks.find().count()
18
> db.ProjWorks.find().count()
18
> db.ProjectFinal.find().count()
18
> db.WORKS_ON.find().count()
95
>
```

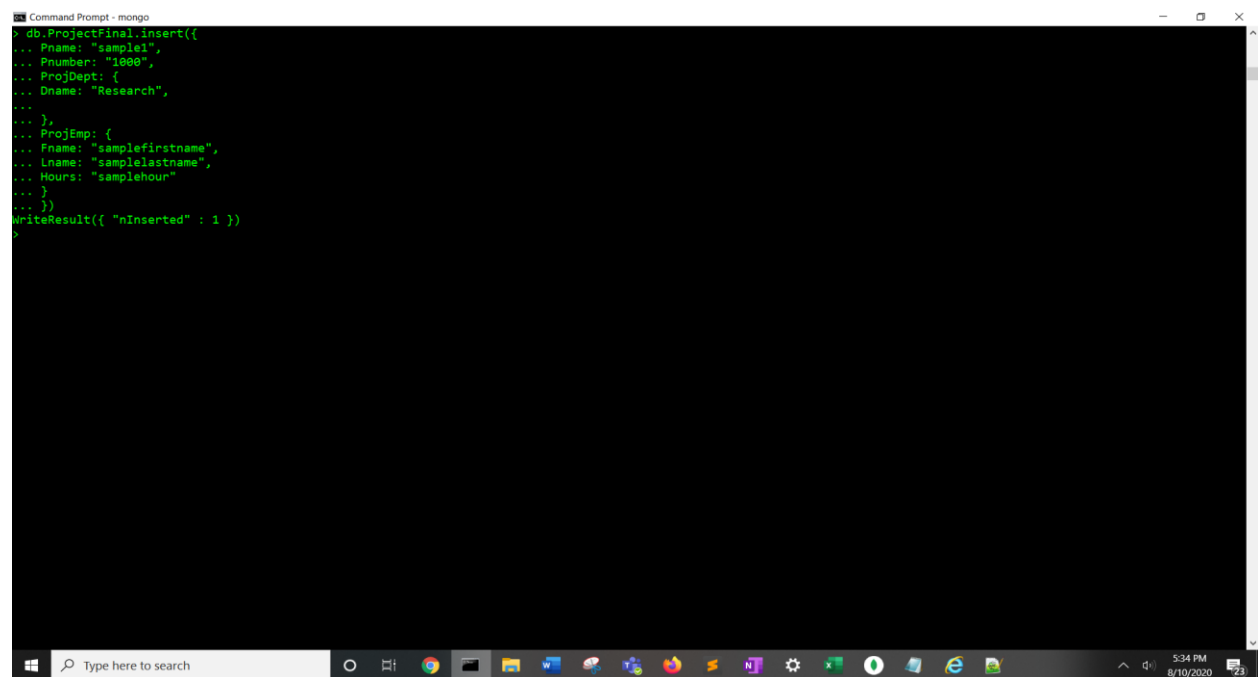
*****INSERTING A DOCUMENT INTO A COLLECTION:*****

*****CREATE:*****

```
db.ProjectFinal.insert({
  Pname: "sample1",
  Pnumber: "1000",
  ProjDept: {
    Dname: "Research",

  },
  ProjEmp: {
    Fname: "samplefirstname",
    Lname: "samplelastname",
    Hours: "samplehour"
  }
})
```

OUTPUT:



```
Command Prompt - mongo
> db.ProjectFinal.insert({
... Pname: "sample1",
... Pnumber: "1000",
... ProjDept: {
... Dname: "Research",
... },
... ProjEmp: {
... Fname: "samplefirstname",
... Lname: "samplelastname",
... Hours: "samplehour"
... }
... })
WriteResult({ "nInserted" : 1 })
>
```

The screenshot shows a Windows Command Prompt window titled "Command Prompt - mongo". The user has entered a MongoDB insert command to add a document to the 'ProjectFinal' collection. The document contains fields for project name, number, department, and employee details. The output shows that the document was successfully inserted, with 'nInserted' set to 1. The taskbar at the bottom shows the time as 5:34 PM on 8/10/2020.

*****READ:*****

```
db.ProjectFinal.find()
```

OUTPUT:

```
db.projects.find()
{ "_id": "ObjectID('5f2a6724485ae1475031acda)", "Pname": "ProductX", "Pnumber": "1", "ProjDept": { "Dname": "Research", "ProjEmp": [ { "Fname": "Franklin", "Lname": "Wong", }, { "Fname": "John", "Lname": "Smith", }, { "Fname": "Ramesh", "Lname": "Narayan", }, { "Fname": "Joyce", "Lname": "English", }, { "Fname": "Michael", "Lname": "Morgan", }, { "Fname": "Andrea", "Lname": "Sondrini", }, { "Fname": "James", "Lname": "Miller" } ], "ProjEmpWorks": [ { "Hours": "32.5", }, { "Hours": "28" }, { "Hours": "22", }, { "Hours": "25" } ] }
{ "_id": "ObjectID('5f2a6724485ae1475031acdb)", "Pname": "ProductY", "Pnumber": "2", "ProjDept": { "Dname": "Research", "ProjEmp": [ { "Fname": "Franklin", "Lname": "Wong", }, { "Fname": "John", "Lname": "Smith", }, { "Fname": "Ramesh", "Lname": "Narayan", }, { "Fname": "Joyce", "Lname": "English", }, { "Fname": "Michael", "Lname": "Morgan", }, { "Fname": "Andrea", "Lname": "Sondrini", }, { "Fname": "James", "Lname": "Miller" } ], "ProjEmpWorks": [ { "Hours": "7.5", }, { "Hours": "28" }, { "Hours": "4", }, { "Hours": "45", }, { "Hours": "10" } ] }
{ "_id": "ObjectID('5f2a6724485ae1475031acd'", "Pname": "ProductZ", "Pnumber": "3", "ProjDept": { "Dname": "Research", "ProjEmp": [ { "Fname": "Franklin", "Lname": "Wong", }, { "Fname": "John", "Lname": "Smith", }, { "Fname": "Ramesh", "Lname": "Narayan", }, { "Fname": "Joyce", "Lname": "English", }, { "Fname": "Michael", "Lname": "Morgan", }, { "Fname": "Andrea", "Lname": "Sondrini", }, { "Fname": "James", "Lname": "Miller" } ], "ProjEmpWorks": [ { "Hours": "48", }, { "Hours": "18", }, { "Hours": "4", }, { "Hours": "25", }, { "Hours": "35" } ] }
{ "_id": "ObjectID('5f2a6724485ae1475031acdd)", "Pname": "Computerization", "Pnumber": "18", "ProjDept": { "Dname": "Administration", "ProjEmp": [ { "Fname": "Jennifer", "Lname": "Wallace", }, { "Fname": "Alicia", "Lname": "Zelaya", }, { "Fname": "Ahmad", "Lname": "Jabbar", }, { "Fname": "Wilson", "Lname": "Holmes", }, { "Fname": "Cameron", "Lname": "Thirteen", }, { "Fname": "Richard", "Lname": "Koelbel" } ], "ProjEmpWorks": [ { "Hours": "18", }, { "Hours": "19", }, { "Hours": "35", }, { "Hours": "4", }, { "Hours": "15", }, { "Hours": "5", }, { "Hours": "4", }, { "Hours": "10" } ] }
{ "_id": "ObjectID('5f2a6724485ae1475031acde)", "Pname": "Reorganization", "Pnumber": "28", "ProjDept": { "Dname": "Headquarters", "ProjEmp": [ { "Fname": "James", "Lname": "Borg", }, { "Fname": "Disha", "Lname": "Carpenter" } ], "ProjEmpWorks": [ { "Hours": "18", }, { "Hours": "15", }, { "Hours": "5", }, { "Hours": "4", }, { "Hours": "10" } ] }
{ "_id": "ObjectID('5f2a6724485ae1475031aced)", "Pname": "NewBenefits", "Pnumber": "38", "ProjDept": { "Dname": "Administration", "ProjEmp": [ { "Fname": "Jennifer", "Lname": "Wallace", }, { "Fname": "Alicia", "Lname": "Zelaya", }, { "Fname": "Ahmad", "Lname": "Jabbar", }, { "Fname": "Wilson", "Lname": "Holmes", }, { "Fname": "Cameron", "Lname": "Thirteen", }, { "Fname": "Richard", "Lname": "Koelbel" } ], "ProjEmpWorks": [ { "Hours": "38", }, { "Hours": "5", }, { "Hours": "28", }, { "Hours": "4", }, { "Hours": "25" } ] }
{ "_id": "ObjectID('5f2a6724485ae1475031acee)", "Pname": "OperatingSystem", "Pnumber": "61", "ProjDept": { "Dname": "Software", "ProjEmp": [ { "Fname": "Jared", "Lname": "James", }, { "Fname": "Jon", "Lname": "Jones", }, { "Fname": "Justin", "Lname": "Mark", }, { "Fname": "Brad", "Lname": "Knight", }, { "Fname": "Kim", "Lname": "Grace", }, { "Fname": "Jeff", "Lname": "Chase", }, { "Fname": "Randita", "Lname": "Ball", }, { "Fname": "John", "Lname": "Ed", }, { "Fname": "Jose", "Lname": "Barbara", }, { "Fname": "Penny", "Lname": "Moewitz", }, { "Fname": "Debra", "Lname": "Hall", }, { "Fname": "Jake", "Lname": "Sheen", }, { "Fname": "Cindy", "Lname": "Burklow", }, { "Fname": "Zach", "Lname": "Geller", }, { "Fname": "Alex", "Lname": "Yu", }, { "Fname": "Christina", "Lname": "Hisel", }, { "ProjEmpWorks": [ { "Hours": "40", }, { "Hours": "40", }, { "Hours": "48", }, { "Hours": "48", }, { "Hours": "48", }, { "Hours": "48", }, { "Hours": "48", }, { "Hours": "48", }, { "Hours": "48", }, { "Hours": "38" }, { "Hours": "4", }, { "Hours": "4", }, { "Hours": "4" } ] }
{ "_id": "ObjectID('5f2a6724485ae1475031acef)", "Pname": "DatabaseSystems", "Pnumber": "62", "ProjDept": { "Dname": "Software", "ProjEmp": [ { "Fname": "Jared", "Lname": "James", }, { "Fname": "Jon", "Lname": "Jones", }, { "Fname": "Justin", "Lname": "Mark", }, { "Fname": "Brad", "Lname": "Knight", }, { "Fname": "Kim", "Lname": "Grace", }, { "Fname": "Jeff", "Lname": "Chase", }, { "Fname": "Randita", "Lname": "Ball", }, { "Fname": "John", "Lname": "Ed", }, { "Fname": "Jose", "Lname": "Barbara", }, { "Fname": "Penny", "Lname": "Moewitz", }, { "Fname": "Debra", "Lname": "Hall", }, { "Fname": "Jake", "Lname": "Sheen", }, { "Fname": "Cindy", "Lname": "Burklow", }, { "Fname": "Zach", "Lname": "Geller", }, { "Fname": "Alex", "Lname": "Yu", }, { "Fname": "Christina", "Lname": "Hisel", }, { "ProjEmpWorks": [ { "Hours": "28", }, { "Hours": "40", }, { "Hours": "48", }, { "Hours": "48", }, { "Hours": "48", }, { "Hours": "48", }, { "Hours": "48", }, { "Hours": "48", }, { "Hours": "48", }, { "Hours": "18", }, { "Hours": "4", }, { "Hours": "25" } ] }
{ "_id": "ObjectID('5f2a6724485ae1475031acea)", "Pname": "Middleware", "Pnumber": "63", "ProjDept": { "Dname": "Software", "ProjEmp": [ { "Fname": "Jared", "Lname": "James", }, { "Fname": "Jon", "Lname": "Jones", }, { "Fname": "Justin", "Lname": "Mark", }, { "Fname": "Brad", "Lname": "Knight", }, { "Fname": "Kim", "Lname": "Grace", }, { "Fname": "Jeff", "Lname": "Chase", }, { "Fname": "Randita", "Lname": "Ball", }, { "Fname": "John", "Lname": "Ed", }, { "Fname": "Jose", "Lname": "Barbara", }, { "Fname": "Penny", "Lname": "Moewitz", }, { "Fname": "Debra", "Lname": "Hall", }, { "Fname": "Jake", "Lname": "Sheen", }, { "Fname": "Cindy", "Lname": "Burklow", }, { "Fname": "Zach", "Lname": "Geller", }, { "Fname": "Alex", "Lname": "Yu", }, { "Fname": "Christina", "Lname": "Hisel", }, { "ProjEmpWorks": [ { "Hours": "40", }, { "Hours": "40", }, { "Hours": "48", }, { "Hours": "48", }, { "Hours": "48", }, { "Hours": "48", }, { "Hours": "48", }, { "Hours": "48", }, { "Hours": "48", }, { "Hours": "18", }, { "Hours": "4", }, { "Hours": "25" } ] }
```

*****UPDATE:*****

```
db.ProjectFinal.update(
```

```
{"Pnumber" : "1000" },
```

```
{ $set: { "Hours" : "100" } });
```

OUTPUT:


```
Command Prompt - mongo
> db.ProjectFinal.update(
... {"Pnumber" : "1000"},
... {$set: { "Hours" : "100"}});
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
>
```

*****DELETE:*****

```
db.ProjectFinal.remove({"Pnumber":"1000"})
```

OUTPUT:

```
Command Prompt - mongo
> db.ProjectFinal.remove({"Pnumber":"1000"})
WriteResult({ "nRemoved" : 1 })
>
```

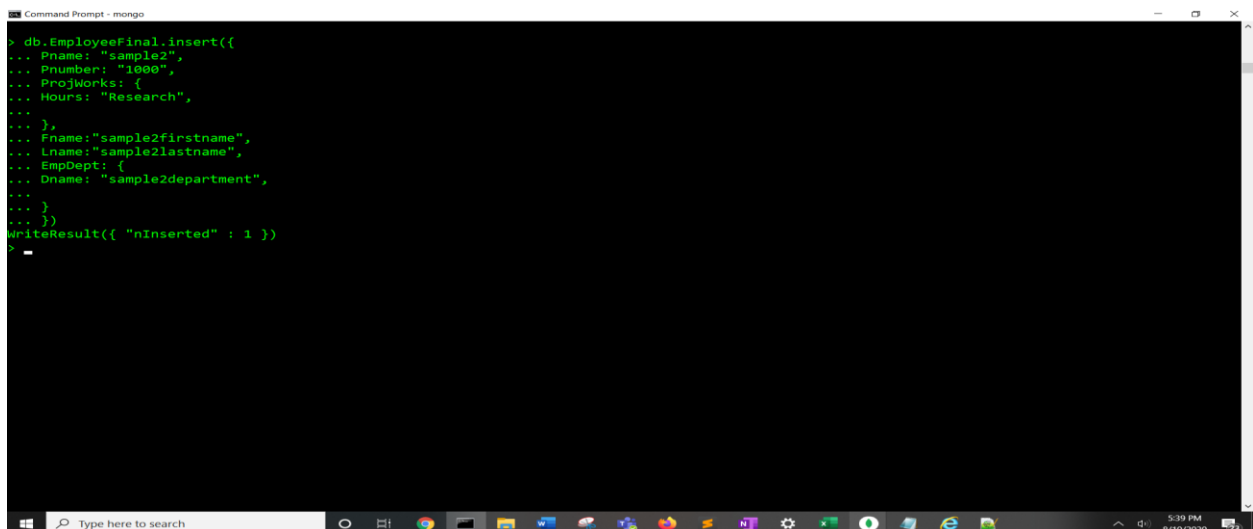
2.CRUD operations for Employee:

*****INSERTING A DOCUMENT INTO A COLLECTION:*****

*****CREATE:*****

```
db.EmployeeFinal.insert({
    Pname: "sample2",
    Pnumber: "1000",
    ProjWorks: {
        Hours: "Research",
    },
    Fname:"sample2firstname",
    Lname:"sample2lastname",
    EmpDept: {
        Dname: "sample2department",
    }
})
```

OUTPUT:



```
Command Prompt - mongo
> db.EmployeeFinal.insert({
... Pname: "sample2",
... Pnumber: "1000",
... ProjWorks: {
... Hours: "Research",
... },
... Fname: "sample2firstname",
... Lname: "sample2lastname",
... EmpDept: {
... Dname: "sample2department",
... },
... })
WriteResult({ "nInserted" : 1 })
>
```

*******READ:*******

```
db.EmployeeFinal.find()
```

OUTPUT:

```
Command Prompt - mongo
> db.EmployeeFinal.find()
{ "_id" : ObjectId("5f2a06f5485ae1475031ac93"), "Pname" : "Reorganization", "Pnumber" : "20", "ProjWorks" : [ { "Hours" : "10" }, { "Hours" : "15" }, { "Hours" : "5" }, { "Hours" : "4" }, { "Hours" : "10" } ], "Fname" : "James", "Lname" : " Borg", "EmpDept" : { "Dname" : "Headquarters" } }
{ "_id" : ObjectId("5f2a06f5485ae1475031ac94"), "Pname" : "ProductX", "Pnumber" : "1", "ProjWorks" : [ { "Hours" : "32.5" }, { "Hours" : "20" }, { "Hours" : "2" }, { "Hours" : "25" } ], "Fname" : "Franklin", "Lname" : " Wong", "EmpDept" : { "Dname" : "Research" } }
{ "_id" : ObjectId("5f2a06f5485ae1475031ac95"), "Pname" : "Computerization", "Pnumber" : "10", "ProjWorks" : [ { "Hours" : "10" }, { "Hours" : "10" }, { "Hours" : "35" }, { "Hours" : "4" }, { "Hours" : "25" }, { "Hours" : "35" } ], "Fname" : "Jennifer", "Lname" : " Wallace", "EmpDept" : { "Dname" : "Administration" } }
{ "_id" : ObjectId("5f2a06f5485ae1475031ac96"), "Pname" : "OperatingSystem", "Pnumber" : "61", "ProjWorks" : [ { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "30" }, { "Hours" : "4" }, { "Hours" : "4" } ], "Fname" : "Jared", "Lname" : " James", "EmpDept" : { "Dname" : "Software" } }
{ "_id" : ObjectId("5f2a06f5485ae1475031ac97"), "Pname" : "InkjetPrinters", "Pnumber" : "91", "ProjWorks" : [ { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "2" }, { "Hours" : "10" } ], "Fname" : "Alex", "Lname" : " Freed", "EmpDept" : { "Dname" : "Hardware" } }
{ "_id" : ObjectId("5f2a06f5485ae1475031ac98"), "Pname" : "John", "Lname" : " James", "EmpDept" : { "Dname" : "Sales" } }
{ "_id" : ObjectId("5f2a06f5485ae1475031ac99"), "Pname" : "ProductX", "Pnumber" : "1", "ProjWorks" : [ { "Hours" : "32.5" }, { "Hours" : "20" }, { "Hours" : "2" }, { "Hours" : "25" } ], "Fname" : "John", "Lname" : " Smith", "EmpDept" : { "Dname" : "Research" } }
{ "_id" : ObjectId("5f2a06f5485ae1475031ac9a"), "Pname" : "Computerization", "Pnumber" : "10", "ProjWorks" : [ { "Hours" : "10" }, { "Hours" : "10" }, { "Hours" : "35" }, { "Hours" : "4" }, { "Hours" : "25" }, { "Hours" : "35" } ], "Fname" : "Alicia", "Lname" : " Zelaya", "EmpDept" : { "Dname" : "Administration" } }
{ "_id" : ObjectId("5f2a06f5485ae1475031ac9b"), "Pname" : "ProductX", "Pnumber" : "1", "ProjWorks" : [ { "Hours" : "32.5" }, { "Hours" : "20" }, { "Hours" : "2" }, { "Hours" : "25" } ], "Fname" : "Ramesh", "Lname" : " Narayan", "EmpDept" : { "Dname" : "Research" } }
{ "_id" : ObjectId("5f2a06f5485ae1475031ac9c"), "Pname" : "ProductX", "Pnumber" : "1", "ProjWorks" : [ { "Hours" : "32.5" }, { "Hours" : "20" }, { "Hours" : "2" }, { "Hours" : "25" } ], "Fname" : "Joyce", "Lname" : " English", "EmpDept" : { "Dname" : "Research" } }
{ "_id" : ObjectId("5f2a06f5485ae1475031ac9d"), "Pname" : "Computerization", "Pnumber" : "10", "ProjWorks" : [ { "Hours" : "10" }, { "Hours" : "10" }, { "Hours" : "35" }, { "Hours" : "4" }, { "Hours" : "25" }, { "Hours" : "35" } ], "Fname" : "Ahmad", "Lname" : " Jabbar", "EmpDept" : { "Dname" : "Administration" } }
{ "_id" : ObjectId("5f2a06f5485ae1475031ac9e"), "Pname" : "OperatingSystem", "Pnumber" : "61", "ProjWorks" : [ { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "30" }, { "Hours" : "4" }, { "Hours" : "4" } ], "Fname" : "Jon", "Lname" : " Jones", "EmpDept" : { "Dname" : "Software" } }
{ "_id" : ObjectId("5f2a06f5485ae1475031ac9f"), "Pname" : "OperatingSystem", "Pnumber" : "61", "ProjWorks" : [ { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "30" }, { "Hours" : "4" }, { "Hours" : "4" } ], "Fname" : "Justin", "Lname" : " Mark", "EmpDept" : { "Dname" : "Software" } }
{ "_id" : ObjectId("5f2a06f5485ae1475031aca0"), "Pname" : "OperatingSystem", "Pnumber" : "61", "ProjWorks" : [ { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "40" }, { "Hours" : "30" }, { "Hours" : "4" }, { "Hours" : "4" } ], "Fname" : "Justin", "Lname" : " Mark", "EmpDept" : { "Dname" : "Software" } }
```

*******UPDATE:*******

```
db.EmployeeFinal.update(
{"Pnumber" : "1000" },
{$set: { "Hours" : "100" }};
```

OUTPUT:

```
Command Prompt - mongo
> db.EmployeeFinal.update(
... {"Pnumber" : "1000" },
... {$set: { "Hours" : "100"}});
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
>
```

*****DELETE:*****

```
db.EmployeeFinal.remove({"Pnumber":"1000"})
```

OUTPUT:

```
Command Prompt - mongo
> db.EmployeeFinal.remove({"Pnumber":"1000"})
WriteResult({ "nRemoved" : 1 })
>
```