

// DBMSL B5 – 31139 (Durvesh)

// Design and implement any 5 query using MongoDB

// Queries

> use doorways

switched to db doorways

>

```
db.teachers.insertOne({name:"Paresh",qualification:"MTech",deptno:1,deptname:"computer",design
ation:"assistant
professor",experience:12,salary:{basic:20000,TA:1000,DA:1000,HRA:2000},date_of_joining:new
Date("2008-06-01"),areaOfExpertise:"DBMS"})
```

```
{
```

```
  "acknowledged" : true,
```

```
  "insertedId" : ObjectId("5fa2562cb06734c11a24749b")
```

```
}
```

>

```
db.teachers.insertOne({name:"Sarvadnya",qualification:"PhD",deptno:1,deptname:"computer",desi
gnation:"HOD",experience:20,salary:{basic:75000,TA:1000,DA:1000,HRA:2000},date_of_joining:new
Date("2000-06-01"),areaOfExpertise:"CN"})
```

```
{
```

```
  "acknowledged" : true,
```

```
  "insertedId" : ObjectId("5fa25632b06734c11a24749c")
```

```
}
```

>

```
db.teachers.insertOne({name:"Nilesh",qualification:"MTech",deptno:1,deptname:"computer",desig
nation:"assistant
professor",experience:10,salary:{basic:18000,TA:1000,DA:1000,HRA:2000},date_of_joining:new
Date("2010-06-01"),areaOfExpertise:"DBMS"})
```

```
{
```

```
  "acknowledged" : true,
```

```
  "insertedId" : ObjectId("5fa25639b06734c11a24749d")
```

```
}
```

>

```
db.teachers.insertOne({name:"Digvijay",qualification:"PhD",deptno:2,deptname:"IT",designation:"H
```

```

OD",experience:18,salary:{basic:75000,TA:1000,DA:1000,HRA:2000},date_of_joining:new
Date("2002-06-01"),areaOfExpertise:"ML"}}

{
    "acknowledged" : true,
    "insertedId" : ObjectId("5fa25640b06734c11a24749e")
}

>
db.teachers.insertOne({name:"Dhananjay",qualification:"ME",deptno:2,deptname:"IT",designation:"
assistant
professor",experience:15,salary:{basic:40000,TA:1000,DA:1000,HRA:2000},date_of_joining:new
Date("2005-06-01"),areaOfExpertise:"AI"}}

{
    "acknowledged" : true,
    "insertedId" : ObjectId("5fa25646b06734c11a24749f")
}

>
db.teachers.insertOne({name:"Dipesh",qualification:"ME",deptno:2,deptname:"IT",designation:"assi
stant
professor",experience:13,salary:{basic:60000,TA:1000,DA:1000,HRA:2000},date_of_joining:new
Date("2007-06-01"),areaOfExpertise:"ML"}}

{
    "acknowledged" : true,
    "insertedId" : ObjectId("5fa2564bb06734c11a2474a0")
}

>
db.teachers.insertOne({name:"Ram",qualification:"PhD",deptno:3,deptname:"ENTC",designation:"H
OD",experience:22,salary:{basic:80000,TA:1000,DA:1000,HRA:2000},date_of_joining:new
Date("1998-06-01"),areaOfExpertise:"Communication"}}

{
    "acknowledged" : true,
    "insertedId" : ObjectId("5fa25650b06734c11a2474a1")
}

>
db.teachers.insertOne({name:"Sham",qualification:"ME",deptno:3,deptname:"ENTC",designation:"a
ssistant
professor",experience:5,salary:{basic:25000,TA:1000,DA:1000,HRA:2000},date_of_joining:new
Date("2015-06-01"),areaOfExpertise:"Digital electronics"}}

```

```

{
    "acknowledged" : true,
    "insertedId" : ObjectId("5fa25656b06734c11a2474a2")
}
>
db.teachers.insertOne({name:"Anil",qualification:"ME",deptno:3,deptname:"ENTC",designation:"assistant professor",experience:8,salary:{basic:40000,TA:1000,DA:1000,HRA:2000},date_of_joining:new Date("2012-06-01"),areaOfExpertise:"Digital electronics"})
{
    "acknowledged" : true,
    "insertedId" : ObjectId("5fa2565cb06734c11a2474a3")
}
>
>
>
>
>
>
> db.teachers.find()
{ "_id" : ObjectId("5fa2562cb06734c11a24749b"), "name" : "Paresh", "qualification" : "MTech", "deptno" : 1, "deptname" : "computer", "designation" : "assistant professor", "experience" : 12, "salary" : { "basic" : 20000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2008-06-01T00:00:00Z"), "areaOfExpertise" : "DBMS" }
{ "_id" : ObjectId("5fa25632b06734c11a24749c"), "name" : "Sarvadnya", "qualification" : "PhD", "deptno" : 1, "deptname" : "computer", "designation" : "HOD", "experience" : 20, "salary" : { "basic" : 75000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2000-06-01T00:00:00Z"), "areaOfExpertise" : "CN" }
{ "_id" : ObjectId("5fa25639b06734c11a24749d"), "name" : "Nilesh", "qualification" : "MTech", "deptno" : 1, "deptname" : "computer", "designation" : "assistant professor", "experience" : 10, "salary" : { "basic" : 18000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2010-06-01T00:00:00Z"), "areaOfExpertise" : "DBMS" }
{ "_id" : ObjectId("5fa25640b06734c11a24749e"), "name" : "Digvijay", "qualification" : "PhD", "deptno" : 2, "deptname" : "IT", "designation" : "HOD", "experience" : 18, "salary" : { "basic" : 75000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2002-06-01T00:00:00Z"), "areaOfExpertise" : "ML" }
{ "_id" : ObjectId("5fa25646b06734c11a24749f"), "name" : "Dhananjay", "qualification" : "ME", "deptno" : 2, "deptname" : "IT", "designation" : "assistant professor", "experience" : 15, "salary" : {

```

```
"basic" : 40000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2005-06-01T00:00:00Z"), "areaOfExpertise" : "AI" }
```

```
{ "_id" : ObjectId("5fa2564bb06734c11a2474a0"), "name" : "Dipesh", "qualification" : "ME", "deptno" : 2, "deptname" : "IT", "designation" : "assistant professor", "experience" : 13, "salary" : { "basic" : 60000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2007-06-01T00:00:00Z"), "areaOfExpertise" : "ML" }
```

```
{ "_id" : ObjectId("5fa25650b06734c11a2474a1"), "name" : "Ram", "qualification" : "PhD", "deptno" : 3, "deptname" : "ENTC", "designation" : "HOD", "experience" : 22, "salary" : { "basic" : 80000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("1998-06-01T00:00:00Z"), "areaOfExpertise" : "Communication" }
```

```
{ "_id" : ObjectId("5fa25656b06734c11a2474a2"), "name" : "Sham", "qualification" : "ME", "deptno" : 3, "deptname" : "ENTC", "designation" : "assistant professor", "experience" : 5, "salary" : { "basic" : 25000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2015-06-01T00:00:00Z"), "areaOfExpertise" : "Digital electronics" }
```

```
{ "_id" : ObjectId("5fa2565cb06734c11a2474a3"), "name" : "Anil", "qualification" : "ME", "deptno" : 3, "deptname" : "ENTC", "designation" : "assistant professor", "experience" : 8, "salary" : { "basic" : 40000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2012-06-01T00:00:00Z"), "areaOfExpertise" : "Digital electronics" }
```

```
> db.teachers.find({deptname:"computer"}).pretty()
```

```
{
  "_id" : ObjectId("5fa2562cb06734c11a24749b"),
  "name" : "Paresh",
  "qualification" : "MTech",
  "deptno" : 1,
  "deptname" : "computer",
  "designation" : "assistant professor",
  "experience" : 12,
  "salary" : {
    "basic" : 20000,
    "TA" : 1000,
    "DA" : 1000,
    "HRA" : 2000
  },
  "date_of_joining" : ISODate("2008-06-01T00:00:00Z"),
  "areaOfExpertise" : "DBMS"
}
```

```
{
  "_id" : ObjectId("5fa25632b06734c11a24749c"),
  "name" : "Sarvadnya",
  "qualification" : "PhD",
  "deptno" : 1,
  "deptname" : "computer",
  "designation" : "HOD",
  "experience" : 20,
  "salary" : {
    "basic" : 75000,
    "TA" : 1000,
    "DA" : 1000,
    "HRA" : 2000
  },
  "date_of_joining" : ISODate("2000-06-01T00:00:00Z"),
  "areaOfExpertise" : "CN"
}
```

```
{
  "_id" : ObjectId("5fa25639b06734c11a24749d"),
  "name" : "Nilesh",
  "qualification" : "MTech",
  "deptno" : 1,
  "deptname" : "computer",
  "designation" : "assistant professor",
  "experience" : 10,
  "salary" : {
    "basic" : 18000,
    "TA" : 1000,
    "DA" : 1000,
    "HRA" : 2000
  },
}
```

```

    "date_of_joining" : ISODate("2010-06-01T00:00:00Z"),
    "areaOfExpertise" : "DBMS"
  }
>
>
>
>
>
>
>
> db.teachers.find({deptname:{$in:["computer","IT","ENTC"]}})
{ "_id" : ObjectId("5fa2562cb06734c11a24749b"), "name" : "Paresh", "qualification" : "MTech",
"deptno" : 1, "deptname" : "computer", "designation" : "assistant professor", "experience" : 12,
"salary" : { "basic" : 20000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" :
ISODate("2008-06-01T00:00:00Z"), "areaOfExpertise" : "DBMS" }

{ "_id" : ObjectId("5fa25632b06734c11a24749c"), "name" : "Sarvadnya", "qualification" : "PhD",
"deptno" : 1, "deptname" : "computer", "designation" : "HOD", "experience" : 20, "salary" : { "basic"
: 75000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2000-06-
01T00:00:00Z"), "areaOfExpertise" : "CN" }

{ "_id" : ObjectId("5fa25639b06734c11a24749d"), "name" : "Nilesh", "qualification" : "MTech",
"deptno" : 1, "deptname" : "computer", "designation" : "assistant professor", "experience" : 10,
"salary" : { "basic" : 18000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" :
ISODate("2010-06-01T00:00:00Z"), "areaOfExpertise" : "DBMS" }

{ "_id" : ObjectId("5fa25640b06734c11a24749e"), "name" : "Digvijay", "qualification" : "PhD",
"deptno" : 2, "deptname" : "IT", "designation" : "HOD", "experience" : 18, "salary" : { "basic" : 75000,
"TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2002-06-01T00:00:00Z"),
"areaOfExpertise" : "ML" }

{ "_id" : ObjectId("5fa25646b06734c11a24749f"), "name" : "Dhananjay", "qualification" : "ME",
"deptno" : 2, "deptname" : "IT", "designation" : "assistant professor", "experience" : 15, "salary" : {
"basic" : 40000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2005-06-
01T00:00:00Z"), "areaOfExpertise" : "AI" }

{ "_id" : ObjectId("5fa2564bb06734c11a2474a0"), "name" : "Dipesh", "qualification" : "ME",
"deptno" : 2, "deptname" : "IT", "designation" : "assistant professor", "experience" : 13, "salary" : {
"basic" : 60000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2007-06-
01T00:00:00Z"), "areaOfExpertise" : "ML" }

{ "_id" : ObjectId("5fa25650b06734c11a2474a1"), "name" : "Ram", "qualification" : "PhD", "deptno"
: 3, "deptname" : "ENTC", "designation" : "HOD", "experience" : 22, "salary" : { "basic" : 80000, "TA" :
1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("1998-06-01T00:00:00Z"),
"areaOfExpertise" : "Communication" }

```

```
{ "_id" : ObjectId("5fa25656b06734c11a2474a2"), "name" : "Sham", "qualification" : "ME", "deptno" : 3, "deptname" : "ENTC", "designation" : "assistant professor", "experience" : 5, "salary" : { "basic" : 25000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2015-06-01T00:00:00Z"), "areaOfExpertise" : "Digital electronics" }
```

```
{ "_id" : ObjectId("5fa2565cb06734c11a2474a3"), "name" : "Anil", "qualification" : "ME", "deptno" : 3, "deptname" : "ENTC", "designation" : "assistant professor", "experience" : 8, "salary" : { "basic" : 40000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2012-06-01T00:00:00Z"), "areaOfExpertise" : "Digital electronics" }
```

>

>

>

>

>

>

```
db.teachers.find({$and:({"salary.basic":{$gte:70000}},{"salary.basic":{$lte:100000}},{"deptname":{"$in:["computer","IT","ENTC"]}}}).pretty()
```

```
{
  "_id" : ObjectId("5fa25632b06734c11a24749c"),
  "name" : "Sarvadnya",
  "qualification" : "PhD",
  "deptno" : 1,
  "deptname" : "computer",
  "designation" : "HOD",
  "experience" : 20,
  "salary" : {
    "basic" : 75000,
    "TA" : 1000,
    "DA" : 1000,
    "HRA" : 2000
  },
  "date_of_joining" : ISODate("2000-06-01T00:00:00Z"),
  "areaOfExpertise" : "CN"
}
```

```
{
```

```
"_id" : ObjectId("5fa25640b06734c11a24749e"),
"name" : "Digvijay",
"qualification" : "PhD",
"deptno" : 2,
"deptname" : "IT",
"designation" : "HOD",
"experience" : 18,
"salary" : {
    "basic" : 75000,
    "TA" : 1000,
    "DA" : 1000,
    "HRA" : 2000
},
"date_of_joining" : ISODate("2002-06-01T00:00:00Z"),
"areaOfExpertise" : "ML"
}
{
    "_id" : ObjectId("5fa25650b06734c11a2474a1"),
    "name" : "Ram",
    "qualification" : "PhD",
    "deptno" : 3,
    "deptname" : "ENTC",
    "designation" : "HOD",
    "experience" : 22,
    "salary" : {
        "basic" : 80000,
        "TA" : 1000,
        "DA" : 1000,
        "HRA" : 2000
    },
    "date_of_joining" : ISODate("1998-06-01T00:00:00Z"),
```



```

    "areaOfExpertise" : "Communication"
  }
>
>
>
>
>
> db.teachers.update({name:"Digvijay"},{$set:{experience:10}},{upsert:true})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.teachers.find({name:"Digvijay"}).pretty()
{
  "_id" : ObjectId("5fa25640b06734c11a24749e"),
  "name" : "Digvijay",
  "qualification" : "PhD",
  "deptno" : 2,
  "deptname" : "IT",
  "designation" : "HOD",
  "experience" : 10,
  "salary" : {
    "basic" : 75000,
    "TA" : 1000,
    "DA" : 1000,
    "HRA" : 2000
  },
  "date_of_joining" : ISODate("2002-06-01T00:00:00Z"),
  "areaOfExpertise" : "ML"
}
>
>
>
>
>
> db.teachers.find({}, {name:1, experience:1}).sort({experience:-1}).pretty()

```

```
{
  "_id" : ObjectId("5fa25650b06734c11a2474a1"),
  "name" : "Ram",
  "experience" : 22
}
{
  "_id" : ObjectId("5fa25632b06734c11a24749c"),
  "name" : "Sarvadnya",
  "experience" : 20
}
{
  "_id" : ObjectId("5fa25646b06734c11a24749f"),
  "name" : "Dhananjay",
  "experience" : 15
}
{
  "_id" : ObjectId("5fa2564bb06734c11a2474a0"),
  "name" : "Dipesh",
  "experience" : 13
}
{
  "_id" : ObjectId("5fa2562cb06734c11a24749b"),
  "name" : "Paresh",
  "experience" : 12
}
{
  "_id" : ObjectId("5fa25639b06734c11a24749d"),
  "name" : "Nilesh",
  "experience" : 10
}
{
```

```

    "_id" : ObjectId("5fa25640b06734c11a24749e"),
    "name" : "Digvijay",
    "experience" : 10
  }
  {
    "_id" : ObjectId("5fa2565cb06734c11a2474a3"),
    "name" : "Anil",
    "experience" : 8
  }
  {
    "_id" : ObjectId("5fa25656b06734c11a2474a2"),
    "name" : "Sham",
    "experience" : 5
  }
>
>
>
>
>
>
> db.teachers.save({_id:
ObjectId("5fa161eec75635cd6451dbc0"),name:"Sundar",qualification:"MTech",deptno:1,deptname:
"computer",designation:"assistant
professor",experience:14,salary:{basic:45000,TA:1000,DA:1000,HRA:2000},date_of_joining:new
Date("2006-06-01"),areaOfExpertise:"DBMS"})
WriteResult({
  "nMatched" : 0,
  "nUpserted" : 1,
  "nModified" : 0,
  "_id" : ObjectId("5fa161eec75635cd6451dbc0")
})
> db.teachers.find({name:"Sundar"}).pretty()
{

```

```

    "_id" : ObjectId("5fa161eec75635cd6451dbc0"),
    "name" : "Sundar",
    "qualification" : "MTech",
    "deptno" : 1,
    "deptname" : "computer",
    "designation" : "assistant professor",
    "experience" : 14,
    "salary" : {
        "basic" : 45000,
        "TA" : 1000,
        "DA" : 1000,
        "HRA" : 2000
    },
    "date_of_joining" : ISODate("2006-06-01T00:00:00Z"),
    "areaOfExpertise" : "DBMS"
}

>
db.teachers.save({_id:ObjectId("5fa161eec75635cd6451dbc0"),name:"Sham",qualification:"ME",deptno:3,deptname:"ENTC",designation:"professor",experience:5,salary:{basic:25000,TA:1000,DA:1000,HRA:2000},date_of_joining:new Date("2015-06-01"),areaOfExpertise:"Digital electronics",appointment:"adhoc"})

WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

>
>
>
>

> db.teachers.deleteMany({appointment:"adhoc"})

{ "acknowledged" : true, "deletedCount" : 1 }

> db.teachers.find()

{ "_id" : ObjectId("5fa2562cb06734c11a24749b"), "name" : "Paresh", "qualification" : "MTech", "deptno" : 1, "deptname" : "computer", "designation" : "assistant professor", "experience" : 12, "salary" : { "basic" : 20000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2008-06-01T00:00:00Z"), "areaOfExpertise" : "DBMS" }

```

```
{ "_id" : ObjectId("5fa25632b06734c11a24749c"), "name" : "Sarvadnya", "qualification" : "PhD",  
"deptno" : 1, "deptname" : "computer", "designation" : "HOD", "experience" : 20, "salary" : { "basic"  
: 75000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2000-06-  
01T00:00:00Z"), "areaOfExpertise" : "CN" }
```

```
{ "_id" : ObjectId("5fa25639b06734c11a24749d"), "name" : "Nilesh", "qualification" : "MTech",  
"deptno" : 1, "deptname" : "computer", "designation" : "assistant professor", "experience" : 10,  
"salary" : { "basic" : 18000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" :  
ISODate("2010-06-01T00:00:00Z"), "areaOfExpertise" : "DBMS" }
```

```
{ "_id" : ObjectId("5fa25640b06734c11a24749e"), "name" : "Digvijay", "qualification" : "PhD",  
"deptno" : 2, "deptname" : "IT", "designation" : "HOD", "experience" : 10, "salary" : { "basic" : 75000,  
"TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2002-06-01T00:00:00Z"),  
"areaOfExpertise" : "ML" }
```

```
{ "_id" : ObjectId("5fa25646b06734c11a24749f"), "name" : "Dhananjay", "qualification" : "ME",  
"deptno" : 2, "deptname" : "IT", "designation" : "assistant professor", "experience" : 15, "salary" : {  
"basic" : 40000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2005-06-  
01T00:00:00Z"), "areaOfExpertise" : "AI" }
```

```
{ "_id" : ObjectId("5fa2564bb06734c11a2474a0"), "name" : "Dipesh", "qualification" : "ME",  
"deptno" : 2, "deptname" : "IT", "designation" : "assistant professor", "experience" : 13, "salary" : {  
"basic" : 60000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2007-06-  
01T00:00:00Z"), "areaOfExpertise" : "ML" }
```

```
{ "_id" : ObjectId("5fa25650b06734c11a2474a1"), "name" : "Ram", "qualification" : "PhD", "deptno"  
: 3, "deptname" : "ENTC", "designation" : "HOD", "experience" : 22, "salary" : { "basic" : 80000, "TA" :  
1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("1998-06-01T00:00:00Z"),  
"areaOfExpertise" : "Communication" }
```

```
{ "_id" : ObjectId("5fa25656b06734c11a2474a2"), "name" : "Sham", "qualification" : "ME", "deptno"  
: 3, "deptname" : "ENTC", "designation" : "assistant professor", "experience" : 5, "salary" : { "basic" :  
25000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2015-06-  
01T00:00:00Z"), "areaOfExpertise" : "Digital electronics" }
```

```
{ "_id" : ObjectId("5fa2565cb06734c11a2474a3"), "name" : "Anil", "qualification" : "ME", "deptno" :  
3, "deptname" : "ENTC", "designation" : "assistant professor", "experience" : 8, "salary" : { "basic" :  
40000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2012-06-  
01T00:00:00Z"), "areaOfExpertise" : "Digital electronics" }
```

>

>

>

>

>

```
> db.teachers.find().sort({experience:1}).limit(3).pretty()
```

```
{
```

```
"_id" : ObjectId("5fa25656b06734c11a2474a2"),
"name" : "Sham",
"qualification" : "ME",
"deptno" : 3,
"deptname" : "ENTC",
"designation" : "assistant professor",
"experience" : 5,
"salary" : {
  "basic" : 25000,
  "TA" : 1000,
  "DA" : 1000,
  "HRA" : 2000
},
"date_of_joining" : ISODate("2015-06-01T00:00:00Z"),
"areaOfExpertise" : "Digital electronics"
}
{
  "_id" : ObjectId("5fa2565cb06734c11a2474a3"),
  "name" : "Anil",
  "qualification" : "ME",
  "deptno" : 3,
  "deptname" : "ENTC",
  "designation" : "assistant professor",
  "experience" : 8,
  "salary" : {
    "basic" : 40000,
    "TA" : 1000,
    "DA" : 1000,
    "HRA" : 2000
  },
  "date_of_joining" : ISODate("2012-06-01T00:00:00Z"),
```

```

    "areaOfExpertise" : "Digital electronics"
  }
  {
    "_id" : ObjectId("5fa25640b06734c11a24749e"),
    "name" : "Digvijay",
    "qualification" : "PhD",
    "deptno" : 2,
    "deptname" : "IT",
    "designation" : "HOD",
    "experience" : 10,
    "salary" : {
      "basic" : 75000,
      "TA" : 1000,
      "DA" : 1000,
      "HRA" : 2000
    },
    "date_of_joining" : ISODate("2002-06-01T00:00:00Z"),
    "areaOfExpertise" : "ML"
  }
>
>
>
>
>
>
>
> db.teachers.find({"designation":"HOD"}).sort({"salary.basic":-1}).pretty()
{
  "_id" : ObjectId("5fa25650b06734c11a2474a1"),
  "name" : "Ram",
  "qualification" : "PhD",
  "deptno" : 3,

```

```
"deptname" : "ENTC",
"designation" : "HOD",
"experience" : 22,
"salary" : {
    "basic" : 80000,
    "TA" : 1000,
    "DA" : 1000,
    "HRA" : 2000
},
"date_of_joining" : ISODate("1998-06-01T00:00:00Z"),
"areaOfExpertise" : "Communication"
}
{
    "_id" : ObjectId("5fa25632b06734c11a24749c"),
    "name" : "Sarvadnya",
    "qualification" : "PhD",
    "deptno" : 1,
    "deptname" : "computer",
    "designation" : "HOD",
    "experience" : 20,
    "salary" : {
        "basic" : 75000,
        "TA" : 1000,
        "DA" : 1000,
        "HRA" : 2000
    },
    "date_of_joining" : ISODate("2000-06-01T00:00:00Z"),
    "areaOfExpertise" : "CN"
}
{
    "_id" : ObjectId("5fa25640b06734c11a24749e"),
```



```

    "name" : "Digvijay",
    "qualification" : "PhD",
    "deptno" : 2,
    "deptname" : "IT",
    "designation" : "HOD",
    "experience" : 10,
    "salary" : {
        "basic" : 75000,
        "TA" : 1000,
        "DA" : 1000,
        "HRA" : 2000
    },
    "date_of_joining" : ISODate("2002-06-01T00:00:00Z"),
    "areaOfExpertise" : "ML"
}
>
>
>
>
>
>
>
> db.teachers.find({}, {name:1, salary:1}).sort({"salary.TA":1})
{ "_id" : ObjectId("5fa2562cb06734c11a24749b"), "name" : "Paresh", "salary" : { "basic" : 20000,
"TA" : 1000, "DA" : 1000, "HRA" : 2000 } }
{ "_id" : ObjectId("5fa25632b06734c11a24749c"), "name" : "Sarvadnya", "salary" : { "basic" : 75000,
"TA" : 1000, "DA" : 1000, "HRA" : 2000 } }
{ "_id" : ObjectId("5fa25639b06734c11a24749d"), "name" : "Nilesh", "salary" : { "basic" : 18000, "TA"
: 1000, "DA" : 1000, "HRA" : 2000 } }
{ "_id" : ObjectId("5fa25640b06734c11a24749e"), "name" : "Digvijay", "salary" : { "basic" : 75000,
"TA" : 1000, "DA" : 1000, "HRA" : 2000 } }
{ "_id" : ObjectId("5fa25646b06734c11a24749f"), "name" : "Dhananjay", "salary" : { "basic" : 40000,
"TA" : 1000, "DA" : 1000, "HRA" : 2000 } }

```

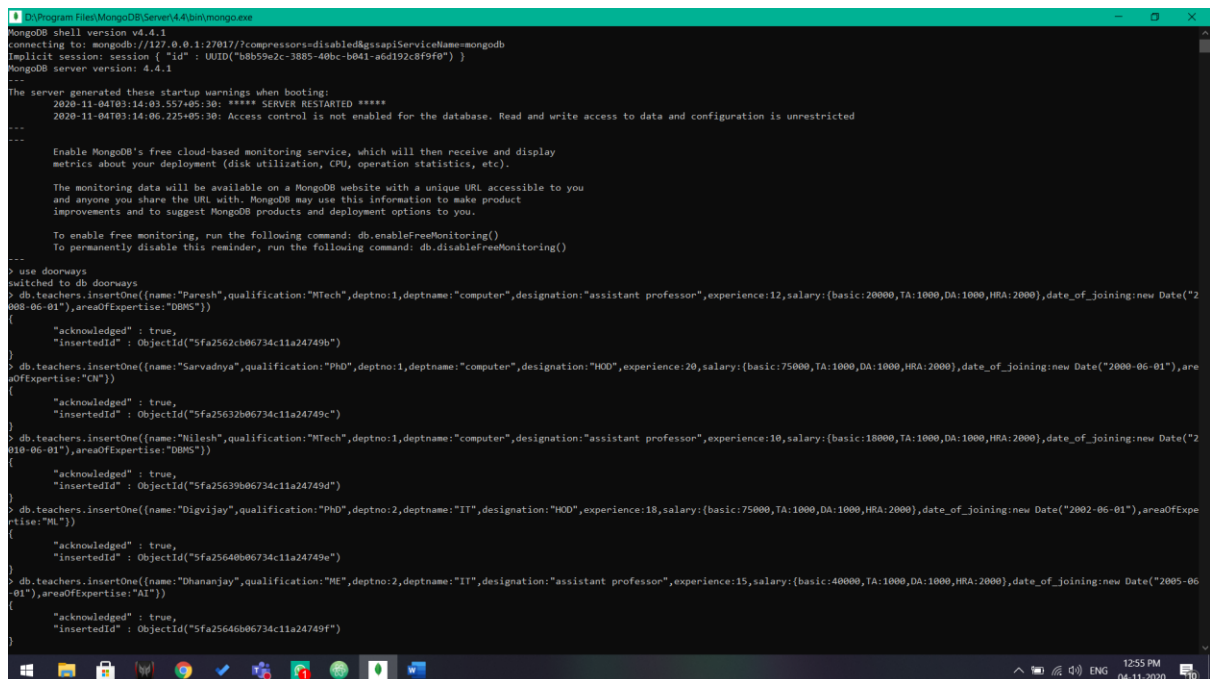
```
{ "_id" : ObjectId("5fa2564bb06734c11a2474a0"), "name" : "Dipesh", "salary" : { "basic" : 60000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 } }
```

```
{ "_id" : ObjectId("5fa25650b06734c11a2474a1"), "name" : "Ram", "salary" : { "basic" : 80000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 } }
```

```
{ "_id" : ObjectId("5fa25656b06734c11a2474a2"), "name" : "Sham", "salary" : { "basic" : 25000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 } }
```

```
{ "_id" : ObjectId("5fa2565cb06734c11a2474a3"), "name" : "Anil", "salary" : { "basic" : 40000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 } }
```

// Outputs:



```

MongoDB shell version v4.4.1
connecting to: mongodb://127.0.0.1:27017/?compressors=disabled&gssapiServiceName=mongodb
implicit session: session { "id" : UUID("b8b59e2c-3885-40bc-b041-a6d192c8f9f0") }
MongoDB server version: 4.4.1

The server generated these startup warnings when booting:
  2020-11-04T03:14:03.557+05:30: ***** SERVER RESTARTED *****
  2020-11-04T03:14:06.225+05:30: 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()
-----

> use doorways
switched to db doorways
> db.teachers.insertOne({name:"Paresh",qualification:"MTech",deptno:1,deptname:"computer",designation:"assistant professor",experience:12,salary:{basic:20000,TA:1000,DA:1000,HRA:2000},date_of_joining:new Date("2000-06-01"),areaOfExpertise:"DBMS"})
{
  "acknowledged" : true,
  "insertedId" : ObjectId("5fa2562cb06734c11a24749b")
}
> db.teachers.insertOne({name:"Sarvadnya",qualification:"PhD",deptno:1,deptname:"computer",designation:"HOD",experience:20,salary:{basic:75000,TA:1000,DA:1000,HRA:2000},date_of_joining:new Date("2000-06-01"),areaOfExpertise:"CN"})
{
  "acknowledged" : true,
  "insertedId" : ObjectId("5fa25632b06734c11a24749c")
}
> db.teachers.insertOne({name:"Nilish",qualification:"MTech",deptno:1,deptname:"computer",designation:"assistant professor",experience:10,salary:{basic:18000,TA:1000,DA:1000,HRA:2000},date_of_joining:new Date("2010-06-01"),areaOfExpertise:"DBMS"})
{
  "acknowledged" : true,
  "insertedId" : ObjectId("5fa25639b06734c11a24749d")
}
> db.teachers.insertOne({name:"Digvijay",qualification:"PhD",deptno:2,deptname:"IT",designation:"HOD",experience:18,salary:{basic:75000,TA:1000,DA:1000,HRA:2000},date_of_joining:new Date("2002-06-01"),areaOfExpertise:"ML"})
{
  "acknowledged" : true,
  "insertedId" : ObjectId("5fa25640b06734c11a24749e")
}
> db.teachers.insertOne({name:"Dhananjay",qualification:"ME",deptno:2,deptname:"IT",designation:"assistant professor",experience:15,salary:{basic:40000,TA:1000,DA:1000,HRA:2000},date_of_joining:new Date("2005-06-01"),areaOfExpertise:"AI"})
{
  "acknowledged" : true,
  "insertedId" : ObjectId("5fa25646b06734c11a24749f")
}
```



```

    "TA" : 1000,
    "DA" : 1000,
    "HRA" : 2000
  },
  "date_of_joining" : ISODate("2000-06-01T00:00:00Z"),
  "areaOfExpertise" : "CN"

  "id" : ObjectId("5fa25639b06734c11a24749d"),
  "name" : "Nilesh",
  "qualification" : "MTech",
  "deptno" : 1,
  "deptname" : "computer",
  "designation" : "assistant professor",
  "experience" : 10,
  "salary" : {
    "basic" : 18000,
    "TA" : 1000,
    "DA" : 1000,
    "HRA" : 2000
  },
  "date_of_joining" : ISODate("2010-06-01T00:00:00Z"),
  "areaOfExpertise" : "DBMS"
}

db.teachers.find({deptname:{$in:["computer","IT","ENTC"]}})
{
  "_id" : ObjectId("5fa2562cb06734c11a24749b"), "name" : "Paresh", "qualification" : "MTech", "deptno" : 1, "deptname" : "computer", "designation" : "assistant professor", "experience" : 12, "salary" : { "basic" : 20000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2008-06-01T00:00:00Z"), "areaOfExpertise" : "DBMS" }
  { "_id" : ObjectId("5fa25632b06734c11a24749c"), "name" : "Sarvadnya", "qualification" : "PHD", "deptno" : 1, "deptname" : "computer", "designation" : "HOD", "experience" : 20, "salary" : { "basic" : 75000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2000-06-01T00:00:00Z"), "areaOfExpertise" : "CN" }
  { "_id" : ObjectId("5fa25639b06734c11a24749d"), "name" : "Nilesh", "qualification" : "MTech", "deptno" : 1, "deptname" : "computer", "designation" : "assistant professor", "experience" : 10, "salary" : { "basic" : 18000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2010-06-01T00:00:00Z"), "areaOfExpertise" : "DBMS" }
  { "_id" : ObjectId("5fa25640b06734c11a24749e"), "name" : "Dilgviyay", "qualification" : "PHD", "deptno" : 2, "deptname" : "IT", "designation" : "HOD", "experience" : 18, "salary" : { "basic" : 75000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2002-06-01T00:00:00Z"), "areaOfExpertise" : "ML" }
  { "_id" : ObjectId("5fa25646b06734c11a24749f"), "name" : "Dhananjay", "qualification" : "ME", "deptno" : 2, "deptname" : "IT", "designation" : "assistant professor", "experience" : 15, "salary" : { "basic" : 40000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2005-06-01T00:00:00Z"), "areaOfExpertise" : "AI" }
  { "_id" : ObjectId("5fa25648b06734c11a2474a0"), "name" : "Dipesh", "qualification" : "ME", "deptno" : 2, "deptname" : "IT", "designation" : "assistant professor", "experience" : 13, "salary" : { "basic" : 60000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2007-06-01T00:00:00Z"), "areaOfExpertise" : "ML" }
  { "_id" : ObjectId("5fa25650b06734c11a2474a1"), "name" : "Ram", "qualification" : "PHD", "deptno" : 3, "deptname" : "ENTC", "designation" : "HOD", "experience" : 22, "salary" : { "basic" : 80000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("1998-06-01T00:00:00Z"), "areaOfExpertise" : "Communication" }
  { "_id" : ObjectId("5fa25654b06734c11a2474a2"), "name" : "Sham", "qualification" : "ME", "deptno" : 3, "deptname" : "ENTC", "designation" : "assistant professor", "experience" : 5, "salary" : { "basic" : 25000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2015-06-01T00:00:00Z"), "areaOfExpertise" : "Digital electronics" }
  { "_id" : ObjectId("5fa2565cb06734c11a2474a3"), "name" : "Anil", "qualification" : "ME", "deptno" : 3, "deptname" : "ENTC", "designation" : "assistant professor", "experience" : 8, "salary" : { "basic" : 40000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 }, "date_of_joining" : ISODate("2012-06-01T00:00:00Z"), "areaOfExpertise" : "Digital electronics" }
}

```

```

db.teachers.find({$and:[{"salary.basic":{$gte:70000}},{"salary.basic":{$lte:100000}},{deptname:{$in:["computer","IT","ENTC"]}}}).pretty()
{
  "_id" : ObjectId("5fa25632b06734c11a24749c"),
  "name" : "Sarvadnya",
  "qualification" : "PHD",
  "deptno" : 1,
  "deptname" : "computer",
  "designation" : "HOD",
  "experience" : 20,
  "salary" : {
    "basic" : 75000,
    "TA" : 1000,
    "DA" : 1000,
    "HRA" : 2000
  },
  "date_of_joining" : ISODate("2000-06-01T00:00:00Z"),
  "areaOfExpertise" : "CN"

  "id" : ObjectId("5fa25640b06734c11a24749e"),
  "name" : "Dilgviyay",
  "qualification" : "PHD",
  "deptno" : 2,
  "deptname" : "IT",
  "designation" : "HOD",
  "experience" : 18,
  "salary" : {
    "basic" : 75000,
    "TA" : 1000,
    "DA" : 1000,
    "HRA" : 2000
  },
  "date_of_joining" : ISODate("2002-06-01T00:00:00Z"),
  "areaOfExpertise" : "ML"

  "id" : ObjectId("5fa25650b06734c11a2474a1"),
  "name" : "Ram",
  "qualification" : "PHD",
  "deptno" : 3,
  "deptname" : "ENTC",
  "designation" : "HOD",
  "experience" : 22,
  "salary" : {
    "basic" : 80000,
    "TA" : 1000,
    "DA" : 1000,
    "HRA" : 2000
  }
}

```

```
D:\Program Files\MongoDB\Server\4.4\bin\mongo.exe
>
> db.teachers.update({name:"Digvijay"},{$set:{experience:18}},{upsert:true})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.teachers.find((name:"Digvijay")).pretty()
{
  "_id" : ObjectId("5fa25640b06734c11a24749e"),
  "name" : "Digvijay",
  "qualification" : "PhD",
  "deptno" : 2,
  "deptname" : "IT",
  "designation" : "HOD",
  "experience" : 18,
  "salary" : {
    "basic" : 75000,
    "TA" : 1000,
    "DA" : 1000,
    "HRA" : 2000
  },
  "date_of_joining" : ISODate("2002-06-01T00:00:00Z"),
  "areaOfExpertise" : "ML"
}
>
> db.teachers.find({},(name:1,experience:1)).sort({experience:-1}).pretty()
{
  "_id" : ObjectId("5fa25650b06734c11a2474a1"),
  "name" : "Ram",
  "experience" : 22
}
{
  "_id" : ObjectId("5fa25632b06734c11a24749c"),
  "name" : "Sarvadnya",
  "experience" : 20
}
{
  "_id" : ObjectId("5fa25640b06734c11a24749f"),
  "name" : "Dhananjay",
  "experience" : 15
}
{
  "_id" : ObjectId("5fa25640b06734c11a2474a0"),
  "name" : "Dipesh",
  "experience" : 13
}
{
  "_id" : ObjectId("5fa2562cb06734c11a24749b"),
  "name" : "Paresh",
  "experience" : 12
}
>
```

```
D:\Program Files\MongoDB\Server\4.4\bin\mongo.exe
{
  "_id" : ObjectId("5fa2562cb06734c11a24749b"),
  "name" : "Paresh",
  "experience" : 12
}
{
  "_id" : ObjectId("5fa25639b06734c11a24749d"),
  "name" : "Nilesh",
  "experience" : 10
}
{
  "_id" : ObjectId("5fa25640b06734c11a24749e"),
  "name" : "Digvijay",
  "experience" : 18
}
{
  "_id" : ObjectId("5fa2565cb06734c11a2474a3"),
  "name" : "Aail",
  "experience" : 8
}
{
  "_id" : ObjectId("5fa25658b06734c11a2474a2"),
  "name" : "Sham",
  "experience" : 5
}
>
> db.teachers.save({_id: ObjectId("5fa161ec75635cd6451dbc0"),name:"Sundar",qualification:"MTech",deptno:1,deptname:"computer",designation:"assistant professor",experience:14,salary:{basic:45000,TA:1000,DA:1000,HRA:2000},date_of_joining:new Date("2006-06-01"),areaOfExpertise:"DBMS"})
WriteResult({
  "nMatched" : 0,
  "nUpserted" : 1,
  "nModified" : 0,
  "_id" : ObjectId("5fa161ec75635cd6451dbc0")
})
> db.teachers.find((name:"Sundar")).pretty()
{
  "_id" : ObjectId("5fa161ec75635cd6451dbc0"),
  "name" : "Sundar",
  "qualification" : "MTech",
  "deptno" : 1,
  "deptname" : "computer",
  "designation" : "assistant professor",
  "experience" : 14,
  "salary" : {
    "basic" : 45000,
    "TA" : 1000,
    "DA" : 1000,
    "HRA" : 2000
  }
}
>
```



```
D:\Program Files\MongoDB\Server\4.4\bin\mongo.exe
> db.teachers.find({"designation":"HOD"}).sort({"salary.basic":-1}).pretty()
{
  "_id" : ObjectId("5fa25650b06734c11a2474a1"),
  "name" : "Ram",
  "qualification" : "PhD",
  "deptno" : 3,
  "deptname" : "ENTC",
  "designation" : "HOD",
  "experience" : 22,
  "salary" : {
    "basic" : 80000,
    "TA" : 1000,
    "DA" : 1000,
    "HRA" : 2000
  },
  "date_of_joining" : ISODate("1998-06-01T00:00:00Z"),
  "areaOfExpertise" : "Communication"
},
{
  "_id" : ObjectId("5fa25632b06734c11a24749c"),
  "name" : "Sarvadnya",
  "qualification" : "PhD",
  "deptno" : 1,
  "deptname" : "computer",
  "designation" : "HOD",
  "experience" : 20,
  "salary" : {
    "basic" : 75000,
    "TA" : 1000,
    "DA" : 1000,
    "HRA" : 2000
  },
  "date_of_joining" : ISODate("2000-06-01T00:00:00Z"),
  "areaOfExpertise" : "C#"}
},
{
  "_id" : ObjectId("5fa25640b06734c11a24749e"),
  "name" : "Digvijay",
  "qualification" : "PhD",
  "deptno" : 2,
  "deptname" : "IT",
  "designation" : "HOD",
  "experience" : 10,
  "salary" : {
    "basic" : 75000,
    "TA" : 1000,
    "DA" : 1000,
    "HRA" : 2000
  },
  "date_of_joining" : ISODate("2002-06-01T00:00:00Z"),
  "areaOfExpertise" : "ML"}
}
```

```
D:\Program Files\MongoDB\Server\4.4\bin\mongo.exe
{
  "deptno" : 2,
  "deptname" : "IT",
  "designation" : "HOD",
  "experience" : 10,
  "salary" : {
    "basic" : 75000,
    "TA" : 1000,
    "DA" : 1000,
    "HRA" : 2000
  },
  "date_of_joining" : ISODate("2002-06-01T00:00:00Z"),
  "areaOfExpertise" : "ML"
}
}

> db.teachers.find({}, {name:1,salary:1}).sort({"salary.TA":1})
{ "_id" : ObjectId("5fa25632b06734c11a24749c"), "name" : "Sarvadnya", "salary" : { "basic" : 75000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 } }
{ "_id" : ObjectId("5fa25650b06734c11a2474a1"), "name" : "Ram", "salary" : { "basic" : 80000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 } }
{ "_id" : ObjectId("5fa25640b06734c11a24749e"), "name" : "Digvijay", "salary" : { "basic" : 75000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 } }
{ "_id" : ObjectId("5fa25640b06734c11a24749f"), "name" : "Dharmajay", "salary" : { "basic" : 40000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 } }
{ "_id" : ObjectId("5fa25632b06734c11a24749d"), "name" : "Nilesh", "salary" : { "basic" : 18000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 } }
{ "_id" : ObjectId("5fa25650b06734c11a2474a0"), "name" : "Dipesh", "salary" : { "basic" : 60000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 } }
{ "_id" : ObjectId("5fa25650b06734c11a2474a2"), "name" : "Sham", "salary" : { "basic" : 25000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 } }
{ "_id" : ObjectId("5fa25650b06734c11a2474a3"), "name" : "Anil", "salary" : { "basic" : 40000, "TA" : 1000, "DA" : 1000, "HRA" : 2000 } }
```