Name - Durgesh Kumar
USN - 1RV20MC015

program - 4

* The company is organized into departments. each department has a unique name, a unique name a unique number and a particular employee who manages the department we keep track of the start date then that employee began managing the department. A department may have several locations. A department control a number of projects. each of ~~[illegible]~~ which has a unique name. a unique number and a single location. We store each employee's name a unique number and a single location. We store each employee's name, social security number, 2 address salary sex (gender) and birth data. An employee is assigned to one department but may work on several projects which are not necessarily controlled by the same department. We keep track of the current number of hours per week that an employee works on each project. We also track of the direct supervisor of each employee (who is another employee). We want to keep track of the dependents of each employee for insurance purposes. We keep each ~~depend~~ dependents first name, sex, birth date and relation shit to the employee.

consider a senario on employee management database and perform the following.

* Identify the document type and key
* Identify embedded / referenced documents.
* create the collection and relevant documents with required key value pair.
* Design the solution for the following.

① Insert minimum 5 employee records.

② sort the employee list by SSN.

③ list the employee who draws the working in the finance department.

④ Find the employee who draw the maximum salary

⑤ update the record of the employee who has worked on maximum project as "employee of the year".

⑥ Delete employee records who have minimum experience.

① Entity are :-

① employee
② Department
③ Project
④ Department

② Attribute are :-

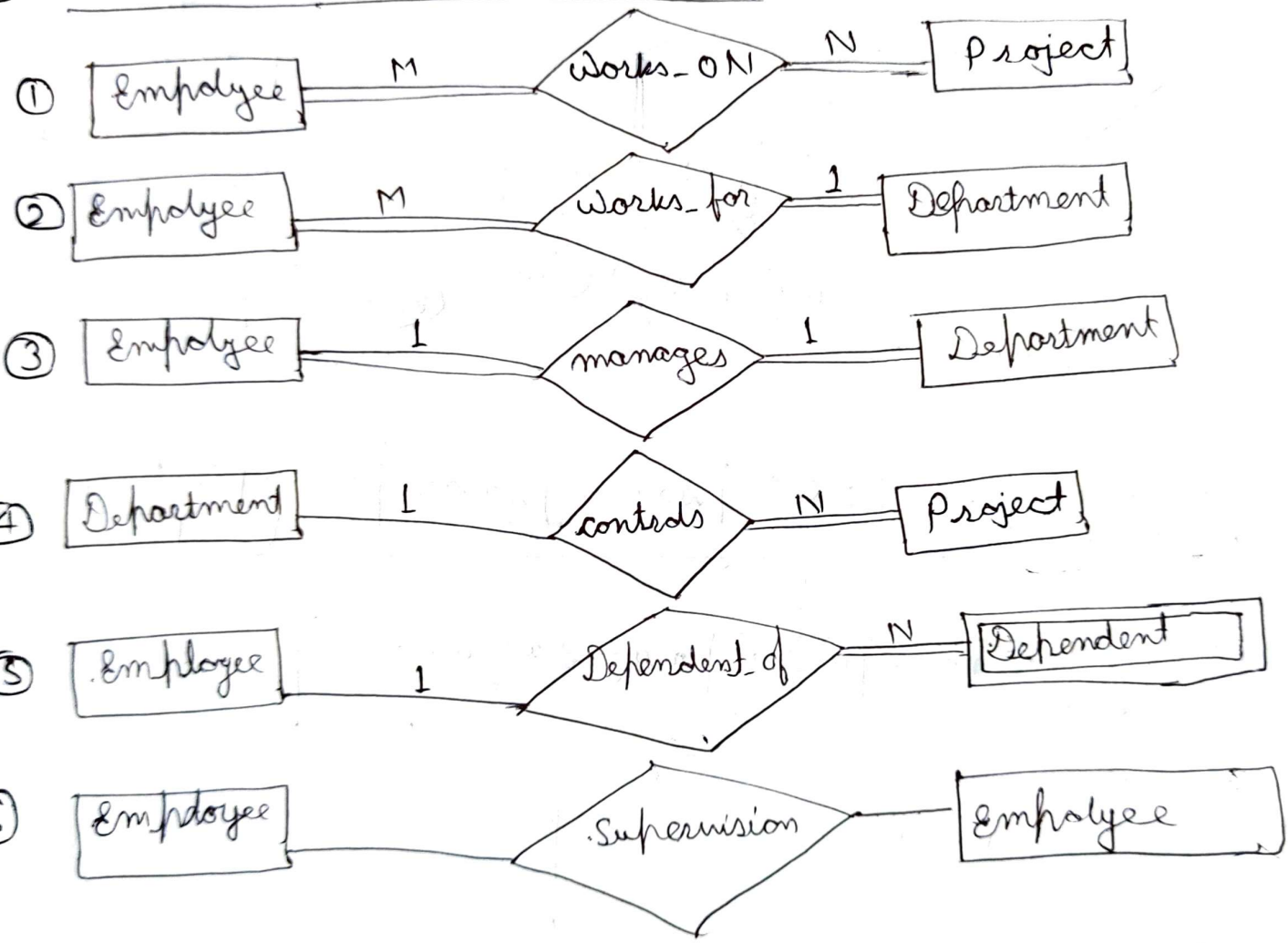
① employee → name, SSN, DOB, sex, salary, address.

② Department → number, name, location, manager, manager_start_date.

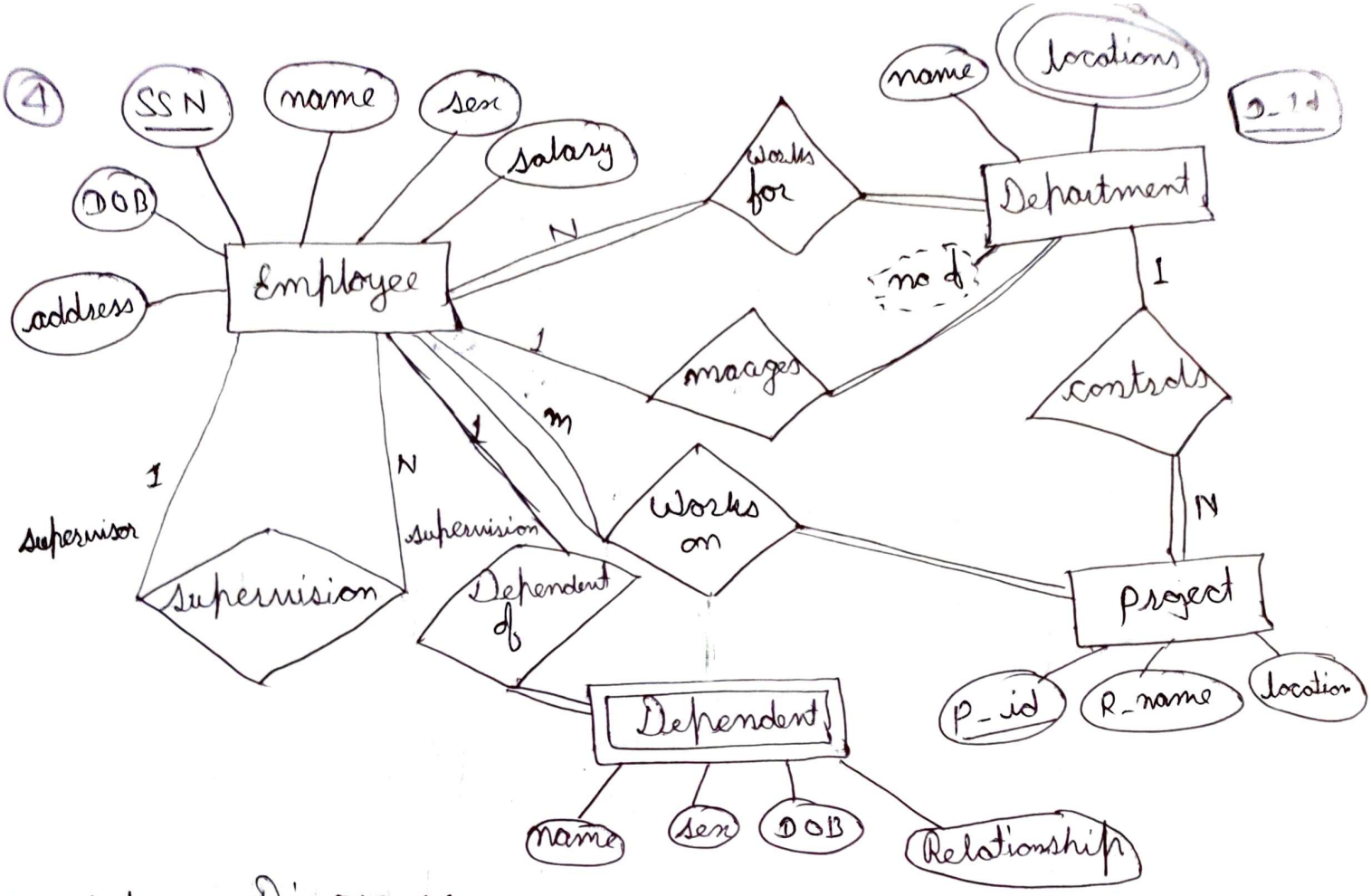
③ Project → P_number, name, location, Department

④ Dependent → name, sex, DOB, relationship.

③ Relationships and cardinality :-



④



⑤ Schema Diagram :-

employe

SSN	name	sex	DOB	address	salary	D_NO	S-SSN

Department

D_Id	D_name	m_SSN	mgg_start_date

location

D_Id	Dlocation

project

P_Id	pname	Plocation	D_Id

works-on

SSN	P_id	hours

Dependent

SSN	name	sex	DOB	relation

```
// create db
use rvce;

// to check db
show dbs;
db.dropDatabase()
```

1) Insert minimum 5 employee records.

```
// insert records for emp table
db.emp.insert({_eid : "E1001" , ename:"Durgesh" , socialno : "S1001" ,addr1 : "knp" , esal : 90000 , gender : "M" , emp_exp : 10})
db.emp.insert({_eid : "E1006" , ename:"Adity" , socialno : "S1006" ,addr1 : "Mum" , esal :750000 , gender : "M" , emp_exp : 12 })
db.emp.insert({_eid : "E1007" , ename:"Anurag" , socialno : "S1007" ,addr1 : "Knp" , esal :95000 , gender : "M" , emp_exp : 14})
db.emp.find().forEach(printjson)

// insert records for dept table
db.dept.insert({_dno : "D101" , dname:"IT" , mgid : db.emp.find()[0]._eid , mg_start_date : 2005})
db.dept.insert({_dno : "D106" , dname:"finance" , mgid : db.emp.find()[5]._eid , mg_start_date : 2019})
db.dept.insert({_dno : "D107" , dname:"finance" , mgid : db.emp.find()[6]._eid , mg_start_date : 2020})
db.dept.find().forEach(printjson)

// insert records for project table
db.proj.insert({_pid : "P101" , pname:"retail" , ploc : "Blr" , dno : db.dept.find()[0]._dno})
db.proj.insert({_pid : "P106" , pname:"private" , ploc : "Hyd" , dno : db.dept.find()[5]._dno})
db.proj.insert({_pid : "P107" , pname:"retail" , ploc : "Hyd" , dno : db.dept.find()[6]._dno})
db.dept.find().forEach(printjson)


// insert records for workson table
db.workson.insert({eid : db.emp.find()[0]._eid , pid : db.proj.find()[0]._pid })
db.workson.insert({eid : db.emp.find()[1]._eid , pid : db.proj.find()[1]._pid })
db.workson.insert({eid : db.emp.find()[6]._eid , pid : db.proj.find()[6]._pid })
db.workson.find().forEach(printjson)
```

1.// display record
db.emp.find().pretty()

```
> db.emp.find().pretty()
{
        "_id" : ObjectId("613c8598d81a2620f7ebd193"),
        "_eid" : "E1001",
        "ename" : "Durgesh",
        "socialno" : "S1001",
        "addr1" : "knp",
        "esal" : 90000,
        "gender" : "M",
        "emp_exp" : 10
}
{
        "_id" : ObjectId("613c8598d81a2620f7ebd197"),
        "_eid" : "E1006",
        "ename" : "Adity",
        "socialno" : "S1006",
        "addr1" : "Mum",
        "esal" : 750000,
        "gender" : "M",
        "emp_exp" : 12
}
{
        "_id" : ObjectId("613c8598d81a2620f7ebd198"),
        "_eid" : "E1007",
        "ename" : "Anurag",
        "socialno" : "S1007",
        "addr1" : "Knp",
        "esal" : 95000,
        "gender" : "M",
        "emp_exp" : 14
}
```

2) Sort the employee list by SSN

// ascending order
db.emp.find().sort({socialno:-1})

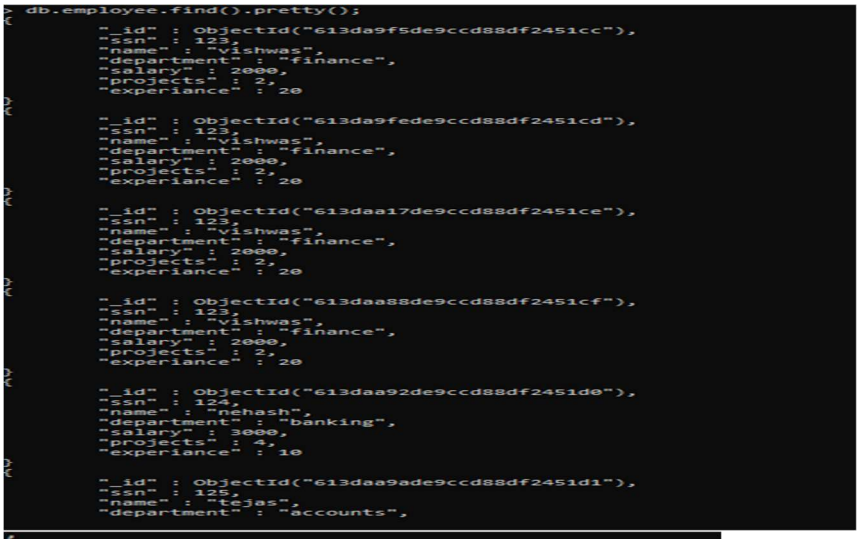
// descending order
db.emp.find().sort({socialno:-1})

```
> db.emp.find().sort({socialno:-1})
{ "_id" : ObjectId("613c8598d81a2620f7ebd198"), "_eid" : "E1007", "ename" : "Anurag", "socialno" : "S1007", "addr1" : "Knp", "esal" : 95000, "gender" : "M", "emp_exp" :
14 }
{ "_id" : ObjectId("613c8598d81a2620f7ebd197"), "_eid" : "E1006", "ename" : "Adity", "socialno" : "S1006", "addr1" : "Mum", "esal" : 750000, "gender" : "M", "emp_exp" :
12 }
{ "_id" : ObjectId("613c8598d81a2620f7ebd193"), "_eid" : "E1001", "ename" : "Durgesh", "socialno" : "S1001", "addr1" : "knp", "esal" : 90000, "gender" : "M", "emp_exp"
: 10 }
>
> db.emp.find().sort({socialno:-1})
{ "_id" : ObjectId("613c8598d81a2620f7ebd198"), "_eid" : "E1007", "ename" : "Anurag", "socialno" : "S1007", "addr1" : "Knp", "esal" : 95000, "gender" : "M", "emp_exp" :
14 }
{ "_id" : ObjectId("613c8598d81a2620f7ebd197"), "_eid" : "E1006", "ename" : "Adity", "socialno" : "S1006", "addr1" : "Mum", "esal" : 750000, "gender" : "M", "emp_exp" :
12 }
{ "_id" : ObjectId("613c8598d81a2620f7ebd193"), "_eid" : "E1001", "ename" : "Durgesh", "socialno" : "S1001", "addr1" : "knp", "esal" : 90000, "gender" : "M", "emp_exp"
: 10 }
>
```

3) List the employees who are working in the finance department

---

>db.employee.find({department:"finance"}).forEach(printjson);



```
> db.employee.find().pretty();
{
        "_id" : ObjectId("613da9f5de9ccd88df2451cc"),
        "ssn" : 123,
        "name" : "vishwas",
        "department" : "finance",
        "salary" : 2000,
        "projects" : 2,
        "experiance" : 20
}
{
        "_id" : ObjectId("613da9fede9ccd88df2451cd"),
        "ssn" : 123,
        "name" : "vishwas",
        "department" : "finance",
        "salary" : 2000,
        "projects" : 2,
        "experiance" : 20
}
{
        "_id" : ObjectId("613daa17de9ccd88df2451ce"),
        "ssn" : 123,
        "name" : "vishwas",
        "department" : "finance",
        "salary" : 2000,
        "projects" : 2,
        "experiance" : 20
}
{
        "_id" : ObjectId("613daa88de9ccd88df2451cf"),
        "ssn" : 123,
        "name" : "vishwas",
        "department" : "finance",
        "salary" : 2000,
        "projects" : 2,
        "experiance" : 20
}
{
        "_id" : ObjectId("613daa92de9ccd88df2451d0"),
        "ssn" : 124,
        "name" : "nehash",
        "department" : "banking",
        "salary" : 3000,
        "projects" : 4,
        "experiance" : 10
}
{
        "_id" : ObjectId("613daa9ade9ccd88df2451d1"),
        "ssn" : 125,
        "name" : "tejas",
        "department" : "accounts",
```

```
{
        "_id" : ObjectId("613daaa1de9ccd88df2451d2"),
        "ssn" : 126,
        "name" : "akash",
        "department" : "finance",
        "salary" : 5000,
        "project" : 5,
        "experiance" : 12,
        "awarded" : "employee of year"
}
{
        "_id" : ObjectId("613daaa8de9ccd88df2451d3"),
        "ssn" : 127,
        "name" : "sanjay",
        "department" : "stockbroker",
        "salary" : 1000,
        "projects" : 3,
        "experiance" : 11
}
{
        "_id" : ObjectId("614058e85dcd2241f6ce0c20"),
        "ssn" : 123,
        "name" : "Suman",
        "department" : "finance",
        "salary" : 2000,
        "projects" : 2,
        "experiance" : 20
}
{
        "_id" : ObjectId("614058ef5dcd2241f6ce0c21"),
        "ssn" : 124,
        "name" : "Ravi",
        "department" : "banking",
        "salary" : 3000,
        "projects" : 4,
        "experiance" : 10
}
{
        "_id" : ObjectId("614058f65dcd2241f6ce0c22"),
        "ssn" : 125,
        "name" : "Deepak",
        "department" : "accounts",
        "salary" : 4000,
```

```
{
        "_id" : ObjectId("614058fd5dcd2241f6ce0c23"),
        "ssn" : 126,
        "name" : "Prince",
        "department" : "finance",
        "salary" : 5000,
        "project" : 5,
        "experiance" : 12
}
{
        "_id" : ObjectId("614059035dcd2241f6ce0c24"),
        "ssn" : 127,
        "name" : "sanjay",
        "department" : "stockbroker",
        "salary" : 1000,
        "projects" : 3,
        "experiance" : 11
}
> db.employee.find({department:"finance"}).forEach(printjson)
{
        "_id" : ObjectId("613da9f5de9ccd88df2451cc"),
        "ssn" : 123,
        "name" : "vishwas",
        "department" : "finance",
        "salary" : 2000,
        "projects" : 2,
        "experiance" : 20
}
{
        "_id" : ObjectId("613da9fede9ccd88df2451cd"),
        "ssn" : 123,
        "name" : "vishwas",
        "department" : "finance",
        "salary" : 2000,
        "projects" : 2,
        "experiance" : 20
}
{
        "_id" : ObjectId("613daa17de9ccd88df2451ce"),
        "ssn" : 123,
        "name" : "vishwas",
        "department" : "finance",
        "salary" : 2000,
        "projects" : 2,
```

```
        "projects" : 2,
        "experiance" : 20
}
{
        "_id" : ObjectId("613daa88de9ccd88df2451cf"),
        "ssn" : 123,
        "name" : "vishwas",
        "department" : "finance",
        "salary" : 2000,
        "projects" : 2,
        "experiance" : 20
}
{
        "_id" : ObjectId("613daaa1de9ccd88df2451d2"),
        "ssn" : 126,
        "name" : "akash",
        "department" : "finance",
        "salary" : 5000,
        "project" : 5,
        "experiance" : 12,
        "awarded" : "employee of year"
}
{
        "_id" : ObjectId("614058e85dcd2241f6ce0c20"),
        "ssn" : 123,
        "name" : "Suman",
        "department" : "finance",
        "salary" : 2000,
        "projects" : 2,
        "experiance" : 20
}
{
        "_id" : ObjectId("614058fd5dcd2241f6ce0c23"),
        "ssn" : 126,
        "name" : "Prince",
        "department" : "finance",
        "salary" : 5000,
        "project" : 5,
        "experiance" : 12
}
> _
```


4) Find the employee who draws the maximum salary.

// to get highest salary

db.emp.find({}).sort({"esal":-1}).limit(1)

// second highest salary

db.emp.find({}).sort({"esal":-1}).skip(1).limit(1)


```
>
> db.emp.find({}).sort({"esal":-1}).limit(1)
{ "_id" : ObjectId("613c8598d81a2620f7ebd197"), "_eid" : "E1006", "ename" : "Adity", "socialno" : "S1006", "addr1" : "Mum", "esal" : 750000, "gender" : "M", "emp_exp" :
 12 }
```


5) Update the record of the employee who has worked on maximum projects as “employee of the year”

> db.employee.update({project:5},{$set:{awarded:"employee of year"}})


```
>
> db.employee.update({project:5},{$set:{awarded:"employee of year"}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 0 })
>
```

6) Delete employee records who have minimum experience

---

db.emp.remove({emp_exp: db.emp.find().sort({emp_exp:1})[0].emp_exp})

```
> db.emp.find().pretty()
{
        "_id" : ObjectId("613c8598d81a2620f7ebd193"),
        "_eid" : "E1001",
        "ename" : "Durgesh",
        "socialno" : "S1001",
        "addr1" : "knp",
        "esal" : 90000,
        "gender" : "M",
        "emp_exp" : 10
}
{
        "_id" : ObjectId("613c8598d81a2620f7ebd197"),
        "_eid" : "E1006",
        "ename" : "Adity",
        "socialno" : "S1006",
        "addr1" : "Mum",
        "esal" : 750000,
        "gender" : "M",
        "emp_exp" : 12
}
{
        "_id" : ObjectId("613c8598d81a2620f7ebd198"),
        "_eid" : "E1007",
        "ename" : "Anurag",
        "socialno" : "S1007",
        "addr1" : "Knp",
        "esal" : 95000,
        "gender" : "M",
        "emp_exp" : 14
}
>
> db.emp.remove({emp_exp: db.emp.find().sort({emp_exp:1})[0].emp_exp})
WriteResult({ "nRemoved" : 1 })
> db.emp.find().pretty()
{
        "_id" : ObjectId("613c8598d81a2620f7ebd197"),
        "_eid" : "E1006",
        "ename" : "Adity",
        "socialno" : "S1006",
        "addr1" : "Mum",
        "esal" : 750000,
        "gender" : "M",
        "emp_exp" : 12
}
{
        "_id" : ObjectId("613c8598d81a2620f7ebd198"),
        "_eid" : "E1007",
        "ename" : "Anurag",
        "socialno" : "S1007",
        "addr1" : "Knp",
        "esal" : 95000,
        "gender" : "M",
        "emp_exp" : 14
}
```