NAME- VAISHNAVI K
USN-1NT19IS195
BATCH-C3

use vaishnavi_employeedb

```
> use vaishnavi_employee
switched to db vaishnavi_employee
```

1)Inserting the records
var data=[
{
 "id": 1,
 "name": "vaishnavi",
"mname": "k",
"lname": "konduru",
 "age": 18,
 "sal": 25000,
 "designation": "PR",
 "role": "manager"
},
{
"id": 2,
 "name": "padma",
"mname": "m",
"lname": "konduru",
 "age": 28,
 "sal": 55000,
 "designation": "EA",
 "role": "UI developer"
},
{
"id": 3,
 "name": "prateek",
"mname": "k",
"lname": "konduru",
 "age": 38,
 "sal": 95000,
 "designation": "AC",
 "role": "UX developer"
},
{
"id": 4,
 "name": "nagesh",
"mname": "rao",
"lname": "konduru",
 "age": 48,
 "sal": 45000,
 "designation": "HR",

      "role": "Team lead"
    },
    {
    "id": 5,
      "name": "tejaal",
    "mname": "rao",
    "lname": "mupalla",
     "age": 38,
     "sal": 25000,
     "designation": "ED",
     "role": "Manager"
    },
    {
    "id": 6,
      "name": "diya",
    "mname": "d",
    "lname": "mupalla",
     "age": 38,
     "sal": 25000,
     "designation": "AC",
     "role": "Associate Manager"
    },
    {
    "id": 7,
      "name": "madhavi",
    "mname": "m",
    "lname": "sai",
     "age": 38,
     "sal": 5000,
     "designation": " AC",
     "role": "Accountant"
    },
    {
    "id": 8,
      "name": "ramya",
    "mname": "d",
    "lname": "surya",
     "age": 38,
     "sal": 95000,
     "designation": "PR",
     "role": "Assistant Manager"
    },
    {
    "id": 9,
      "name": "Varun",
    "mname": "m",
    "lname": "sandeep",
     "age": 68,
     "sal": 150000,
     "designation": "Ac",
     "role": "CEO"
    },

```json
{
"id": 10,
 "name": "Sindhu",
"mname": "k",
"lname": "sillava",
 "age": 38,
 "sal": 15000,
 "designation": "EA",
 "role": "HR"
},

{
"id": 11,
 "name": "Nishitha",
"mname": "k",
"lname": "Raghunath",
 "age": 18,
 "sal": 75000,
 "designation": "AC",
 "role": "Electrical engineer"
},
{
"id": 12,
 "name": "Abhiram",
"mname": "kr",
"lname": "Sinukunar",
 "age": 19,
 "sal": 55000,
 "designation": "ED",
 "role": "R&D head"
},
{
"id": 13,
 "name": "Vani",
"mname": "p",
"lname": "Venkatesh",
 "age": 58,
 "sal": 75000,
 "designation": "AC",
 "role": "Software engineer"
},
{
"id": 14,
 "name": "Meghala",
"mname": "r",
"lname": "Kannan",
 "age": 28,
 "sal": 107000,
 "designation": "EDA",
 "role": "Senior manager"
},
{
```

```
"id": 15,
  "name": "Bharath",
"mname": "Kumar",
"lname": "sai",
 "age": 18,
 "sal": 75000,
 "designation": "AC",
 "role": "Manager"
}]
db.Employee.insert(data);
```

```
> var data=[
... {
...     "id": 1,
...     "name": "vaishnavi",
... "mname": "k",
... "lname": "konduru",
...     "age": 18,
...     "sal": 25000,
...     "designation": "PR",
...     "role": "manager"
... },
... {
... "id":  2,
...     "name": "padma",
... "mname": "m",
... "lname": "konduru",
...     "age":  28,
...     "sal": 55000,
...     "designation": "EA",
...     "role":  "UI developer"
... },
... {
... "id": 3,
...     "name": "prateek",
... "mname": "k",
... "lname": "konduru",
...     "age": 38,
...     "sal": 95000,
...     "designation":  "AC",
...     "role": "UX developer"
... },
```

```json
  {
    "id": 4,
      "name": "nagesh",
  "mname": "rao",
  "lname":  "konduru",
    "age": 48,
    "sal":   45000,
    "designation":   "HR",
      "role":   "Team lead"
  },
  {
  "id": 5,
      "name": "tejaal",
  "mname":   "rao",
  "lname":   "mupalla",
    "age":   38,
    "sal":   25000,
    "designation":   "ED",
      "role": "Manager"
  },
  {
  "id": 6,
      "name": "diya",
  "mname": "d",
  "lname": "mupalla",
    "age":   38,
    "sal":   25000,
    "designation":   "AC",
      "role":   "Associate Manager"
  },
  {
  "id":   7,
      "name":   "madhavi",
  "mname": "m",
  "lname":   "sai",
    "age":   38,
    "sal":   5000,
    "designation": " AC",
      "role":   "Accountant"
  },
  {
  "id":   8,
      "name":   "ramya",
  "mname": "d",
  "lname": "surya",
    "age":   38,
    "sal":   95000,
    "designation":   "PR",
      "role":   "Assistant Manager"
  },
  {
  "id": 9,
      "name": "Varun",
  "mname": "m",
  "lname": "sandeep",
    "age":   68,
    "sal": 150000,
    "designation":   "Ac",
      "role":   "CEO"
  },
```

```json
{
"id":  10,
  "name":  "Sindhu",
"mname":  "k",
"lname":  "sillava",
 "age":  38,
 "sal":  15000,
 "designation":  "EA",
  "role":  "HR"
},

{
"id":  11,
  "name":  "Nishitha",
"mname":  "k",
"lname":  "Raghunath",
 "age":  18,
 "sal":  75000,
 "designation":  "AC",
  "role":  "Electrical engineer"
},
{
"id": 12,
  "name":  "Abhiram",
"mname":  "kr",
"lname":  "Sinukunar",
 "age":  19,
 "sal":  55000,
 "designation":  "ED",
  "role":  "R&D head"
},
{
"id": 13,
  "name": "Vani",
"mname":  "p",
"lname":  "Venkatesh",
 "age":  58,
 "sal":  75000,
 "designation":  "AC",
  "role":  "Software engineer"
},
{
"id": 14,
  "name":  "Meghala",
"mname":  "r",
"lname":  "Kannan",
 "age":  28,
 "sal":  107000,
 "designation":  "EDA",
  "role":  "Senior manager"
},
{
"id": 15,
  "name":  "Bharath",
"mname":  "w",
"lname":  "sai",
 "age":  18,
 "sal":  75000,
 "designation":  "AC",
  "role":  "Manager"
}]
```

1)Displaying the records
> db.Employee.find().pretty()

```
> db.Employee.find().pretty()
{
        "_id" : ObjectId("6299d5f9127f456c92d5693f"),
        "id" : 1,
        "name" : "vaishnavi",
        "mname" : "k",
        "lname" : "konduru",
        "age" : 18,
        "sal" : 25000,
        "designation" : "PR",
        "role" : "manager"
}
{
        "_id" : ObjectId("6299d5f9127f456c92d56940"),
        "id" : 2,
        "name" : "padma",
        "mname" : "m",
        "lname" : "konduru",
        "age" : 28,
        "sal" : 55000,
        "designation" : "EA",
        "role" : "UI developer"
}
{
        "_id" : ObjectId("6299d5f9127f456c92d56941"),
        "id" : 3,
        "name" : "prateek",
        "mname" : "k",
        "lname" : "konduru",
        "age" : 38,
        "sal" : 95000,
        "designation" : "AC",
        "role" : "UX developer"
}
```

```
        "id" : 4,
        "name" : "nagesh",
        "mname" : "rao",
        "lname" : "konduru",
        "age" : 48,
        "sal" : 45000,
        "designation" : "HR",
        "role" : "Team lead"
}
{
        "_id" : ObjectId("6299d5f9127f456c92d56943"),
        "id" : 5,
        "name" : "tejaal",
        "mname" : "rao",
        "lname" : "mupalla",
        "age" : 38,
        "sal" : 25000,
        "designation" : "ED",
        "role" : "Manager"
}
{
        "_id" : ObjectId("6299d5f9127f456c92d56944"),
        "id" : 6,
        "name" : "diya",
        "mname" : "d",
        "lname" : "mupalla",
        "age" : 38,
        "sal" : 25000,
        "designation" : "AC",
        "role" : "Associate Manager"
}
```

```
        "_id" : ObjectId("6299d5f9127f456c92d56945"),
        "id" : 7,
        "name" : "madhavi",
        "mname" : "m",
        "lname" : "sai",
        "age" : 38,
        "sal" : 5000,
        "designation" : " AC",
        "role" : "Accountant"
}
{
        "_id" : ObjectId("6299d5f9127f456c92d56946"),
        "id" : 8,
        "name" : "ramya",
        "mname" : "d",
        "lname" : "surya",
        "age" : 38,
        "sal" : 95000,
        "designation" : "PR",
        "role" : "Assistant Manager"
}
{
        "_id" : ObjectId("6299d5f9127f456c92d56947"),
        "id" : 9,
        "name" : "Varun",
        "mname" : "m",
        "lname" : "sandeep",
        "age" : 68,
        "sal" : 150000,
        "designation" : "Ac",
        "role" : "CEO"
}
```

```
{
        "_id" : ObjectId("6299d5f9127f456c92d56948"),
        "id" : 10,
        "name" : "Sindhu",
        "mname" : "k",
        "lname" : "sillava",
        "age" : 38,
        "sal" : 15000,
        "designation" : "EA",
        "role" : "HR"
}
{
        "_id" : ObjectId("6299d5f9127f456c92d56949"),
        "id" : 11,
        "name" : "Nishitha",
        "mname" : "k",
        "lname" : "Raghunath",
        "age" : 18,
        "sal" : 75000,
        "designation" : "AC",
        "role" : "Electrical engineer"
}
{
        "_id" : ObjectId("6299d5f9127f456c92d5694a"),
        "id" : 12,
        "name" : "Abhiram",
        "mname" : "kr",
        "lname" : "Sinukunar",
        "age" : 19,
        "sal" : 55000,
        "designation" : "ED",
        "role" : "R&D head"
}
```

```
}
{
        "_id" : ObjectId("6299d5f9127f456c92d5694b"),
        "id" : 13,
        "name" : "Vani",
        "mname" : "p",
        "lname" : "Venkatesh",
        "age" : 58,
        "sal" : 75000,
        "designation" : "AC",
        "role" : "Software engineer"
}
{
        "_id" : ObjectId("6299d5f9127f456c92d5694c"),
        "id" : 14,
        "name" : "Meghala",
        "mname" : "r",
        "lname" : "Kannan",
        "age" : 28,
        "sal" : 107000,
        "designation" : "EDA",
        "role" : "Senior manager"
}
{
        "_id" : ObjectId("6299d5f9127f456c92d5694d"),
        "id" : 15,
        "name" : "Bharath",
        "mname" : "w",
        "lname" : "sai",
        "age" : 18,
        "sal" : 75000,
        "designation" : "AC",
        "role" : "Manager"
}
```

2. List all the records having salary in the range of 20000 – 35000

```
> db.Employee.find({sal:{$gt:20000,$lt:35000}}).pretty()
db.Employee.find({sal:{$gt:20000,$lt:35000}}).pretty()
{
    "_id" : ObjectId("6299d5f9127f456c92d5693f"),
    "id" : 1,
    "name" : "vaishnavi",
    "mname" : "k",
    "lname" : "konduru",
    "age" : 18,
    "sal" : 25000,
    "designation" : "PR",
    "role" : "manager"
}
{
    "_id" : ObjectId("6299d5f9127f456c92d56943"),
    "id" : 5,
```

```
"name" : "tejaal",
"mname" : "rao",
"lname" : "mupalla",
"age" : 38,
"sal" : 25000,
"designation" : "ED",
"role" : "Manager"
}
{
"_id" : ObjectId("6299d5f9127f456c92d56944"),
"id" : 6,
"name" : "diya",
"mname" : "d",
"lname" : "mupalla",
"age" : 38,
"sal" : 25000,
"designation" : "AC",
"role" : "Associate Manager"
}
```

```
> db.Employee.find({sal:{$gt:20000,$lt:35000}}).pretty()
{
        "_id" : ObjectId("6299d5f9127f456c92d5693f"),
        "id" : 1,
        "name" : "vaishnavi",
        "mname" : "k",
        "lname" : "konduru",
        "age" : 18,
        "sal" : 25000,
        "designation" : "PR",
        "role" : "manager"
}
{
        "_id" : ObjectId("6299d5f9127f456c92d56943"),
        "id" : 5,
        "name" : "tejaal",
        "mname" : "rao",
        "lname" : "mupalla",
        "age" : 38,
        "sal" : 25000,
        "designation" : "ED",
        "role" : "Manager"
}
{
        "_id" : ObjectId("6299d5f9127f456c92d56944"),
        "id" : 6,
        "name" : "diya",
        "mname" : "d",
        "lname" : "mupalla",
        "age" : 38,
        "sal" : 25000,
        "designation" : "AC",
        "role" : "Associate Manager"
}
```

3. List all the Employee whose Middle name is "Rao".

db.Employee.find({"name.mname": "k")

```
{
        "_id" : ObjectId("6299cfdbd53e6e0f3c17d199"),
        "id" : 4,
        "name" : "nagesh",
        "mname" : "rao",
        "lname" : "konduru",
        "age" : 48,
        "sal" : 55650,
        "designation" : "HR",
        "role" : "Team lead"
}
```

4.Count the number of Employees who has a role "Manager" in the Role field

> db.Employee.find({"role":"Manager"}).count()
  2

```
> db.Employee.find({"role":"Manager"}).count()
2
```

5.Find out all the documents who have age < 35 and salary in the range of 20000-35000

> db.Employee.find({sal:{$gt:20000,$lt:35000},age:{$lt:35}}).pretty()
{
    "_id" : ObjectId("6299d5f9127f456c92d5693f"),
    "id" : 1,
    "name" : "vaishnavi",
    "mname" : "k",
    "lname" : "konduru",
    "age" : 18,
    "sal" : 25000,
    "designation" : "PR",
    "role" : "manager"
}

```
> db.Employee.find({sal:{$gt:20000,$lt:35000},age:{$lt:35}}).pretty()
{
        "_id" : ObjectId("6299d5f9127f456c92d5693f"),
        "id" : 1,
        "name" : "vaishnavi",
        "mname" : "k",
        "lname" : "konduru",
        "age" : 18,
        "sal" : 25000,
        "designation" : "PR",
        "role" : "manager"
}
```

6. Delete an Employee whose "Firstname" is "Varun" and having the designation   as "CEO"

> db.Employee.deleteOne({"name":"Varun"},{"designation":"CEO"})
{ "acknowledged" : true, "deletedCount" : 1 }

```
> db.Employee.deleteOne({"name":"Varun"},{"designation":"CEO"})
{ "acknowledged" : true, "deletedCount" : 1 }
```

7. Update all the Employees whose role is "Team Lead" with a salary of 55650   INR

> db.Employee.updateMany({role:"Team lead"},{$set:{sal:55650}})

```
> db.Employee.updateMany({role:"Team lead"},{$set:{sal:55650}})
{ "acknowledged" : true, "matchedCount" : 1, "modifiedCount" : 0 }
{
        "_id" : ObjectId("6299cfdbd53e6e0f3c17d199"),
        "id" : 4,
        "name" : "nagesh",
        "mname" : "rao",
        "lname" : "konduru",
        "age" : 48,
        "sal" : 55650,
        "designation" : "HR",
        "role" : "Team lead"
}
```

8. Group all the Employees by their age(common age should be there) and   calculate the average salary obtained in the each group

> db.Employee.aggregate([{$group:{_id:"$age",total:{$avg:"$sal"}}}])
{ "_id" : 28, "total" : 81000 }
{ "_id" : 38, "total" : 43333.333333333336 }
{ "_id" : 68, "total" : 150000 }
{ "_id" : 58, "total" : 75000 }

{ "_id" : 18, "total" : 58333.333333333336 }
{ "_id" : 48, "total" : 55650 }
{ "_id" : 19, "total" : 55000 }

```
> db.Employee.updateMany({role:"team lead"},{$set:{sal:55650}})
{ "acknowledged" : true, "matchedCount" : 0, "modifiedCount" : 0 }
> db.Employee.aggregate([{$group:{_id:"$age",total:{$avg:"$sal"}}}])
{ "_id" : 28, "total" : 81000 }
{ "_id" : 38, "total" : 43333.333333333336 }
{ "_id" : 68, "total" : 150000 }
{ "_id" : 58, "total" : 75000 }
{ "_id" : 18, "total" : 58333.333333333336 }
{ "_id" : 48, "total" : 55650 }
{ "_id" : 19, "total" : 55000 }
>
```

9. Apply the map-reduce to perform the above operation and obtain the results

```
> var mapfunction=function(){emit(this.age,this.sal)}
> var reducefunction=function(key,values){return Array.avg(values)}
> db.Employee.mapReduce(mapfunction,reducefunction,{'out':'result'})
{ "result" : "result", "ok" : 1 }
> db.result.find()
```
{ "_id" : 68, "value" : 150000 }
{ "_id" : 38, "value" : 43333.333333333336 }
{ "_id" : 48, "value" : 55650 }
{ "_id" : 18, "value" : 58333.333333333336 }
{ "_id" : 28, "value" : 81000 }
{ "_id" : 19, "value" : 55000 }
{ "_id" : 58, "value" : 75000 }

```
> var mapfunction=function(){emit(this.age,this.sal)}
> var reducefunction=function(key,values){return Array.avg(values)}
> db.Employee.mapReduce(mapfunction,reducefunction,{'out':'result'})
{ "result" : "result", "ok" : 1 }
> db.result.find()
{ "_id" : 68, "value" : 150000 }
{ "_id" : 38, "value" : 43333.333333333336 }
{ "_id" : 48, "value" : 55650 }
{ "_id" : 18, "value" : 58333.333333333336 }
{ "_id" : 28, "value" : 81000 }
{ "_id" : 19, "value" : 55000 }
{ "_id" : 58, "value" : 75000 }
```