

BD lab: Program 1b
Greeshma KH
1nt19is056

```
books> use Institute  
switched to db Institute
```

```
Institute> db.createCollection("Staff")  
{ ok: 1 }
```

1. Populate atleast 15 documents

```
Institute> load("/home/hadoop/staffy.js")
```

```
true
```

```
Institute> db.Staff.find()
```

```
[  
  {  
    _id: ObjectId("628b512ca972bd43d8e0757e"),  
    id: 1,  
    Name: 'Emlynne',  
    SSN: 'EMP0125',  
    Department: [ 'HR', 'Main Head' ],  
    Salary: 100776,  
    Age: 46,  
    Increment: true,  
    Performance: 'Good'  
  },  
  {  
    _id: ObjectId("628b512ca972bd43d8e0757f"),  
    id: 2,  
    Name: 'Marrissa',  
    SSN: 'EMP0239',  
    Department: [ 'Development Team' ],  
    Salary: 36580,  
    Age: 44,  
    Increment: false,  
    Performance: 'Bad'  
  },  
  {  
    _id: ObjectId("628b512ca972bd43d8e07580"),  
    id: 3,  
    Name: 'Ravi',  
    SSN: 'EMP0240',  
    Department: [ 'Administration' ],  
    Salary: 180847,  
    Age: 32,
```

```
Increment: false,
Performance: 'Average'
},
{
  _id: ObjectId("628b512ca972bd43d8e07581"),
  id: 4,
  Name: 'Jayant',
  SSN: 'EMP0241',
  Department: [ 'HR', 'Team Lead', 'Scientific Head' ],
  Salary: 89712,
  Age: 49,
  Increment: false,
  Performance: 'Excellent'
},
{
  _id: ObjectId("628b512ca972bd43d8e07582"),
  id: 5,
  Name: 'Greeshma',
  SSN: 'EMP0243',
  Department: [ 'Administration' ],
  Salary: 194688,
  Age: 31,
  Increment: false,
  Performance: 'Bad'
},
{
  _id: ObjectId("628b512ca972bd43d8e07583"),
  id: 6,
  Name: 'Priyojit',
  SSN: 'EMP0244',
  Department: [ 'Scientific Lead', 'Corridor Incharge' ],
  Salary: 154179,
  Age: 46,
  Increment: false,
  Performance: 'Average'
},
{
  _id: ObjectId("628b512ca972bd43d8e07584"),
  id: 7,
  Name: 'Kalyan',
  SSN: 'EMP0255',
  Department: [ 'NGO', 'HR', 'Team Lead' ],
  Salary: 183114,
  Age: 41,
  Increment: false,
  Performance: 'Bad'
}
```

```
},
{
  _id: ObjectId("628b512ca972bd43d8e07585"),
  id: 8,
  Name: 'Harmonie',
  SSN: 'EMP0256',
  Department: [ {} ],
  Salary: 95393,
  Age: 36,
  Increment: false,
  Performance: 'Good'
},
{
  _id: ObjectId("628b512ca972bd43d8e07586"),
  id: 9,
  Name: 'Satvik',
  SSN: 'EMP0257',
  Department: [ 'Something', 'HR' ],
  Salary: 164230,
  Age: 49,
  Increment: true,
  Performance: 'Average'
},
{
  _id: ObjectId("628b512ca972bd43d8e07587"),
  id: 10,
  Name: 'Bennett',
  SSN: 'EMP0258',
  Department: [ 'HR', 'Team Lead', 'Scientific Head' ],
  Salary: 42241,
  Age: 32,
  Increment: true,
  Performance: 'Good'
},
{
  _id: ObjectId("628b512ca972bd43d8e07588"),
  id: 11,
  Name: 'Carita',
  SSN: 'EMP0259',
  Department: [ 'Maintainence', 'HR' ],
  Salary: 34809,
  Age: 30,
  Increment: true,
  Performance: 'Average'
},
{
```

```
_id: ObjectId("628b512ca972bd43d8e07589"),
id: 12,
Name: 'Melinde',
SSN: 'EMP0260',
Department: [ 'Maintainence', 'HR' ],
Salary: 84978,
Age: 29,
Increment: false,
Performance: 'Average'
},
{
  _id: ObjectId("628b512ca972bd43d8e0758a"),
  id: 13,
  Name: 'Artie',
  SSN: 'EMP0261',
  Department: [ 'Maintainence', 'HR', 'Teachnical Head' ],
  Salary: 111692,
  Age: 30,
  Increment: false,
  Performance: 'Good'
},
{
  _id: ObjectId("628b512ca972bd43d8e0758b"),
  id: 14,
  Name: 'Natasha',
  SSN: 'EMP0262',
  Department: [ 'Maintainence', 'HR', 'Corridor ' ],
  Salary: 129989,
  Age: 49,
  Increment: true,
  Performance: 'Bad'
},
{
  _id: ObjectId("628b512ca972bd43d8e0758c"),
  id: 15,
  Name: 'Udale',
  SSN: 'EMP0263',
  Department: [ 'Maintainence', 'HR', 'Developement Head' ],
  Salary: 88259,
  Age: 31,
  Increment: true,
  Performance: 'Good'
}
]
```

2. List all the records having salary in the range of 20000 - 35000 (Exclusive)

QUERY-

```
db.Staff.find({$and : [{Salary : {$gt : 20000}}, {Salary : {$lt : 35000}}]});
```

3. List all the Staff who belong to the Maintenance Department -

QUERY-

```
db.staff.find({"Department" : {$in : ["Maintenance"]}}).pretty();
```

4. Count the number of Staff whose performance status is "Average"-

QUERY-

```
db.staff.count({"Performance status" : "Average"});
```

5. Find out all the Staff who have age < 35 and salary in the range of 40000-45000

QUERY-

```
db.staff.find({$and : [{Age : {$lt : 35}}, {Salary : {$gt : 40000}}, {Salary : {$lt : 45000}}]}).pretty();
```

6. Delete a Staff from database whose ID = EMP239-

QUERY-

```
db.staff.remove({"SSN" : "EMP239"});
```

7. Update all the Staff whose increment status as "Yes" with a salary of 75650 INR-

QUERY-

```
db.staff.update({"Increment" : "Yes"}, {$set : {Salary : 75650}});
```

8. Update the Staff by name "Ravi" and remove the Performance status field from the document-

QUERY-

```
db.staff.update({"Name" : "Ravi"},{$unset : {"Performance status" : "" } });
```

9. Group all the Employees by their Increment Status and calculate the average salary obtained in the each group-

QUERY

```
db.staff.aggregate([{$group : {_id : "$Increment" , Avg_Sal : {$avg : "$Salary"}}}]);
```

10. Apply the map-reduce aggregation to project the name and amount owned by each Staff by doing multiple jobs in different department-

QUERY-

```
> var v1 = function(){emit(this.Name,this.Salary)};
> var v2 = function(key,value){return Array.sum(value)};
> db.staff.mapReduce(v1,v2,{out : "Result"})
{
  "result" : "Result",
  "timeMillis" : 1043,
  "counts" : {
    "input" : 15,
    "emit" : 15,
    "reduce" : 0,
    "output" : 15
  },
  "ok" : 1
}
> db.Result.find().pretty();
```