

# EXERCISE - I

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Batch: C-2

## 1 Creating a database

> use supreetha\_company

Command Prompt - mongo

```
> use supreetha_company
switched to db supreetha_company
```

## 2 Queries

1. Populate the database with atleast 15 documents

> db.supreetha\_emp.insertOne({Name:{firstname:"Supreetha", middlename:"G", lastname:"S"}, Age:28, Salary:60000, Designation:"Full Stack Developer", Role:["Manager", "Tester"]})

```
{
  "acknowledged": true,
  "insertedId": ObjectId("62aebbc7322ba078c79c3027")
}
> db.supreetha_emp.insertOne({Name:{firstname:"Suhana",middlename:"V",lastname:"Menon"},Age:31,Salary:34500,Designation:"Engineer",Role:["UI Designer","Manager"]})
{
  "acknowledged": true,
  "insertedId": ObjectId("62aebc26322ba078c79c3028")
}
> db.supreetha_emp.insertOne({Name:{firstname:"Dhanush",middlename:"K",lastname:"M"},Age:28,Salary:55000,Designation:"Seniordev",Role:["Manager","Software Developer"]})
{
  "acknowledged": true,
  "insertedId": ObjectId("62aebc47322ba078c79c3029")
}
> db.supreetha_emp.insertOne({Name:{firstname:"Varun",middlename:"K",lastname:"Deshpande"},Age:24,Salary:29500,Designation:"Scientiist",Role:["Tester","Software Developer"]})
{
  "acknowledged": true,
  "insertedId": ObjectId("62aebc5322ba078c79c302a")
}
> db.supreetha_emp.insertOne({Name:{firstname:"Rohan",middlename:"M",lastname:"Pande"},Age:35,Salary:75000,Designation:"HR",Role:["Tester","Manager"]})
{
  "acknowledged": true,
  "insertedId": ObjectId("62aebf0d322ba078c79c302b")
}
> db.supreetha_emp.insertOne({Name:{firstname:"Lia",middlename:"J",lastname:"Sheroff"},Age:26,Salary:55650,Designation:"HR",Role:["Team Leader","UI Designer"]})
{
  "acknowledged": true,
  "insertedId": ObjectId("62aebf52322ba078c79c302c")
}
> db.supreetha_emp.insertOne({Name:{firstname:"Ajith",middlename:"R",lastname:"am"},Age:31,Salary:55650,Designation:"Full Stack Developer",Role:["Team Leader","Software Developer"]})
{
  "acknowledged": true,
  "insertedId": ObjectId("62aebfbc322ba078c79c302d")
}
> db.supreetha_emp.insertOne({Name:{firstname:"Taylor",middlename:"L",lastname:"Ross"},Age:27,Salary:57850,Designation:"Full Stack Developer",Role:["Team Leader","Tester"]})
{
  "acknowledged": true,
  "insertedId": ObjectId("62aec02c322ba078c79c302e")
}
> db.supreetha_emp.insertOne({Name:{firstname:"John",middlename:"A",lastname:"Cruise"},Age:29,Salary:60500,Designation:"HR",Role:["Team Leader","UI Designer"]})
{
```

Command Prompt - mongo

```
> db.supreetha_emp.insertOne({Name:{firstname:"John",middlename:"A",lastname:"Cruise"},Age:29,Salary:60500,Designation:"HR",Role:["Team Leader","UI Designer"]})
{
  "acknowledged" : true,
  "insertedId" : ObjectId("62aec073322ba078c79c302f")
}
> db.supreetha_emp.insertOne({Name:{firstname:"Virat",middlename:"K",lastname:"Kohli"},Age:26,Salary:45000,Designation:"HR",Role:["Manager","UI Designer"]})
{
  "acknowledged" : true,
  "insertedId" : ObjectId("62aec0c5322ba078c79c3030")
}
> db.supreetha_emp.insertOne({Name:{firstname:"Rohith",middlename:"S",lastname:"Sharma"},Age:26,Salary:25000,Designation:"Associate Engineer",Role:["Manager","Software Engineer"]})
{
  "acknowledged" : true,
  "insertedId" : ObjectId("62aec127322ba078c79c3031")
}
> db.supreetha_emp.insertOne({Name:{firstname:"Jos",middlename:"B",lastname:"Buttler"},Age:35,Salary:36000,Designation:"Associate Engineer",Role:["Team Leader","Software Engineer"]})
{
  "acknowledged" : true,
  "insertedId" : ObjectId("62aec163322ba078c79c3032")
}
> db.supreetha_emp.insertOne({Name:{firstname:"Glenn",middlename:"S",lastname:"Maxwell"},Age:35,Salary:66000,Designation:"HR",Role:["Manager","Tester"]})
{
  "acknowledged" : true,
  "insertedId" : ObjectId("62aec1a6322ba078c79c3033")
}
> db.supreetha_emp.insertOne({Name:{firstname:"Hardik",middlename:"F",lastname:"Pandya"},Age:33,Salary:43570,Designation:"Engineer",Role:["Software Engineer","Tester"]})
{
  "acknowledged" : true,
  "insertedId" : ObjectId("62aec1e9322ba078c79c3034")
}
```

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

> db.supreetha\_emp.find({\$and:{{"Salary":{\$gt:20000}},{"Salary":{\$lt:35000}}}})

```
> db.supreetha_emp.find({$and:{{"Salary":{$gt:20000}},{"Salary":{$lt:35000}}}})
{ "_id" : ObjectId("62aebbc7322ba078c79c3027"), "Name" : { "firstname" : "Rajesh", "middlename" : "R", "lastname" : "Rao" }, "Age" : 25, "Salary" : 30000, "Designation" : "Scientist", "Role" : [ "Tester", "Team Lead" ] }
{ "_id" : ObjectId("62aebc26322ba078c79c3028"), "Name" : { "firstname" : "Suhana", "middlename" : "V", "lastname" : "Menon" }, "Age" : 31, "Salary" : 34500, "Designation" : "Engineer", "Role" : [ "UI Designer", "Manager" ] }
{ "_id" : ObjectId("62aebc5322ba078c79c302a"), "Name" : { "firstname" : "Varun", "middlename" : "K", "lastname" : "Deshpande" }, "Age" : 24, "Salary" : 29500, "Designation" : "Scientist", "Role" : [ "Tester", "Software Developer" ] }
{ "_id" : ObjectId("62aec127322ba078c79c3031"), "Name" : { "firstname" : "Rohith", "middlename" : "S", "lastname" : "Sharma" }, "Age" : 26, "Salary" : 25000, "Designation" : "Associate Engineer", "Role" : [ "Manager", "Software Engineer" ] }
```

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

> db.supreetha\_emp.find({"Name.middlename":"Kumar"})

```
> db.supreetha_emp.find({"Name.middlename":"Kumar"})
{ "_id" : ObjectId("62aec127322ba078c79c3031"), "Name" : { "firstname" : "Rohith", "middlename" : "S", "lastname" : "Sharma" }, "Age" : 26, "Salary" : 25000, "Designation" : "Associate Engineer", "Role" : [ "Manager", "Software Engineer" ] }
{ "_id" : ObjectId("62aec1a6322ba078c79c3033"), "Name" : { "firstname" : "Glenn", "middlename" : "S", "lastname" : "Maxwell" }, "Age" : 35, "Salary" : 66000, "Designation" : "HR", "Role" : [ "Manager", "Tester" ] }
> db.supreetha_emp.find({$or:{{"Role":"Manager"},"Role":"Manager"}})
```

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

> db.supreetha\_emp.find({\$or:{{"Role":"Manager"},"Role":"Manager"}})

```
> db.supreetha_emp.find({$or:{{"Role":"Manager"},"Role":"Manager"}})
{ "_id" : ObjectId("62aebbc322ba078c79c3026"), "Name" : { "firstname" : "Supreetha", "middlename" : "G", "lastname" : "S" }, "Age" : 27, "Salary" : 60000, "Designation" : "Full Stack Developer", "Role" : [ "Manager", "Tester" ] }
{ "_id" : ObjectId("62aebc26322ba078c79c3028"), "Name" : { "firstname" : "Suhana", "middlename" : "V", "lastname" : "Menon" }, "Age" : 31, "Salary" : 34500, "Designation" : "Engineer", "Role" : [ "UI Designer", "Manager" ] }
{ "_id" : ObjectId("62aebc47322ba078c79c3029"), "Name" : { "firstname" : "Dhanush", "middlename" : "K", "lastname" : "M" }, "Age" : 28, "Salary" : 55000, "Designation" : "Seniordev", "Role" : [ "Manager", "Software Developer" ] }
{ "_id" : ObjectId("62aebf0d322ba078c79c302b"), "Name" : { "firstname" : "Rohan", "middlename" : "M", "lastname" : "Pande" }, "Age" : 35, "Salary" : 75000, "Designation" : "HR", "Role" : [ "Tester", "Manager" ] }
{ "_id" : ObjectId("62aec0c5322ba078c79c3030"), "Name" : { "firstname" : "Virat", "middlename" : "K", "lastname" : "Kohli" }, "Age" : 26, "Salary" : 45000, "Designation" : "HR", "Role" : [ "Manager", "UI Designer" ] }
{ "_id" : ObjectId("62aec127322ba078c79c3031"), "Name" : { "firstname" : "Rohith", "middlename" : "S", "lastname" : "Sharma" }, "Age" : 26, "Salary" : 25000, "Designation" : "Associate Engineer", "Role" : [ "Manager", "Software Engineer" ] }
{ "_id" : ObjectId("62aec1a6322ba078c79c3033"), "Name" : { "firstname" : "Glenn", "middlename" : "S", "lastname" : "Maxwell" }, "Age" : 35, "Salary" : 66000, "Designation" : "HR", "Role" : [ "Manager", "Tester" ] }
```

5. Find out all the documents who have age < 35 and salary in the range of 30000-35000

> db.supreetha\_emp.find({Salary:{\$gt:30000,\$lt:35000},Age:{\$lt:35}})

```
> db.supreetha_emp.find({Salary:{$gt:30000,$lt:35000},Age:{$lt:35}})
{ "_id" : ObjectId("62aebc26322ba078c79c3028"), "Name" : { "firstname" : "Suhana", "middlename" : "V", "lastname" : "Menon" }, "Age" : 31, "Salary" : 34500, "Designation" : "Engineer", "Role" : [ "UI Designer", "Manager" ] }
```

6. Delete an Employee whose "Firstname" is "Rajesh" and having the designation as "Scientist" > db.supreetha\_emp.deleteOne({\$and:[{"Name.firstname":"Rajesh"}, {"Designation": "Scientist"}]})

```
> db.supreetha_emp.deleteOne({$and:[{"Name.firstname":"Rajesh"}, {"Designation":"Scientist"}]})
{ "acknowledged" : true, "deletedCount" : 1 }
> db.supreetha_emp.updateMany({$and:[{"Role":"Team Leader":"Rajesh"},{$set:{"Salary":"55650"}}})
```

7. Update all the Employees whose role is "Team Lead" with a salary of 55650 INR db.supreetha\_emp.updateMany({Role:"Team Lead"},{\$set:{\$Salary:55650}})

```
> db.supreetha_emp.updateMany({Role:"Team Leader"},{$set:{$Salary:55650}})
{ "acknowledged" : true, "matchedCount" : 5, "modifiedCount" : 3 }
> db.supreetha_emp.find({Role:"Team Leader"})
{ "_id" : ObjectId("62aebf52322ba078c79c302c"), "Name" : { "firstname" : "Lia", "middlename" : "J", "lastname" : "Sheroff" }, "Age" : 26, "Salary" : 55650, "Designation" : "HR", "Role" : [ "Team Leader", "UI Designer" ], "Salary" : 55650 }
{ "_id" : ObjectId("62aebf52322ba078c79c302c"), "Name" : { "firstname" : "Ajith", "middlename" : "R", "lastname" : "am" }, "Age" : 31, "Salary" : 55650, "Designation" : "Full Stack Developer", "Role" : [ "Team Leader", "Software Developer" ], "Salary" : 55650 }
{ "_id" : ObjectId("62aeb02c322ba078c79c302e"), "Name" : { "firstname" : "Taylor", "middlename" : "L", "lastname" : "Ross" }, "Age" : 27, "Salary" : 55650, "Designation" : "Full Stack Developer", "Role" : [ "Team Leader", "Tester" ], "Salary" : 55650 }
{ "_id" : ObjectId("62aeb073322ba078c79c302f"), "Name" : { "firstname" : "John", "middlename" : "A", "lastname" : "Cruise" }, "Age" : 29, "Salary" : 55650, "Designation" : "HR", "Role" : [ "Team Leader", "UI Designer" ], "Salary" : 55650 }
{ "_id" : ObjectId("62aeb163322ba078c79c3032"), "Name" : { "firstname" : "Jos", "middlename" : "B", "lastname" : "Buttler" }, "Age" : 35, "Salary" : 55650, "Designation" : "Associate Engineer", "Role" : [ "Team Leader", "Software Engineer" ], "Salary" : 55650 }
```

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

> db.supreetha\_emp.aggregate([{\$group:{\$\_id: "\$Age",total:{\$avg: "\$Salary"}}}])

```
> db.supreetha_emp.aggregate([{$group:{$_id: "$Age",total:{$avg: "$Salary"}}}])
{ "_id" : 26, "total" : 41883.333333333336 }
{ "_id" : 27, "total" : 57825 }
{ "_id" : 31, "total" : 45075 }
{ "_id" : 35, "total" : 65550 }
{ "_id" : 29, "total" : 55650 }
{ "_id" : 24, "total" : 29500 }
{ "_id" : 33, "total" : 43570 }
{ "_id" : 28, "total" : 55000 }
```

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

> var mapfunction=function(){emit(this.Age,this.Salary)}

> var reducefunction=function(key,values){return Array.avg(values)}

> db.supreetha\_emp

```
> var mapfunction=function(){emit(this.Age,this.Salary)}
> var reducefunction=function(key,values){return Array.avg(values)}
> db.supreetha_emp.mapReduce(mapfunction,reducefunction,{out:'result'})
{ "result" : "result", "ok" : 1 }
> db.result.find()
{ "_id" : 27, "value" : 57825 }
{ "_id" : 29, "value" : 55650 }
{ "_id" : 31, "value" : 45075 }
{ "_id" : 35, "value" : 65550 }
{ "_id" : 24, "value" : 29500 }
{ "_id" : 33, "value" : 43570 }
{ "_id" : 28, "value" : 55000 }
{ "_id" : 26, "value" : 41883.333333333336 }
>
```