

Mock Assignment

Rupesh Dharme

TE 01

31124

Assignment allotted: 11

Problem Statement: Implement map-reduce operations using suitable examples using MongoDB.

Code:

```
# Rupesh Dharme
# 31124
# TE 01
# Mock Assignment 11

show dbs

use mock_assignment

db

db.students.insertMany([
{
name:'Rupesh',
marks:97,
Grade:'A+'
},
{
name:'Tanuj',
marks:83,
Grade:'C'
},
{
name:'Rajan',
marks:75,
Grade:'B'
},
{
name:'Rupesh',
marks:92,
```

```

Grade: 'A+'
},
{
name: 'Dheeraj',
marks: 95,
Grade: 'A+'
},
{
name: 'Rohan',
marks: 98,
Grade: 'A+'
}
])

db.students.find().pretty()

db.students.mapReduce(
function(){
    emit(this.name,this.marks);
},
function(key, value){
    return Array.sum(value)
},
{
query: {Grade: 'A+'},
out: 'totalMarks'
}
)

db.students.mapReduce(
function(){
    emit(this.name,this.marks);
},
function(key, value){
    return Array.sum(value)/value.length
},
{
query: {Grade: 'A+'},
out: 'averageMarks'
}
)

db.students.mapReduce(
function(){
    emit(this.name,this.Grade);

```

```
},
function(key, grade){
    if (grade == "A+") {
        return "Excellent";
    }
    else if (grade == "A") {
        return "Good";
    }
    else if (grade == "B") {
        return "Satisfactory";
    }
    else if (grade == "C") {
        return "Poor";
    }
    else {
        return "Invalid";
    }
},
{
    out: 'performance'
}
)

db.totalMarks.find().pretty()

db.averageMarks.find().pretty()

db.performance.find().pretty()
```

Output Screenshots: (Next Page)

```
> db
mock_assignment
>
> db.students.insertMany([
... {
...   name: 'Rupesh',
...   marks: 97,
...   Grade: 'A+'
... },
... {
...   name: 'Tanuj',
...   marks: 83,
...   Grade: 'C'
... },
... {
...   name: 'Rajan',
...   marks: 75,
...   Grade: 'B'
... },
... {
...   name: 'Rupesh',
...   marks: 92,
...   Grade: 'A+'
... },
... {
...   name: 'Dheeraj',
...   marks: 95,
...   Grade: 'A+'
... }
```



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```
> db.students.find().pretty()
```

```
{
  "_id" : ObjectId("61a451e306fb6d07ef993ed1"),
  "name" : "Rupesh",
  "marks" : 97,
  "Grade" : "A+"
}
{
  "_id" : ObjectId("61a451e306fb6d07ef993ed2"),
  "name" : "Tanuj",
  "marks" : 83,
  "Grade" : "C"
}
{
  "_id" : ObjectId("61a451e306fb6d07ef993ed3"),
  "name" : "Rajan",
  "marks" : 75,
  "Grade" : "B"
}
{
  "_id" : ObjectId("61a451e306fb6d07ef993ed4"),
  "name" : "Rupesh",
  "marks" : 92,
  "Grade" : "A+"
}
{
  "_id" : ObjectId("61a451e306fb6d07ef993ed5"),
  "name" : "Dheeraj",
```



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```
> db.students.mapReduce(  
... function(){  
...     emit(this.name,this.marks);  
... },  
... function(key, value){  
...     return Array.sum(value)  
... },  
... {  
... query:{Grade:'A+'},  
... out:'totalMarks'  
... }  
... )  
{ "result" : "totalMarks", "ok" : 1 }  
>  
> db.students.mapReduce(  
... function(){  
...     emit(this.name,this.marks);  
... },  
... function(key, value){  
...     return Array.sum(value)/value.length  
... },  
... {  
... query:{Grade:'A+'},  
... out:'averageMarks'  
... }  
... )  
{ "result" : "averageMarks", "ok" : 1 }  
>
```



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```
>
> db.students.mapReduce(
...  function(){
...      emit(this.name,this.Grade);
...  },
...  function(key, grade){
...      if (grade == "A+") {
...          return "Excellent";
...      }
...      else if (grade == "A") {
...          return "Good";
...      }
...      else if (grade == "B") {
...          return "Satisfactory";
...      }
...      else if (grade == "C") {
...          return "Poor";
...      }
...      else {
...          return "Invalid";
...      }
...  },
...  {
...      out:'performance'
...  }
... )
{ "result" : "performance", "ok" : 1 }
>
```



```
> db.totalMarks.find().pretty()
{ "_id" : "Rupesh", "value" : 189 }
{ "_id" : "Rohan", "value" : 98 }
{ "_id" : "Dheeraj", "value" : 95 }
>
> db.averageMarks.find().pretty()
{ "_id" : "Rupesh", "value" : 94.5 }
{ "_id" : "Rohan", "value" : 98 }
{ "_id" : "Dheeraj", "value" : 95 }
>
> db.performance.find().pretty()
{ "_id" : "Tanuj", "value" : "Poor" }
{ "_id" : "Rajan", "value" : "Satisfactory" }
{ "_id" : "Rupesh", "value" : "Invalid" }
{ "_id" : "Rohan", "value" : "Excellent" }
{ "_id" : "Dheeraj", "value" : "Excellent" }
>
```



Output:

```
> use mock_assignment
```

```
switched to db mock_assignment
```

```
>
```

```
> db
```

```
mock_assignment
```

```
>
```

```
> db.students.insertMany([
```

```
... {
```

```
... name:'Rupesh',
```

```
... marks:97,
```

```
... Grade:'A+'
```

```
... },
```

```
... {
```

```
... name:'Tanuj',
```

```
... marks:83,
```

```
... Grade:'C'
```

```
... },
```

```
... {
```

```
... name:'Rajan',
```

```
... marks:75,
```

```
... Grade:'B'
```

```
... },
```

```
... {
```

```
... name:'Rupesh',
```

```
... marks:92,
```

```
... Grade:'A+'
```

```
... },
```

```
... {
```

```
... name:'Dheeraj',
```

```
... marks:95,
```

```
... Grade:'A+'
```

```
... },
```

```
... {
```

```
... name:'Rohan',
```

```
... marks:98,
```

```
... Grade:'A+'
```

```
... }
```

```
... ]))
{
  "acknowledged" : true,
  "insertedIds" : [
    ObjectId("61a451e306fb6d07ef993ed1"),
    ObjectId("61a451e306fb6d07ef993ed2"),
    ObjectId("61a451e306fb6d07ef993ed3"),
    ObjectId("61a451e306fb6d07ef993ed4"),
    ObjectId("61a451e306fb6d07ef993ed5"),
    ObjectId("61a451e306fb6d07ef993ed6")
  ]
}
>
> db.students.find().pretty()
{
  "_id" : ObjectId("61a451e306fb6d07ef993ed1"),
  "name" : "Rupesh",
  "marks" : 97,
  "Grade" : "A+"
}
{
  "_id" : ObjectId("61a451e306fb6d07ef993ed2"),
  "name" : "Tanuj",
  "marks" : 83,
  "Grade" : "C"
}
{
  "_id" : ObjectId("61a451e306fb6d07ef993ed3"),
  "name" : "Rajan",
  "marks" : 75,
  "Grade" : "B"
}
{
  "_id" : ObjectId("61a451e306fb6d07ef993ed4"),
  "name" : "Rupesh",
  "marks" : 92,
  "Grade" : "A+"
}
```

```
{
  "_id" : ObjectId("61a451e306fb6d07ef993ed5"),
  "name" : "Dheeraj",
  "marks" : 95,
  "Grade" : "A+"
}
```

```
{
  "_id" : ObjectId("61a451e306fb6d07ef993ed6"),
  "name" : "Rohan",
  "marks" : 98,
  "Grade" : "A+"
}
```

```
}
```

```
>
```

```
> db.students.mapReduce(
... function(){
...   emit(this.name,this.marks);
... },
... function(key, value){
...   return Array.sum(value)
... },
... {
...   query:{Grade:'A+'},
...   out:'totalMarks'
... }
... )
{ "result" : "totalMarks", "ok" : 1 }
```

```
>
```

```
> db.students.mapReduce(
... function(){
...   emit(this.name,this.marks);
... },
... function(key, value){
...   return Array.sum(value)/value.length
... },
... {
...   query:{Grade:'A+'},
...   out:'averageMarks'
... }
```

```

... )
{ "result" : "averageMarks", "ok" : 1 }
>
> db.students.mapReduce(
... function(){
...   emit(this.name,this.Grade);
... },
... function(key, grade){
...   if (grade == "A+") {
...     return "Excellent";
... }
... else if (grade == "A") {
...   return "Good";
... }
... else if (grade == "B") {
...   return "Satisfactory";
... }
... else if (grade == "C") {
...   return "Poor";
... }
... else {
...   return "Invalid";
... }
... },
... {
... out:'performance'
... }
... )
{ "result" : "performance", "ok" : 1 }
>
> db.totalMarks.find().pretty()
{ "_id" : "Rupesh", "value" : 189 }
{ "_id" : "Rohan", "value" : 98 }
{ "_id" : "Dheeraj", "value" : 95 }
>
> db.averageMarks.find().pretty()
{ "_id" : "Rupesh", "value" : 94.5 }
{ "_id" : "Rohan", "value" : 98 }

```

```
{ "_id" : "Dheeraj", "value" : 95 }
```

```
>
```

```
> db.performance.find().pretty()
```

```
{ "_id" : "Tanuj", "value" : "Poor" }
```

```
{ "_id" : "Rajan", "value" : "Satisfactory" }
```

```
{ "_id" : "Rupesh", "value" : "Invalid" }
```

```
{ "_id" : "Rohan", "value" : "Excellent" }
```

```
{ "_id" : "Dheeraj", "value" : "Excellent" }
```

```
>
```