

MongoDB Mapreduce

Mapreduce is a programming model for processing large amount of data into useful aggregate result.

Monogodb uses mapReduce command for map-reduce operations

mapReduce has two components.

- 1. Mapper**
- 2. Reducer**

Mapper: used to emit (produce) the documents as per the query into key-value pairs

Reducer: to performs aggregate function over the emitted results

Syntax:

```
db.collectionname.mapReduce (  
  
function( ) { emit ( key, value);} , // map function  
function( Key, Values) { return reduceFunction} , // reduce function  
  
{  
  
Out: Collection,  
Query: document filter,  
Sort: document,  
Limit: number  
}  
  
);
```

Map is a JS function that maps a value with key and emits key-value pairs

Out: Location of map reduce location

Query: specifies a condition

Sort:

limit:

```
db.review.insert( { Uid: "sai",  
                    Comment:" The Product is good",  
                    status:"Active"  
                } );
```

```
db.review.insert( { Uid: "sai",  
                    Comment:" The Product is Nice",  
                    status:"INActive"  
                } );
```

```
db.review.insert( { Uid: "ram",  
                    Comment:" Excellent",  
                    status:"Active"  
                } );
```

```
db.review.insert( { Uid: "ram",  
                    Comment:" superb",  
                    status:"Active"  
                } );
```

```
> db.review.find().pretty()  
{  
  "_id" : ObjectId("5fbe06d385ffe6aac7840a70"),  
  "Uid" : "sai",  
  "Comment" : "The Product is good",  
  "status" : "Active"  
}  
{  
  "_id" : ObjectId("5fbe06e185ffe6aac7840a71"),  
  "Uid" : "sai",  
  "Comment" : "The Product is Nice",  
  "status" : "InActive"  
}  
{  
  "_id" : ObjectId("5fbe06f085ffe6aac7840a72"),  
  "Uid" : "ram",  
  "Comment" : "The Product is Nice",  
  "status" : "Active"  
}  
{  
  "_id" : ObjectId("5fbe06fa85ffe6aac7840a73"),  
  "Uid" : "ram",  
  "Comment" : "Superb",
```

```
    "status" : "Active"
  }
}
```

Count the Active Comments by each user

```
db.review.mapReduce (
function( ) { emit (this.Uid,1);},
function(key,values) { return Array.sum(values)},
{
  query: {status:"Active"},
  out:"Active_review"
}
).find()
```

```
> db.review.mapReduce ( function( ) { emit (this.Uid,1);}, function(key,values) { return
Array.sum(values)}, { query: {status:"Active"}, out:"Active_review" } );
{
  "result" : "Active_review",
  "timeMillis" : 880,
  "counts" : {
    "input" : 3,
    "emit" : 3,
    "reduce" : 1,
    "output" : 2
  },
  "ok" : 1
}
> show collections;
Active_review
```

```
> db.Active_review.find();
{ "_id" : "ram", "value" : 2 }
{ "_id" : "sai", "value" : 1 }
```

```

Collection
↓
db.orders.mapReduce(
  map   → function() { emit( this.cust_id, this.amount ); },
  reduce → function(key, values) { return Array.sum( values ) },
  {
    query → { status: "A" },
    output → "order_totals"
  }
)

```

