**Assignment 2**

Name: Jain Samkitkumar Hasmukhlal

Class: TEIT Roll. No.: 20 Batch: T1

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Implement Map reduces operation with suitable example using MongoDB.

> show databases;

admin (empty)

local 0.078GB

te20 0.078GB

> use te20;

switched to db te20

> show collections;

system.indexes

teacher\_info

> db.createCollection("PopulationDB");

{ "ok" : 1 }

> db.PopulationDB.insert({state:"Maharashtra",pop:10000});

WriteResult({ "nInserted" : 1 })

> db.PopulationDB.insert({state:"Goa",pop:5000});

WriteResult({ "nInserted" : 1 })

> db.PopulationDB.insert({state:"Bihar",pop:15000});

WriteResult({ "nInserted" : 1 })

> db.PopulationDB.insert({state:"Punjab",pop:34500});

WriteResult({ "nInserted" : 1 })

> db.PopulationDB.find();

{ "\_id" : ObjectId("55deaec822aeb827c1d9a31c"), "state" : "Maharashtra", "pop" :

10000 }

{ "\_id" : ObjectId("55deaed822aeb827c1d9a31d"), "state" : "Goa", "pop" : 5000 }

{ "\_id" : ObjectId("55deaee522aeb827c1d9a31e"), "state" : "Bihar", "pop" : 15000

}

{ "\_id" : ObjectId("55deaef322aeb827c1d9a31f"), "state" : "Punjab", "pop" : 3450

0 }

> var reduceFunc=function(pop){return Array.sum(pop);}

> var mapFunc=function(){emit("india",this.pop);};

> db.PopulationDB.mapReduce(mapFunc,reduceFunc,{out:"tot\_pop"})

{

"result" : "tot\_pop",

"timeMillis" : 76,

"counts" : {

"input" : 4,

"emit" : 4,

"reduce" : 1,

"output" : 1

},

"ok" : 1,

}

> db.tot\_pop.find()

{ "\_id" : "india", "value" : 64500 }

> db.PopulationDB.update({pop:{$gt:1}},{$set:{country:"India"}},{multi:true});

WriteResult({ "nMatched" : 4, "nUpserted" : 0, "nModified" : 4 })

> db.PopulationDB.find();

{ "\_id" : ObjectId("55deaec822aeb827c1d9a31c"), "state" : "Maharashtra", "pop" :

10000, "country" : "India" }

{ "\_id" : ObjectId("55deaed822aeb827c1d9a31d"), "state" : "Goa", "pop" : 5000, "

country" : "India" }

{ "\_id" : ObjectId("55deaee522aeb827c1d9a31e"), "state" : "Bihar", "pop" : 15000

, "country" : "India" }

{ "\_id" : ObjectId("55deaef322aeb827c1d9a31f"), "state" : "Punjab", "pop" : 3450

0, "country" : "India" }

> db.PopulationDB.insert({state:"ch",pop:150000,country:"China"});

WriteResult({ "nInserted" : 1 })

> db.PopulationDB.insert({state:"in",pop:15000,country:"China"});

WriteResult({ "nInserted" : 1 })

> db.PopulationDB.insert({state:"a",pop:1500,country:"China"});

WriteResult({ "nInserted" : 1 })

> db.PopulationDB.insert({state:"ame",pop:70000,country:"America"});

WriteResult({ "nInserted" : 1 })

> db.PopulationDB.insert({state:"rica",pop:7000,country:"America"});

WriteResult({ "nInserted" : 1 })

> db.PopulationDB.find();

{ "\_id" : ObjectId("55deaec822aeb827c1d9a31c"), "state" : "Maharashtra", "pop" :

10000, "country" : "India" }

{ "\_id" : ObjectId("55deaed822aeb827c1d9a31d"), "state" : "Goa", "pop" : 5000, "

country" : "India" }

{ "\_id" : ObjectId("55deaee522aeb827c1d9a31e"), "state" : "Bihar", "pop" : 15000

, "country" : "India" }

{ "\_id" : ObjectId("55deaef322aeb827c1d9a31f"), "state" : "Punjab", "pop" : 3450

0, "country" : "India" }

{ "\_id" : ObjectId("55deb51522aeb827c1d9a320"), "state" : "ch", "pop" : 150000,

"country" : "China" }

{ "\_id" : ObjectId("55deb51e22aeb827c1d9a321"), "state" : "in", "pop" : 15000, "

country" : "China" }

{ "\_id" : ObjectId("55deb52622aeb827c1d9a322"), "state" : "a", "pop" : 1500, "co

untry" : "China" }

{ "\_id" : ObjectId("55deb54b22aeb827c1d9a323"), "state" : "ame", "pop" : 70000,

"country" : "America" }

{ "\_id" : ObjectId("55deb55322aeb827c1d9a324"), "state" : "rica", "pop" : 7000,

"country" : "America" }

> var reduce1Func=function(pop){return Array.sum(pop);}

> var map1Func=function(){emit(this.country,this.pop);};

> db.PopulationDB.mapReduce(map1Func,reduce1Func,{out:"tot\_country\_pop"})

{

"result" : "tot\_country\_pop",

"timeMillis" : 168,

"counts" : {

"input" : 9,

"emit" : 9,

"reduce" : 3,

"output" : 3

},

"ok" : 1,

}

> db.tot\_country\_pop.find();

{ "\_id" : "America", "value" : 77000 }

{ "\_id" : "China", "value" : 166500 }

{ "\_id" : "India", "value" : 64500 }

> db.createCollection("College");

{ "ok" : 1 }

> db.College.insert({dept:"it",class:"te",count:84});

WriteResult({ "nInserted" : 1 })

> db.College.insert({dept:"it",class:"se",count:70});

WriteResult({ "nInserted" : 1 })

> db.College.insert({dept:"it",class:"be",count:50});

WriteResult({ "nInserted" : 1 })

> db.College.insert({dept:"it",class:"fe",count:90});

WriteResult({ "nInserted" : 1 })

> db.College.insert({dept:"comp",class:"fe",count:90});

WriteResult({ "nInserted" : 1 })

> db.College.insert({dept:"comp",class:"be",count:50});

WriteResult({ "nInserted" : 1 })

> db.College.insert({dept:"comp",class:"se",count:70});

WriteResult({ "nInserted" : 1 })

> db.College.insert({dept:"comp",class:"te",count:84});

WriteResult({ "nInserted" : 1 })

> db.College.find();

{ "\_id" : ObjectId("55deb83f22aeb827c1d9a325"), "dept" : "it", "class" : "te", "

count" : 84 }

{ "\_id" : ObjectId("55deb84a22aeb827c1d9a326"), "dept" : "it", "class" : "se", "

count" : 70 }

{ "\_id" : ObjectId("55deb85222aeb827c1d9a327"), "dept" : "it", "class" : "be", "

count" : 50 }

{ "\_id" : ObjectId("55deb89322aeb827c1d9a328"), "dept" : "it", "class" : "fe", "

count" : 90 }

{ "\_id" : ObjectId("55deb8b422aeb827c1d9a329"), "dept" : "comp", "class" : "fe",

"count" : 90 }

{ "\_id" : ObjectId("55deb8c222aeb827c1d9a32a"), "dept" : "comp", "class" : "be",

"count" : 50 }

{ "\_id" : ObjectId("55deb8d022aeb827c1d9a32b"), "dept" : "comp", "class" : "se",

"count" : 70 }

{ "\_id" : ObjectId("55deb8d922aeb827c1d9a32c"), "dept" : "comp", "class" : "te",

"count" : 84 }

> var reduce2Func=function(count){return Array.sum(count);}

> var map2Func=function(){emit(this.dept,this.count);};

> db.College.mapReduce(map2Func,reduce2Func,{out:"tot\_count"})

{

"result" : "tot\_count",

"timeMillis" : 53,

"counts" : {

"input" : 8,

"emit" : 8,

"reduce" : 2,

"output" : 2

},

"ok" : 1,

}

> db.tot\_count.find();

{ "\_id" : "comp", "value" : 294 }

{ "\_id" : "it", "value" : 294 }