**Name :** Rohit Bangar **Class :** TE-C **Roll No :** TECOC306 **Batch :** C1

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**Assignment-10**

**1. Consider each document in the zipcode collection has the following form:**

{

"\_id": "10280",

"city": "NEW YORK",

"state": "NY",

"pop": 5574,

}

**Return States with Populations above 10 Million**

**> db.createCollection("Zipcode");**

{ "ok" : 1 }

**> db.Zipcode.insert({\_id:"1",city:"Pune",state:"Maharashtra",pop:58000});**

> db.Zipcode.insert({\_id:"2",city:"Mumbai",state:"Maharashtra",pop:80000});

> db.Zipcode.insert({\_id:"3",city:"Jaipur",state:"Rajasthan",pop:150000});

> db.Zipcode.insert({\_id:"4",city:"Udaipur",state:"Rajasthan",pop:98000});

> db.Zipcode.insert({\_id:"5",city:"Ahemdabad",state:"Gujarat",pop:49000});

> db.Zipcode.insert({\_id:"6",city:"Surat",state:"Gujarat",pop:56000});

**> db.Zipcode.find().pretty();**

{ "\_id" : "1", "city" : "Pune", "state" : "Maharashtra", "pop" : 58000 }

{ "\_id" : "2", "city" : "Mumbai", "state" : "Maharashtra", "pop" : 80000 }

{ "\_id" : "3", "city" : "Jaipur", "state" : "Rajasthan", "pop" : 150000 }

{ "\_id" : "4", "city" : "Udaipur", "state" : "Rajasthan", "pop" : 98000 }

{ "\_id" : "5", "city" : "Ahemdabad", "state" : "Gujarat", "pop" : 49000 }

{ "\_id" : "6", "city" : "Surat", "state" : "Gujarat", "pop" : 56000 }

**> db.Zipcode.aggregate({$group:{\_id:"$state",total:{$sum:"$pop"}}});**

{

"result" : [

{

"\_id" : "Gujarat",

"total" : 105000

},

{

"\_id" : "Rajasthan",

"total" : 248000

},

{

"\_id" : "Maharashtra",

"total" : 138000

}

],

"ok" : 1

}

**> db.Zipcode.aggregate({$group:{\_id:"$state",total:{$sum:"$pop"}}},{$match:{total:{$gte:115000}}});**

{

"result" : [

{

"\_id" : "Rajasthan",

"total" : 248000

},

{

"\_id" : "Maharashtra",

"total" : 138000

}

],

"ok" : 1

}

**2. Display the department wise average salary**

**> db.Teachers.aggregate({$group:{\_id:"$dname",avg\_sal:{$avg:"$salary"}}});**

{

"result" : [

{

"\_id" : "IT",

"avg\_sal" : 57500

},

{

"\_id" : "EnTc",

"avg\_sal" : 62500

},

{

"\_id" : "Comp",

"avg\_sal" : 25000

}

],

"ok" : 1

}

**3. display the no. Of employees working in each department**

**> db.Teachers.aggregate({$group:{\_id:"$dname",no\_of\_emp:{$sum:1}}});**

{

"result" : [

{

"\_id" : "IT",

"no\_of\_emp" : 3

},

{

"\_id" : "EnTc",

"no\_of\_emp" : 3

},

{

"\_id" : "Comp",

"no\_of\_emp" : 5

}

],

"ok" : 1

}

**4. Display the department wise total salary of departments having total salary greater than or equals to 50000/-**

**> db.Teachers.aggregate({$group:{\_id:"$dname",total\_sal:{$sum:"$salary"}}});**

{

"result" : [

{

"\_id" : "IT",

"total\_sal" : 115000

},

{

"\_id" : "EnTc",

"total\_sal" : 125000

},

{

"\_id" : "Comp",

"total\_sal" : 25000

}

],

"ok" : 1

}

**> db.Teachers.aggregate({$group:{\_id:"$dname",total\_sal:{$sum:"$salary"}}},{$match:{total\_sal:{$gte:50000}}});**

{

"result" : [

{

"\_id" : "IT",

"total\_sal" : 115000

},

{

"\_id" : "EnTc",

"total\_sal" : 125000

}

],

"ok" : 1

}

**6. Create the simple index on roll\_no field**

**> db.Students.ensureIndex({roll\_no:1});**

**7. create unique index on any field for above given collections**

**> db.Students.ensureIndex({Sname:1,unique:true});**

**8. create compound index on any fields for above given collections**

**> db.Students.ensureIndex({class:1,compound:true});**

**9. Show all the indexes created in the database PCCOE**

**> db.system.indexes.find();**

{ "v" : 1, "key" : { "\_id" : 1 }, "ns" : "PCCOE.Teacher", "name" : "\_id\_" }

{ "v" : 1, "key" : { "\_id" : 1 }, "ns" : "PCCOE.Student", "name" : "\_id\_" }

{ "v" : 1, "key" : { "\_id" : 1 }, "ns" : "PCCOE.Teachers", "name" : "\_id\_" }

{ "v" : 1, "key" : { "\_id" : 1 }, "ns" : "PCCOE.Students", "name" : "\_id\_" }

{ "v" : 1, "key" : { "\_id" : 1 }, "ns" : "PCCOE.Employee", "name" : "\_id\_" }

{ "v" : 1, "key" : { "\_id" : 1 }, "ns" : "PCCOE.employee", "name" : "\_id\_" }

{ "v" : 1, "key" : { "empname" : 1 }, "ns" : "PCCOE.employee", "name" : "empname\_1" }

{ "v" : 1, "key" : { "empname" : 1 }, "ns" : "PCCOE.Employee", "name" : "empname\_1" }

{ "v" : 1, "key" : { "\_id" : 1 }, "ns" : "PCCOE.Zipcode", "name" : "\_id\_" }

{ "v" : 1, "key" : { "roll\_no" : 1 }, "ns" : "PCCOE.Students", "name" : "roll\_no\_1" }

{ "v" : 1, "key" : { "Sname" : 1, "unique" : true }, "ns" : "PCCOE.Students", "name" : "Sname\_1\_unique\_true" }

{ "v" : 1, "key" : { "class" : 1, "compound" : true }, "ns" : "PCCOE.Students", "name" : "class\_1\_compound\_true" }

**10. Show all the indexes created in above collections.**

**> db.Students.getIndexes();**

[

{

"v" : 1,

"key" : {

"\_id" : 1

},

"ns" : "PCCOE.Students",

"name" : "\_id\_"

},

{

"v" : 1,

"key" : {

"roll\_no" : 1

},

"ns" : "PCCOE.Students",

"name" : "roll\_no\_1"

},

{

"v" : 1,

"key" : {

"Sname" : 1,

"unique" : true

},

"ns" : "PCCOE.Students",

"name" : "Sname\_1\_unique\_true"

},

{

"v" : 1,

"key" : {

"class" : 1,

"compound" : true

},

"ns" : "PCCOE.Students",

"name" : "class\_1\_compound\_true"

}

]