**ASSIGNMENT NO:10**

Name:Mrunal R Somankar

Roll No:TCOA46

**Perform aggregation and Indexing using mongodb on below database**

**1. Create a database department**

test> use department

switched to db department

**2. Create a collection as teacher with fields as name , department ,experience and salary**

department> db.createCollection("teacher")

{ ok: 1 }

department> db.teacher.insertMany([

... {

... "name": "John Doe",

... "department": "CSE",

... "experience": 10,

... "salary": 100000

... },

... {

... "name": "Jane Danny",

... "department": "ECE",

... "experience": 5,

... "salary": 750 },

... {

... "name": "Peter Smith",

... "department": "CSE",

... "experience": 8,

... "salary": 90000

... },

... {

... "name": "Sarah Jones",

... "department": "ECE",

... "experience": 6,

... "salary": 80000

... }

... ])

{

acknowledged: true,

insertedIds: {

'0': ObjectId("65367919638c33fba3c0d71a"),

'1': ObjectId("65367919638c33fba3c0d71b"),

'2': ObjectId("65367919638c33fba3c0d71c"),

'3': ObjectId("65367919638c33fba3c0d71d")

}

}

department> db.teacher.find()

[

{

\_id: ObjectId("65367919638c33fba3c0d71a"),

name: 'John Doe',

department: 'CSE',

experience: 10,

salary: 100000

},

{

\_id: ObjectId("65367919638c33fba3c0d71b"),

name: 'Jane Danny',

department: 'ECE',

experience: 5,

salary: 750

},

{

\_id: ObjectId("65367919638c33fba3c0d71c"),

name: 'Peter Smith',

department: 'CSE',

experience: 8,

salary: 90000

},

{

\_id: ObjectId("65367919638c33fba3c0d71d"),

name: 'Sarah Jones',

department: 'ECE',

experience: 6,

salary: 80000

}

]

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

department> db.teacher.aggregate([

... {

... "$group": {

... "\_id": "$department",

... "averageSalary": {

... "$avg": "$salary"

... }

... }

... }

... ])

[

{ \_id: 'ECE', averageSalary: 40375 },

{ \_id: 'CSE', averageSalary: 95000 }

]

**4. Display the no. Of employees working in each department.**

department> db.teacher.aggregate([

... {

... "$group": {

... "\_id": "$department",

... "count": {

... "$sum": 1

... }

... }

... }

... ])

[ { \_id: 'CSE', count: 2 }, { \_id: 'ECE', count: 2 } ]

**5. Display the department wise minimum salary.**

department> db.teacher.aggregate([

... {

... "$group": {

... "\_id": "$department",

... "minimumSalary": {

... "$min": "$salary"

... }

... }

... }

... ])

[

{ \_id: 'ECE', minimumSalary: 750 },

{ \_id: 'CSE', minimumSalary: 90000 }

]

**6. Apply index and drop index**

department> db.teacher.createIndex({"department": 1})

department\_1

department> db.teacher.dropIndex({"department": 1})

{ nIndexesWas: 2, ok: 1 }