**Name: Aditya Shankar Khorne TE-C-06**

**Assignment:- 11**

1. **Create a collection named "Computer":**

> db.createCollection("Computer")

{ "ok" : 1 }

1. **Insert multiple documents into the "Computer" collection:**

> db.Computer.insertMany([{Name:"SDB",Designation:"HOD",Age:40,Salary:90000},{Name:"SBN",Designation:"Asso Prof",Age:40,Salary:85000},{Name:"JSC",Designation:"Asst Prof",Age:30,Salary:75000}]):85000

{

"acknowledged" : true,

"insertedIds" : [

ObjectId("6707b964a2df0be884326651"),

ObjectId("6707b964a2df0be884326652"),

ObjectId("6707b964a2df0be884326653")

]

}

1. **Create an index on the "Name" field in ascending order:**

> db.Computer.createIndex({Name:1})

{

"numIndexesBefore" : 1,

"numIndexesAfter" : 2,

"createdCollectionAutomatically" : false,

"ok" : 1

}

1. **Create an index on the "Age" and "Salary" fields (ascending and descending order respectively):**

> db.Computer.createIndex({Age:1,Salary:-1})

{

"numIndexesBefore" : 2,

"numIndexesAfter" : 3,

"createdCollectionAutomatically" : false,

"ok" : 1

}

1. **View existing indexes on the "Computer" collection:**

> db.Computer.getIndexes()

[

{

"v" : 2,

"key" : {

"\_id" : 1

},

"name" : "\_id\_"

},

{

"v" : 2,

"key" : {

"Name" : 1

},

"name" : "Name\_1"

},

{

"v" : 2,

"key" : {

"Age" : 1,

"Salary" : -1

},

"name" : "Age\_1\_Salary\_-1"

}

]

1. **Drop the index on "Age" and "Salary":**

> db.Computer.dropIndex({Age:1,Salary:-1})

{ "nIndexesWas" : 3, "ok" : 1 }

1. **Drop the index on "Name":**

> db.Computer.dropIndex({Name:1})

{ "nIndexesWas" : 2, "ok" : 1 }

1. **Aggregation - Match documents where "Age" is greater than 35:**

> db.Computer.aggregate([ { $match: { Age: { $gt: 35 } } } ])

{ "\_id" : ObjectId("6707b964a2df0be884326651"), "Name" : "SDB", "Designation" : "HOD", "Age" : 40, "Salary" : 90000 }

{ "\_id" : ObjectId("6707b964a2df0be884326652"), "Name" : "SBN", "Designation" : "Asso Prof", "Age" : 40, "Salary" : 85000 }

1. **Aggregation - Group by "Designation" and calculate the average salary:**

> db.Computer.aggregate([ { $match: { Age: { $gt: 35 } } } ])

{ "\_id" : ObjectId("6707b964a2df0be884326651"), "Name" : "SDB", "Designation" : "HOD", "Age" : 40, "Salary" : 90000 }

{ "\_id" : ObjectId("6707b964a2df0be884326652"), "Name" : "SBN", "Desdb.Computer.aggregate([ { $group: { \_id: "$Designation", avgSalary: { $avg: "$Salary" } } } ])roup: { \_id: "$Designation", avgSala

{ "\_id" : "Asst Prof", "avgSalary" : 75000 }

{ "\_id" : "HOD", "avgSalary" : 90000 }

{ "\_id" : "Asso Prof", "avgSalary" : 85000 }

1. **Aggregation - Sort by "Salary" in descending order:**

> db.Computer.aggregate([ { $match: { Age: { $gt: 35 } } } ])

{ "\_id" : ObjectId("6707b964a2df0be884326651"), "Name" : "SDB", "Designation" : "HOD", "Age" : 40, "Salary" : 90000 }

{ "\_id" : ObjectId("6707b964a2df0be884326652"), "Name" : "SBN", "Desdb.Computer.aggregate([ { $group: { \_id: "$Designation", avgSalary: { $avg: "$Salary" } } } ])roup: { \_id: "$Designation", avgSala

{ "\_id" : "Asst Prof", "avgSalary" : 75000 }

{ "\_id" : "HOD", "avgSalary" : 90000 }

{ "\_id" : "Asso Prof", "avgSalary" : 85000 }

> db.Computer.aggregate([ { $sort: { Salary: -1 } } ])

{ "\_id" : ObjectId("6707b964a2df0be884326651"), "Name" : "SDB", "Designation" : "HOD", "Age" : 40, "Salary" : 90000 }

{ "\_id" : ObjectId("6707b964a2df0be884326652"), "Name" : "SBN", "Designation" : "Asso Prof", "Age" : 40, "Salary" : 85000 }

{ "\_id" : ObjectId("6707b964a2df0be884326653"), "Name" : "JSC", "Designation" : "Asst Prof", "Age" : 30, "Salary" : 75000 }

1. **Aggregation - Project to rename "Name" to "EmployeeName" and display "Age" and "Salary":**

> db.Computer.aggregate([ { $sort: { Salary: -1 } } ])

{ "\_id" : ObjectId("6707b964a2df0be884326651"), "Name" : "SDB", "Designation" : "HOD", "Age" : 40, "Salary" : 90000 }

{ "\_id" : ObjectId("6707b964a2df0be884326652"), "Name" : "SBN", "Designation" : "Asso Prof", "Age" : 40, "Salary" : 85000 }

{ "\_id" : ObjectId("6707b964a2df0be884326653"), "Name" : "JSC", "Desdb.Computer.aggregate([{$project: { EmployeeName: "$Name", Age: 1, Salary: 1, \_id: 0 } } ])project: { EmployeeName: "$Name", Age:

{ "Age" : 40, "Salary" : 90000, "EmployeeName" : "SDB" }

{ "Age" : 40, "Salary" : 85000, "EmployeeName" : "SBN" }

{ "Age" : 30, "Salary" : 75000, "EmployeeName" : "JSC" }

1. **Aggregation - Group all documents and calculate total salary, average age, and min/max salary:**

> db.Computer.aggregate([ { $sort: { Salary: -1 } } ])

{ "\_id" : ObjectId("6707b964a2df0be884326651"), "Name" : "SDB", "Designation" : "HOD", "Age" : 40, "Salary" : 90000 }

{ "\_id" : ObjectId("6707b964a2df0be884326652"), "Name" : "SBN", "Designation" : "Asso Prof", "Age" : 40, "Salary" : 85000 }

{ "\_id" : ObjectId("6707b964a2df0be884326653"), "Name" : "JSC", "Desdb.Computer.aggregate([{$project: { EmployeeName: "$Name", Age: 1,db.Computer.aggregate([ { $group: { \_id: null, totalSalary: { $sum: "$Salary" }, avgAge: { $avg: "$Age" }, minSalary: { $min: "$Salary" }, maxSalary: { $max: "$Salary" }, firstDesignation: { $first: "$Designation" }, lastDesignation: { $last: "$Designation" } } } ])$Designation" }, lastDesignation: { $last: "$Designation" } }

{ "\_id" : null, "totalSalary" : 250000, "avgAge" : 36.666666666666664, "minSalary" : 75000, "maxSalary" : 90000, "firstDesignation" : "HOD", "lastDesignation" : "Asst Prof" }

1. **Count the total number of documents in the "Computer" collection:**

> db.Computer.count()

3