**Assignment 11**

**Indexing :**

> db.student.createIndex({Roll:1})

{

"createdCollectionAutomatically" : true,

"numIndexesBefore" : 1,

"numIndexesAfter" : 2,

"ok" : 1

}

> db.student.dropIndex({Roll:1})

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

> db.Student.createIndex({Marks:1})

{

"createdCollectionAutomatically" : false,

"numIndexesBefore" : 1,

"numIndexesAfter" : 2,

"ok" : 1

}

> db.Student.find().sort({Marks:1})

{ "\_id" : ObjectId("5b936e207ee924f248ecc1bc"), "Roll" : 302, "Name" : "Kavita", "Branch" : "Civil",

"Marks" : 850 }

{ "\_id" : ObjectId("5b936e207ee924f248ecc1be"), "Roll" : 108, "Name" : "Abhijit", "Branch" :

"Mech",

"Marks" : 904 }

{ "\_id" : ObjectId("5b936e207ee924f248ecc1bb"), "Roll" : 201, "Name" : "Pallavi", "Branch" :

"Comp",

"Marks" : 960 }

{ "\_id" : ObjectId("5b936e207ee924f248ecc1bd"), "Roll" : 405, "Name" : "Pooja", "Branch" : "Entc",

"Marks" : 1002 }

> db.Student.find().sort({Marks:-1})

{ "\_id" : ObjectId("5b936e207ee924f248ecc1bd"), "Roll" : 405, "Name" : "Pooja", "Branch" : "Entc",

"Marks" : 1002 }

{ "\_id" : ObjectId("5b936e207ee924f248ecc1bb"), "Roll" : 201, "Name" : "Pallavi", "Branch" :

"Comp",

"Marks" : 960 }

{ "\_id" : ObjectId("5b936e207ee924f248ecc1be"), "Roll" : 108, "Name" : "Abhijit", "Branch" :

"Mech",

"Marks" : 904 }

{ "\_id" : ObjectId("5b936e207ee924f248ecc1bc"), "Roll" : 302, "Name" : "Kavita", "Branch" : "Civil",

"Marks" : 850 }

> db.Student.findOne({Roll:302})

{

"\_id" : ObjectId("5b936e207ee924f248ecc1bc"),

"Roll" : 302,

"Name" : "Kavita",

"Branch" : "Civil",

"Marks" : 850

}

> db.Student.count({Marks:850})

1

> db.Student.count({Marks:{$gt:850,$lt:999}})

2

> db.Student.find({Marks:{$gt:850,$lt:999}})

{ "\_id" : ObjectId("5b936e207ee924f248ecc1be"), "Roll" : 108, "Name" : "Abhijit", "Branch" :

"Mech",

"Marks" : 904 }

{ "\_id" : ObjectId("5b936e207ee924f248ecc1bb"), "Roll" : 201, "Name" : "Pallavi", "Branch" :

"Comp",

"Marks" : 960 }

> db.Student.dropIndex({Marks:1})

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

db.Student.createIndex({Marks:1,Roll:1})

{

"createdCollectionAutomatically" : false,

"numIndexesBefore" : 1,

"numIndexesAfter" : 2,

"ok" : 1

}

db.Student.find().sort({Marks:1,Roll:1})

{ "\_id" : ObjectId("5b936e207ee924f248ecc1bc"), "Roll" : 302, "Name" : "Kavita", "Branch" : "Civil",

"Marks" : 850 }

{ "\_id" : ObjectId("5b936e207ee924f248ecc1be"), "Roll" : 108, "Name" : "Abhijit", "Branch" :

"Mech",

"Marks" : 904 }

{ "\_id" : ObjectId("5b936e207ee924f248ecc1bb"), "Roll" : 201, "Name" : "Pallavi", "Branch" :

"Comp",

"Marks" : 960 }

{ "\_id" : ObjectId("5b936e207ee924f248ecc1bd"), "Roll" : 405, "Name" : "Pooja", "Branch" : "Entc",

"Marks" : 1002 }

>

db.Student.insert({ "Roll" : 501, "Name" : "Prachi", "Branch" : "Comp", "Marks" : 960 })

WriteResult({ "nInserted" : 1 })

> db.Student.find()

{ "\_id" : ObjectId("5b936e207ee924f248ecc1bb"), "Roll" : 201, "Name" : "Pallavi", "Branch" :

"Comp",

"Marks" : 960 }

{ "\_id" : ObjectId("5b936e207ee924f248ecc1bc"), "Roll" : 302, "Name" : "Kavita", "Branch" : "Civil",

"Marks" : 850 }

{ "\_id" : ObjectId("5b936e207ee924f248ecc1bd"), "Roll" : 405, "Name" : "Pooja", "Branch" : "Entc",

"Marks" : 1002 }

{ "\_id" : ObjectId("5b936e207ee924f248ecc1be"), "Roll" : 108, "Name" : "Abhijit", "Branch" :

"Mech",

"Marks" : 904 }

{ "\_id" : ObjectId("5b9389259d68c36e49e86266"), "Roll" : 501, "Name" : "Prachi", "Branch" :

"Comp",

"Marks" : 960 }

> db.Student.find().sort({Marks:1,Roll:1})

{ "\_id" : ObjectId("5b936e207ee924f248ecc1bc"), "Roll" : 302, "Name" : "Kavita", "Branch" : "Civil",

"Marks" : 850 }

{ "\_id" : ObjectId("5b936e207ee924f248ecc1be"), "Roll" : 108, "Name" : "Abhijit", "Branch" :

"Mech",

"Marks" : 904 }

{ "\_id" : ObjectId("5b936e207ee924f248ecc1bb"), "Roll" : 201, "Name" : "Pallavi", "Branch" :

"Comp",

"Marks" : 960 }

{ "\_id" : ObjectId("5b9389259d68c36e49e86266"), "Roll" : 501, "Name" : "Prachi", "Branch" :

"Comp",

"Marks" : 960 }

{ "\_id" : ObjectId("5b936e207ee924f248ecc1bd"), "Roll" : 405, "Name" : "Pooja", "Branch" : "Entc",

"Marks" : 1002 }

> db.Student.remove({Roll:501})

WriteResult({ "nRemoved" : 1 })

> db.Student.dropIndex({Marks:1,Roll:1})

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

Aggregation

> > db.stud.insert({Rollno:1,name:'Navin ',subject:'DMSA',marks:78});

WriteResult({ "nInserted" : 1 })

> db.stud.insert({Rollno:2,name:'anusha',subject:'OSD',marks:75})

WriteResult({ "nInserted" : 1 })

> db.stud.insert({Rollno:3,name:'ravi',subject:'TOC',marks:69})

WriteResult({ "nInserted" : 1 })

> db.stud.insert({Rollno:4,name:'veena',subject:'TOC',marks:70})

WriteResult({ "nInserted" : 1 })

> db.stud.insert({Rollno:5,name: 'Pravini',subject: 'OSD',marks:80})

WriteResult({ "nInserted" : 1 })

> db.stud.insert({Rollno:6,name: 'Reena',subject: 'DMSA',marks:50})

WriteResult({ "nInserted" : 1 })

> db.stud.insert({Rollno:7,name: 'Geeta',subject: 'CN',marks:90})

WriteResult({ "nInserted" : 1 })

> db.stud.insert({Rollno:8,name: 'Akash',subject: 'CN',marks:85})

WriteResult({ "nInserted" : 1 })

**Aggregation :**

> db.stud.aggregate( [ {$group :{\_id :"$subject",marks:{$min:"$marks"}}}])

{ "\_id" : "CN", "marks" : 85 }

{ "\_id" : "TOC", "marks" : 69 }

{ "\_id" : "OSD", "marks" : 75 }

{ "\_id" : "DMSA", "marks" : 50 }

> db.stud.aggregate( [ {$group :{\_id :"$subject",marks:{$max:"$marks"}}}])

{ "\_id" : "CN", "marks" : 90 }

{ "\_id" : "TOC", "marks" : 70 }

{ "\_id" : "OSD", "marks" : 80 }

{ "\_id" : "DMSA", "marks" : 78 }

>

> db.stud.aggregate( [ {$group :{\_id :"$subject",marks:{$avg:"$marks"}}}])

{ "\_id" : "CN", "marks" : 87.5 }

{ "\_id" : "TOC", "marks" : 69.5 }

{ "\_id" : "OSD", "marks" : 77.5 }

{ "\_id" : "DMSA", "marks" : 64 }

> db.stud.aggregate( [ {$group :{\_id :"$subject",marks:{$first:"$marks"}}}])

{ "\_id" : "CN", "marks" : 90 }

{ "\_id" : "TOC", "marks" : 69 }

{ "\_id" : "OSD", "marks" : 75 }

{ "\_id" : "DMSA", "marks" : 78 }

> db.stud.aggregate( [ {$group :{\_id :"$subject",marks:{$last:"$marks"}}}])

{ "\_id" : "CN", "marks" : 85 }

{ "\_id" : "TOC", "marks" : 70 }

{ "\_id" : "OSD", "marks" : 80 }

{ "\_id" : "DMSA", "marks" : 50 }

> db.stud.aggregate( [ {$group :{\_id :"$subject",count:{$sum:1}}}])

{ "\_id" : "CN", "count" : 2 }

{ "\_id" : "TOC", "count" : 2 }

{ "\_id" : "OSD", "count" : 2 }

{ "\_id" : "DMSA", "count" : 2 }

> db.stud.aggregate( [ {$match :{subject:"OSD"}}])

{ "\_id" : ObjectId("5b9395cb9d68c36e49e86268"), "Rollno" : 2, "name" : "anusha", "subject" :

"OSD",

"marks" : 75 }

{ "\_id" : ObjectId("5b9398889d68c36e49e8626b"), "Rollno" : 5, "name" : "Pravini", "subject" : "OSD",

"marks" : 80 }

> db.stud.aggregate( [ {$match :{subject:"OSD"}},{$group:{\_id:null,count:{$sum:1}}}])

{ "\_id" : null, "count" : 2 }

> db.stud.aggregate( [ {$match :{subject:"OSD"}},{$limit:1}])

{ "\_id" : ObjectId("5b9395cb9d68c36e49e86268"), "Rollno" : 2, "name" : "anusha", "subject" :

"OSD",

"marks" : 75 }

> db.stud.aggregate( [ {$match :{subject:"OSD"}},{$skip:1}])

{ "\_id" : ObjectId("5b9398889d68c36e49e8626b"), "Rollno" : 5, "name" : "Pravini", "subject" : "OSD",

"marks" : 80 }

> db.stud.aggregate( [ {$match :{subject:"OSD"}},{$sort:{marks:-1}}])

{ "\_id" : ObjectId("5b9398889d68c36e49e8626b"), "Rollno" : 5, "name" : "Pravini", "subject" : "OSD",

"marks" : 80 }

{ "\_id" : ObjectId("5b9395cb9d68c36e49e86268"), "Rollno" : 2, "name" : "anusha", "subject" :

"OSD",

"marks" : 75 }

> db.stud.aggregate( [ {$match :{subject:"OSD"}},{$sort:{marks:1}}])

{ "\_id" : ObjectId("5b9395cb9d68c36e49e86268"), "Rollno" : 2, "name" : "anusha", "subject" :

"OSD",

"marks" : 75 }

{ "\_id" : ObjectId("5b9398889d68c36e49e8626b"), "Rollno" : 5, "name" : "Pravini", "subject" : "OSD",

"marks" : 80 }

>