**Assignment Group: B**

**Assignment NO 11**

**Assignment Title**:

MongoDB – Aggregation and Indexing: Design and Develop

MongoDB Queries using aggregation and indexing with suitable example using MongoDB\*/

gescoe@gescoe-OptiPlex-3010:~$ mongo

MongoDB shell version: 2.6.12

connecting to: test

> use TEB\_19;

switched to db TEB\_19

> db.students.insertMany([

{

"\_id" : ObjectId("66c5c039f69f7a64bf57360b"),

"Rollno" : 1,

"Name" : "Saee",

"Branch" : "Computer",

"Marks" : 95

},

{

"\_id" : ObjectId("66c5c05af69f7a64bf57360c"),

"Rollno" : 2,

"Name" : "Sayali",

"Branch" : "IT",

"Marks" : 75

},

{

"\_id" : ObjectId("66c5c0a1f69f7a64bf57360e"),

"Branch" : "AIDS",

"Marks" : 80

},

{

"\_id" : ObjectId("66c5cab76de7af48add9b83b"),

"Rollno" : 4,

"Name" : "Gauri",

"Branch" : "Computer",

"Marks" : 85

}

])

WriteResult({ "nInserted" : 1 })

> db.Student.find().pretty();

{

"\_id" : ObjectId("66c5c039f69f7a64bf57360b"),

"Rollno" : 1,

"Name" : "Saee",

"Branch" : "Computer",

"Marks" : 95

}

{

"\_id" : ObjectId("66c5c05af69f7a64bf57360c"),

"Rollno" : 2,

"Name" : "Sayali",

"Branch" : "IT",

"Marks" : 75

}

{

"\_id" : ObjectId("66c5c0a1f69f7a64bf57360e"),

"Branch" : "AIDS",

"Marks" : 80

}

{

"\_id" : ObjectId("66c5cab76de7af48add9b83b"),

"Rollno" : 4,

"Name" : "Gauri",

"Branch" : "Computer",

"Marks" : 85

}

>db.Students.createIndex({ "Branch": 1 })

> db.Student.aggregate([{$group:{\_id:"$Branch",Total\_marks:{$sum:"$Marks"}}}]);

{ "\_id" : "AIDS", "Total\_marks" : 80 }

{ "\_id" : "IT", "Total\_marks" : 75 }

{ "\_id" : "Computer", "Total\_marks" : 180 }

> db.Student.aggregate([{$group:{\_id:"$Branch",Maximum\_marks:{$max:"$Marks"}}}]);

{ "\_id" : "AIDS", "Maximum\_marks" : 80 }

{ "\_id" : "IT", "Maximum\_marks" : 75 }

{ "\_id" : "Computer", "Maximum\_marks" : 95 }

> db.Student.aggregate([{$group:{\_id:"$Branch",Minimum\_marks:{$min:"$Marks"}}}]);

{ "\_id" : "AIDS", "Minimum\_marks" : 80 }

{ "\_id" : "IT", "Minimum\_marks" : 75 }

{ "\_id" : "Computer", "Minimum\_marks" : 85 }

> db.Student.aggregate([{$group:{\_id:"$Branch",Average\_marks:{$avg:"$Marks"}}}]);

{ "\_id" : "AIDS", "Average\_marks" : 80 }

{ "\_id" : "IT", "Average\_marks" : 75 }

{ "\_id" : "Computer", "Average\_marks" : 90 }

> db.Student.aggregate([{$group:{\_id:"$Branch",First\_marks:{$first:"$Marks"}}}]);

{ "\_id" : "AIDS", "First\_marks" : 80 }

{ "\_id" : "IT", "First\_marks" : 75 }

{ "\_id" : "Computer", "First\_marks" : 95 }

> db.Student.aggregate([{$group:{\_id:"$Branch",Last\_marks:{$last:"$Marks"}}}]);

{ "\_id" : "AIDS", "Last\_marks" : 80 }

{ "\_id" : "IT", "Last\_marks" : 75 }

{ "\_id" : "Computer", "Last\_marks" : 85 }

>db.Student.aggregate([{ $match: { Marks: { $gt: 80 } } }]);

{ "\_id" : ObjectId("66c5c039f69f7a64bf57360b"), "Rollno" : 1, "Name" : "Saee", "Branch" : "Computer", "Marks" : 95 }

{ "\_id" : ObjectId("66c5cab76de7af48add9b83b"), "Rollno" : 4, "Name" : "Gauri", "Branch" : "Computer", "Marks" : 85 }

>db.Student.aggregate([{ $match: { Marks: { $lt: 80 } } }]);

{ "\_id" : ObjectId("66c5c05af69f7a64bf57360c"), "Rollno" : 2, "Name" : "Sayali", "Branch" : "IT", "Marks" : 75 }

>db.Student.aggregate([{ $match: { Marks: { $gte: 85 } } ]);

{ "\_id" : ObjectId("66c5c039f69f7a64bf57360b"), "Rollno" : 1, "Name" : "Saee", "Branch" : "Computer", "Marks" : 95 }

{ "\_id" : ObjectId("66c5cab76de7af48add9b83b"), "Rollno" : 4, "Name" : "Gauri", "Branch" : "Computer", "Marks" : 85 }

>db.Student.aggregate([{ $match: { Marks: { $lte: 75 } } }]);

{ "\_id" : ObjectId("66c5c05af69f7a64bf57360c"), "Rollno" : 2, "Name" : "Sayali", "Branch" : "IT", "Marks" : 75 }

>db.Student.aggregate([{ $group: { \_id: "$Branch", Count: { $sum: 1 } } }]);

{ "\_id" : "AIDS", "Count" : 1 }

{ "\_id" : "IT", "Count" : 1 }

{ "\_id" : "Computer", "Count" : 3 }