**Assignment 1**

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Class: TEIT Roll. No.: 20 Batch: T1

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Implement aggregation and indexing with suitable example using MongoDB.

**Aggregation :-**

> use te20;

switched to db te20

> show collections;

College

PopulationDB

system.indexes

teacher\_info

tot\_count

tot\_country\_pop

tot\_pop

> db.teacher\_info.find();

{ "\_id" : ObjectId("55d56f7cdea3ab4644e0fcae"), "teacher\_id" : 1, "Teacher\_name"

: "Sam", "Dept\_name" : "IT", "salary" : 500000, "status" : "A" }

{ "\_id" : ObjectId("55d56fdadea3ab4644e0fcaf"), "teacher\_id" : 2, "Teacher\_name"

: "Aish", "Dept\_name" : "IT", "salary" : 100000, "status" : "B" }

{ "\_id" : ObjectId("55d57015dea3ab4644e0fcb0"), "teacher\_id" : 3, "Teacher\_name"

: "Chin", "Dept\_name" : "Civil", "salary" : 90000, "status" : "B" }

{ "\_id" : ObjectId("55d57035dea3ab4644e0fcb1"), "teacher\_id" : 4, "Teacher\_name"

: "Sakru", "Dept\_name" : "Computer", "salary" : 89000, "status" : "C" }

> db.teacher\_info.aggregate({$group:{\_id:"$status",sum:{$sum:"$salary"}}})

{ "\_id" : "C", "sum" : 89000 }

{ "\_id" : "B", "sum" : 190000 }

{ "\_id" : "A", "sum" : 500000 }

> db.teacher\_info.aggregate({$group:{\_id:"$status",sum:{$sum:"$salary"}}},{$match:{sum:{$gte:190000}}})

{ "\_id" : "B", "sum" : 190000 }

{ "\_id" : "A", "sum" : 500000 }

> db.teacher\_info.aggregate({$group:{\_id:"$status",avg:{$avg:"$salary"}}})

{ "\_id" : "C", "avg" : 89000 }

{ "\_id" : "B", "avg" : 95000 }

{ "\_id" : "A", "avg" : 500000 }

> db.teacher\_info.aggregate({$group:{\_id:"$status",min:{$min:"$salary"}}})

{ "\_id" : "C", "min" : 89000 }

{ "\_id" : "B", "min" : 90000 }

{ "\_id" : "A", "min" : 500000 }

> db.teacher\_info.aggregate({$group:{\_id:"$status",max:{$max:"$salary"}}})

{ "\_id" : "C", "max" : 89000 }

{ "\_id" : "B", "max" : 100000 }

{ "\_id" : "A", "max" : 500000 }

> db.teacher\_info.count();

4

> db.teacher\_info.aggregate({$group:{\_id:"$status",first:{$first:"$salary"}}})

{ "\_id" : "C", "first" : 89000 }

{ "\_id" : "B", "first" : 100000 }

{ "\_id" : "A", "first" : 500000 }

> db.teacher\_info.aggregate({$group:{\_id:"$status",last:{$last:"$salary"}}})

{ "\_id" : "C", "last" : 89000 }

{ "\_id" : "B", "last" : 90000 }

{ "\_id" : "A", "last" : 500000 }

> db.teacher\_info.aggregate({$group:{\_id:"$status",push:{$push:"$salary"}}})

{ "\_id" : "C", "push" : [ 89000 ] }

{ "\_id" : "B", "push" : [ 100000, 90000 ] }

{ "\_id" : "A", "push" : [ 500000 ] }

> db.teacher\_info.aggregate({$group:{\_id:"$status",addToSet:{$addToSet:"$salary"

}}})

{ "\_id" : "C", "addToSet" : [ 89000 ] }

{ "\_id" : "B", "addToSet" : [ 90000, 100000 ] }

{ "\_id" : "A", "addToSet" : [ 500000 ] }

**Indexing :**

> db.teacher\_info.ensureIndex({teacher\_id:2});

{

"createdCollectionAutomatically" : false,

"numIndexesBefore" : 1,

"numIndexesAfter" : 2,

"ok" : 1

}

> db.teacher\_info.ensureIndex({teacher\_id:1});

{

"createdCollectionAutomatically" : false,

"numIndexesBefore" : 2,

"numIndexesAfter" : 3,

"ok" : 1

}

> db.teacher\_info.ensureIndex({teacher\_id:3});

{

"createdCollectionAutomatically" : false,

"numIndexesBefore" : 3,

"numIndexesAfter" : 4,

"ok" : 1

}