Non-relational(NoSQL) Database-MongoDB

SET-11

1. Perform CURD operation

C:\Users\student.MCALAB>cd c:\Program Files\MongoDB\Server\5.0\bin

>
//create databse

> use Amrutha;
switched to db Amrutha

//create collection

> db.createCollection('Student');
{ "ok" : 1 }

//insertion

> db.Student.insert({'Rno':'1','Name':'Piyush','Class':'TE COMP'});
WriteResult({ "nInserted" : 1 })
> db.Student.insert({'Rno':'2','Name':'Abhi','Class':'TE COMP'});
WriteResult({ "nInserted" : 1 })
>db.Student.insert({'Rno':'3','Name':'Ashley','Class':'TE COMP'});
WriteResult({ "nInserted" : 1 })
> db.Student.insert({'Rno':'4','Name':'Hitesh','Class':'TE COMP'});
WriteResult({ "nInserted" : 1 })
> db.Student.insert({'Rno':'5','Name':'Pratik','Class':'TE COMP'});
WriteResult({ "nInserted" : 1 })
> db.Student.insert({'Rno':'6','Name':'Pratik','Class':'TE COMP'});
WriteResult({ "nInserted" : 1 })

//select

> db.Student.find();
{ "_id" : ObjectId("5ba1d618f5bbacd4ad81568d"), "Rno" : "1",
"Name" : "Piyush", "Class" : "TE COMP" }
{ "_id" : ObjectId("5ba1d625f5bbacd4ad81568e"), "Rno" : "2",
"Name" : "Abhi", "Class" : "TE COMP" }
{ "_id" : ObjectId("5ba1d63af5bbacd4ad81568f"), "Rno" : "3",
"Name" : "Ashley", "Class" : "TE COMP" }
{ "_id" : ObjectId("5ba1d647f5bbacd4ad815690"), "Rno" : "4",
"Name" : "Hitesh", "Class" : "TE COMP" }
{ "_id" : ObjectId("5ba1d65ef5bbacd4ad815691"), "Rno" : "5",
"Name" : "Pratik", "Class" : "TE COMP" }
{ "_id" : ObjectId("5ba1d66df5bbacd4ad815692"), "Rno" : "6",

```
"Name" : "Pratik", "Class" : "TE COMP" }
> db.Student.find().pretty();
{
"_id" : ObjectId("5ba1d618f5bbacd4ad81568d"),
"Rno" : "1",
"Name" : "Piyush",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d625f5bbacd4ad81568e"),
"Rno" : "2","Name" : "Abhi",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d63af5bbacd4ad81568f"),
"Rno" : "3",
"Name" : "Ashley",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d647f5bbacd4ad815690"),
"Rno" : "4",
"Name" : "Hitesh",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d65ef5bbacd4ad815691"),
"Rno" : "5",
"Name" : "Pratik",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d66df5bbacd4ad815692"),
"Rno" : "6",
"Name" : "Pratik",
"Class" : "TE COMP"
}
```

//update

```
> db.Student.update({'Name':'Hitesh'},{$set: {'Name':'Henry'}});
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1})
> db.Student.find().pretty();
{
"_id" : ObjectId("5b8fad4ef00832a0a50b5036"),
"Rno" : "1",
```

```
"Name" : "Piyush",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5b8fad62f00832a0a50b5037"),
"Rno" : "2",
"Name" : "Abhi",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5b8fad70f00832a0a50b5038"),
"Rno" : "3",
"Name" : "Ashley",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5b8fad7ff00832a0a50b5039"),
"Rno" : "4",
"Name" : "Henry",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5b8fad8df00832a0a50b503a"),
"Rno" : "5",
"Name" : "Pratik",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5b8fada4f00832a0a50b503b"),"Rno" : "6",
"Name" : "Pratik",
"Class" : "TE COMP"
}
```

//remove

```
> db.Student.remove({'ADD':'MP'});
WriteResult({ "nRemoved" : 1 })
> db.Student.find().pretty();
{
"_id" : ObjectId("5b8fad62f00832a0a50b5037"),
"Rno" : "2",
"Name" : "Abhi",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5b8fad70f00832a0a50b5038"),
```

```
"Rno" : "3",
"Name" : "Ashley",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5b8fad7ff00832a0a50b5039"),
"Rno" : "4",
"Name" : "Henry",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5b8fad8df00832a0a50b503a"),
"Rno" : "5",
"Name" : "Pratik",
"Class" : "TE COMP"
}
{"_id" : ObjectId("5b8fada4f00832a0a50b503b"),
"Rno" : "6",
"Name" : "Pratik",
"Class" : "TE COMP"
}
```

//save

```
>db.Student.save({_id:ObjectId("5b8fad4ef00832a0a50b5036"),"RNO
":"1","NAME":"PIYUSH","CLASS":"TE COMP","ADD":"MP"});
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1})
> db.Student.find().pretty();
{
"_id" : ObjectId("5b8fad4ef00832a0a50b5036"),
"RNO" : "1",
"NAME" : "PIYUSH",
"CLASS" : "TE COMP",
"ADD" : "MP"
}
{
"_id" : ObjectId("5b8fad62f00832a0a50b5037"),
"Rno" : "2",
"Name" : "Abhi",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5b8fad70f00832a0a50b5038"),
"Rno" : "3",
"Name" : "Ashley",
"Class" : "TE COMP"
```

```
}
{
"_id" : ObjectId("5b8fad7ff00832a0a50b5039"),
"Rno" : "4","Name" : "Henry",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5b8fad8df00832a0a50b503a"),
"Rno" : "5",
"Name" : "Pratik",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5b8fada4f00832a0a50b503b"),
"Rno" : "6",
"Name" : "Pratik",
"Class" : "TE COMP"
}
```

//and

```
> db.Student.find({$and:[{"Name":"Piyush"},{"Rno":"2"}]});
> db.Student.find({$and:[{"Name":"Piyush"},
{"Rno":"1"}]}).pretty();
{
"_id" : ObjectId("5ba1d618f5bbacd4ad81568d"),
"Rno" : "1",
"Name" : "Piyush",
"Class" : "TE COMP"
}
```

//or

```
> db.Student.find({$or:[{"Name":"Piyush"},{"Rno":"2"}]}).pretty();
{
"_id" : ObjectId("5ba1d618f5bbacd4ad81568d"),
"Rno" : "1",
"Name" : "Piyush","Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d625f5bbacd4ad81568e"),
"Rno" : "2",
"Name" : "Abhi",
"Class" : "TE COMP"
}
> db.Student.find({$or:[{"Name":"Piyush"},{"Class":"TE
```

```
COMP"}]}).pretty();
{
"_id" : ObjectId("5ba1d618f5bbacd4ad81568d"),
"Rno" : "1",
"Name" : "Piyush",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d625f5bbacd4ad81568e"),
"Rno" : "2",
"Name" : "Abhi",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d63af5bbacd4ad81568f"),
"Rno" : "3",
"Name" : "Ashley",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d647f5bbacd4ad815690"),
"Rno" : "4",
"Name" : "Hitesh","Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d65ef5bbacd4ad815691"),
"Rno" : "5",
"Name" : "Pratik",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d66df5bbacd4ad815692"),
"Rno" : "6",
"Name" : "Pratik",
"Class" : "TE COMP"
}
```

//nor

```
> db.Student.find({$nor:[{"Name":"Piyush"},{"Class":"TE
COMP"}]}).pretty();
> db.Student.find({$nor:[{"Name":"Piyush"},
{"Rno":"2"}]}).pretty();
{
"_id" : ObjectId("5ba1d63af5bbacd4ad81568f"),
"Rno" : "3",
```

```
"Name" : "Ashley",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d647f5bbacd4ad815690"),
"Rno" : "4",
"Name" : "Hitesh",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d65ef5bbacd4ad815691"),"Rno" : "5",
"Name" : "Pratik",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d66df5bbacd4ad815692"),
"Rno" : "6",
"Name" : "Pratik",
"Class" : "TE COMP"
}
db.Student.find( {"Rno": { $not:{$lt:"3"}}}).pretty();
{
"_id" : ObjectId("5ba1d63af5bbacd4ad81568f"),
"Rno" : "3",
"Name" : "Ashley",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d647f5bbacd4ad815690"),
"Rno" : "4",
"Name" : "Hitesh",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d65ef5bbacd4ad815691"),
"Rno" : "5",
"Name" : "Pratik",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d66df5bbacd4ad815692"),
"Rno" : "6","Name" : "Pratik",
"Class" : "TE COMP"
}
```

//eq

```
> db.Student.find( {"Rno": { $eq:"5"}}).pretty();
{
"_id" : ObjectId("5ba1d65ef5bbacd4ad815691"),
"Rno" : "5",
"Name" : "Pratik",
"Class" : "TE COMP"
}
```

//ne

```
> db.Student.find( {"Rno": { $ne:"5"}}).pretty();
{
"_id" : ObjectId("5ba1d618f5bbacd4ad81568d"),
"Rno" : "1",
"Name" : "Piyush",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d625f5bbacd4ad81568e"),
"Rno" : "2",
"Name" : "Abhi",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d63af5bbacd4ad81568f"),
"Rno" : "3",
"Name" : "Ashley",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d647f5bbacd4ad815690"),
"Rno" : "4","Name" : "Hitesh",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d66df5bbacd4ad815692"),
"Rno" : "6",
"Name" : "Pratik",
"Class" : "TE COMP"
}
```

//gt

```
> db.Student.find( {"Rno": { $gt:"5"}}).pretty();
```

```
{
"_id" : ObjectId("5ba1d66df5bbacd4ad815692"),
"Rno" : "6",
"Name" : "Pratik",
"Class" : "TE COMP"
}
```

//gte

```
> db.Student.find( {"Rno": { $gte:"5"}}).pretty();
{
"_id" : ObjectId("5ba1d65ef5bbacd4ad815691"),
"Rno" : "5",
"Name" : "Pratik",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d66df5bbacd4ad815692"),
"Rno" : "6",
"Name" : "Pratik",
"Class" : "TE COMP"
}
```

//lt

```
> db.Student.find( {"Rno": { $lt:"5"}}).pretty();
{
"_id" : ObjectId("5ba1d618f5bbacd4ad81568d"),"Rno" : "1",
"Name" : "Piyush",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d625f5bbacd4ad81568e"),
"Rno" : "2",
"Name" : "Abhi",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d63af5bbacd4ad81568f"),
"Rno" : "3",
"Name" : "Ashley",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d647f5bbacd4ad815690"),
"Rno" : "4",
```

```
"Name" : "Hitesh",
"Class" : "TE COMP"
}
```

//lte

```
> db.Student.find( {"Rno": { $lte:"5"}}).pretty();
{
"_id" : ObjectId("5ba1d618f5bbacd4ad81568d"),
"Rno" : "1",
"Name" : "Piyush",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d625f5bbacd4ad81568e"),
"Rno" : "2","Name" : "Abhi",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d63af5bbacd4ad81568f"),
"Rno" : "3",
"Name" : "Ashley",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d647f5bbacd4ad815690"),
"Rno" : "4",
"Name" : "Hitesh",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d65ef5bbacd4ad815691"),
"Rno" : "5",
"Name" : "Pratik",
"Class" : "TE COMP"
}
> db.Student.find( {"Rno": { $lt:"5",$gt:"2"}}).pretty();
{
"_id" : ObjectId("5ba1d63af5bbacd4ad81568f"),
"Rno" : "3",
"Name" : "Ashley",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d647f5bbacd4ad815690"),
"Rno" : "4",
```

```
"Name" : "Hitesh","Class" : "TE COMP"
}
> db.Student.find( {"Rno": { $lte:"5",$gte:"2"}}).pretty();
{
"_id" : ObjectId("5ba1d625f5bbacd4ad81568e"),
"Rno" : "2",
"Name" : "Abhi",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d63af5bbacd4ad81568f"),
"Rno" : "3",
"Name" : "Ashley",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d647f5bbacd4ad815690"),
"Rno" : "4",
"Name" : "Hitesh",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d65ef5bbacd4ad815691"),
"Rno" : "5",
"Name" : "Pratik",
"Class" : "TE COMP"
}
> db.Student.find( {"Rno": { $lte:"5",$gt:"2"}}).pretty();
{
"_id" : ObjectId("5ba1d63af5bbacd4ad81568f"),
"Rno" : "3",
"Name" : "Ashley","Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d647f5bbacd4ad815690"),
"Rno" : "4",
"Name" : "Hitesh",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d65ef5bbacd4ad815691"),
"Rno" : "5",
"Name" : "Pratik",
"Class" : "TE COMP"
}
> db.Student.find( {"Rno": { $lt:"5",$gte:"2"}}).pretty();
```

```
{
"_id" : ObjectId("5ba1d625f5bbacd4ad81568e"),
"Rno" : "2",
"Name" : "Abhi",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d63af5bbacd4ad81568f"),
"Rno" : "3",
"Name" : "Ashley",
"Class" : "TE COMP"
}
{
"_id" : ObjectId("5ba1d647f5bbacd4ad815690"),
"Rno" : "4",
"Name" : "Hitesh",
"Class" : "TE COMP"}

>
```

SET-12

1. Usage of aggregate functions

```
//USE DATABASE
> use comp;
switched to db comp
//CREATE COLLECTION WEBSITE
> db.createCollection('website');
{ "ok" : 1 }
//INSERT VALUES IN WEBSITE
>
db.website.insert({'roll':'1','name':'harsh','amount':1000,'ur
l':'www.yahoo.com'});
WriteResult({ "nInserted" : 1 })
>db.website.insert({'roll':'2','name':'jitesh','amount':2000,'url':'www.yahoo.com
'});
WriteResult({ "nInserted" : 1 })
>db.website.insert({'roll':'3','name':'rina','amount':3000,'url':'www.google.com'
});
WriteResult({ "nInserted" : 1 })
>db.website.insert({'roll':'4','name':'ash','amount':4000,'url':'www.gmail.com'})
;
WriteResult({ "nInserted" : 1 })
>db.website.insert({'roll':'5','name':'ash','amount':1000,'url':'www.pvg.com'});
WriteResult({ "nInserted" : 1 })
```

//SUM AGGREGATE

```
> db.website.aggregate({$group:{_id:"$name","total":{$sum:"$amount"}}});
{ "_id" : "ash", "total" : 5000 }
{ "_id" : "rina", "total" : 3000 }
{ "_id" : "jitesh", "total" : 2000 }
{ "_id" : "harsh", "total" : 2000 }
```

//AVG AGGREGATE

```
> db.website.aggregate({$group:{_id:"$name","total":
{$avg:"$amount"}}});
{ "_id" : "ash", "total" : 2500 }
{ "_id" : "rina", "total" : 3000 }
{ "_id" : "jitesh", "total" : 2000 }
{ "_id" : "harsh", "total" : 1000 }
```

//MIN AGGREGATION

```
> db.website.aggregate({$group:{_id:"$name","total":{$min:"$amount"}}});
{ "_id" : "ash", "total" : 1000 }
{ "_id" : "rina", "total" : 3000 }
{ "_id" : "jitesh", "total" : 2000 }
{ "_id" : "harsh", "total" : 1000 }
```

//MAX AGGREGATION

```
> db.website.aggregate({$group:{_id:"$name","total":{$max:"$amount"}}});
{ "_id" : "ash", "total" : 4000 }
{ "_id" : "rina", "total" : 3000 }
{ "_id" : "jitesh", "total" : 2000 }
{ "_id" : "harsh", "total" : 1000 }
```

//FIRST AGGREGATION

```
> db.website.aggregate({$group:{_id:"$name","total":{$first:"$amount"}}});
{ "_id" : "ash", "total" : 4000 }
{ "_id" : "rina", "total" : 3000 }
{ "_id" : "jitesh", "total" : 2000 }
{ "_id" : "harsh", "total" : 1000 }
```

//LAST AGGREGATION

```
> db.website.aggregate({$group:{_id:"$name","total":{$last:"$amount"}}});
{ "_id" : "ash", "total" : 1000 }
{ "_id" : "rina", "total" : 3000 }
{ "_id" : "jitesh", "total" : 2000 }
{ "_id" : "harsh", "total" : 1000 }
```

//PUSH AGGREGATION

```
> db.website.aggregate({$group:{_id:"$name","total":
{$push:"$amount"}}});
{ "_id" : "ash", "total" : [ 4000, 1000 ] }
{ "_id" : "rina", "total" : [ 3000 ] }
{ "_id" : "jitesh", "total" : [ 2000 ] }
{ "_id" : "harsh", "total" : [ 1000, 1000 ] }
```

//COUNT AGGREGATION

```
> db.website.aggregate({$group:{_id:"$name","total": {$sum:1}}});
```

```
{ "_id" : "ash", "total" : 2 }
{ "_id" : "rina", "total" : 1 }
{ "_id" : "jitesh", "total" : 1 }
{ "_id" : "harsh", "total" : 2 }
```
//ADDTOSET AGGREGATE
```
> db.website.aggregate({$group:
{_id:"$name","total"{$addToSet:"$amount"}}});
{ "_id" : "ash", "total" : [ 1000, 4000 ] }
{ "_id" : "rina", "total" : [ 3000 ] }
{ "_id" : "jitesh", "total" : [ 2000 ] }
{ "_id" : "harsh", "total" : [ 1000 ] }
```

SET-13

1. Backup and restoring data

use demo

switched to db demo

> db.createCollection('student');

{ "ok" : 1 }

> db.Student.insert({'Rno':'1','Name':'amrutha','Class':'TE COMP'});

WriteResult({ "nInserted" : 1 })

> db.Student.insert({'Rno':'2','Name':'anakha','Class':'TE COMP'});

WriteResult({ "nInserted" : 1 })

> db.Student.insert({'Rno':'3','Name':'sherin','Class':'TE COMP'});

WriteResult({ "nInserted" : 1 })

> db.Student.insert({'Rno':'4','Name':'prathibha','Class':'TE COMP'});

WriteResult({ "nInserted" : 1 })

> db.Student.insert({'Rno':'5','Name':'judith','Class':'TE COMP'});

WriteResult({ "nInserted" : 1 })

> db.Student.insert({'Rno':'6','Name':'teena','Class':'TE COMP'});

WriteResult({ "nInserted" : 1 })

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

> db.Student.find()

{ "_id" : ObjectId("627ddb25856512dff8e204c9"), "Rno" : "1", "Name" : "amrutha", "Class" : "TE COMP" }

```
{ "_id" : ObjectId("627ddb62856512dff8e204ca"), "Rno" : "2", "Name" : "anakha",
"Class" : "TE COMP" }

{ "_id" : ObjectId("627ddb7c856512dff8e204cb"), "Rno" : "3", "Name" : "sherin",
"Class" : "TE COMP" }

{ "_id" : ObjectId("627ddb91856512dff8e204cc"), "Rno" : "4", "Name" : "prathibha",
"Class" : "TE COMP" }

{ "_id" : ObjectId("627ddba6856512dff8e204cd"), "Rno" : "5", "Name" : "judith",
"Class" : "TE COMP" }

{ "_id" : ObjectId("627ddbbf856512dff8e204ce"), "Rno" : "6", "Name" : "teena",
"Class" : "TE COMP" }

> db.createCollection('employee')

{ "ok" : 1 }

> db.employee.insert({'eid':'107','ename':'anite','address':'cff','gender':'f'});

WriteResult({ "nInserted" : 1 })

> db.employee.insert({'eid':'108','ename':'anna','address':'cdf','gender':'f'});

WriteResult({ "nInserted" : 1 })

> db.employee.insert({'eid':'109','ename':'bharathy','address':'cff','gender':'f'});

WriteResult({ "nInserted" : 1 })

> db.employee.insert({'eid':'110','ename':'amrutha','address':'cff','gender':'f'});

WriteResult({ "nInserted" : 1 })

> db.employee.find()

{ "_id" : ObjectId("627ddd48856512dff8e204cf"), "eid" : "107", "ename" : "anite",
"address" : "cff", "gender" : "f" }

{ "_id" : ObjectId("627dddaf856512dff8e204d0"), "eid" : "108", "ename" : "anna",
"address" : "cdf", "gender" : "f" }

{ "_id" : ObjectId("627dddd2856512dff8e204d1"), "eid" : "109", "ename" :
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