

Group B : Lab Assignment no. 11

Title :Implement aggregation and indexing with suitable example using MongoDB

```
dipti@dipti-VPCEG28FN:~$ mongo
MongoDB shell version v3.6.3
connecting to: mongodb://127.0.0.1:27017
MongoDB server version: 3.6.3
Server has startup warnings:
2020-10-15T14:26:28.786+0530 I STORAGE [initandlisten]
2020-10-15T14:26:28.786+0530 I STORAGE [initandlisten] ** WARNING:
Using the XFS filesystem is strongly recommended with the WiredTiger storage
engine
2020-10-15T14:26:28.786+0530 I STORAGE [initandlisten] **      See
http://dochub.mongodb.org/core/prodnotes-filesystem
2020-10-15T14:26:36.417+0530 I CONTROL [initandlisten]
2020-10-15T14:26:36.417+0530 I CONTROL [initandlisten] ** WARNING:
Access control is not enabled for the database.
2020-10-15T14:26:36.417+0530 I CONTROL [initandlisten] **      Read and
write access to data and configuration is unrestricted.
2020-10-15T14:26:36.417+0530 I CONTROL [initandlisten]
>
//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 ] }
```

//INDEXING

```
> db.createCollection('website1');  
{ "ok" : 1 }  
  
> db.website1.insert({'r':1,'name':'harsh'});  
WriteResult({ "nInserted" : 1 })
```

```
> db.website1.find().pretty()  
{ "_id" : ObjectId("5ba3509a444926329738012d"), "roll" : 1,  
  "name" : "harsh" }  
{ "_id" : ObjectId("5ba35293444926329738012e"), "roll" : 1,  
  "name" : "harsh" }
```

```
> db.website1.createIndex({'name':1})  
{ "numIndexesBefore" : 2, "note" : "all indexes already  
exist", "ok" : 1 }//CREATE INDEXING
```

```
> db.website1.createIndex({'name':-1})  
{  
  "createdCollectionAutomatically" : false,  
  "numIndexesBefore" : 2,  
  "numIndexesAfter" : 3,  
  "ok" : 1  
}
```

```
> db.website1.getIndexes()  
2018-09-20T13:28:09.628+0530 TypeError: Property 'getIndexes'  
of object om.website is not a  
function
```

```
> db.website1.getIndexes()  
[  
  {"v" : 1,  
   "key" : {
```

```
"_id" : 1
},
"name" : "_id_",
"ns" : "harsh.website1"
},
{
"v" : 1,
"key" : {
"name" : 1
},
"name" : "name_1",
"ns" : "harsh.website1"
},
{
"v" : 1,
"key" : {
"name" : -1
},
"name" : "name_-1",
"ns" : "harsh.website1"
}
]
> db.website1.createIndex({'name':-1})
{ "numIndexesBefore" : 3, "note" : "all indexes already
exist", "ok" : 1 }
```

//DROP INDEX

```
> db.website.dropIndex({'name':-1})
{ "nIndexesWas" : 3, "ok" : 1 }>
db.website1.dropIndex({'name':1})
{ "nIndexesWas" : 2, "ok" : 1 }> db.website1.dropIndex({'name':1})
{
"nIndexesWas" : 1,
"ok" : 0,
"errmsg" : "can't find index with key:{ name: 1.0 }"
}
```

//GET INDEXING

```
> db.website1.getIndexes()
[
{
"v" : 1,
"key" : {
```

```
"_id" : 1
},
"name" : "_id_",
"ns" : "harsh.website1"
}
]

> db.website1.find().pretty()
{ "_id" : ObjectId("5ba3509a444926329738012d"), "roll" : 1,
"name" : "harsh" }
{ "_id" : ObjectId("5ba35293444926329738012e"), "roll" : 1,
"name" : "harsh" }

>
> db.website1.createIndex({'name':1})
{
  "createdCollectionAutomatically" : false,
  "numIndexesBefore" : 1,
  "numIndexesAfter" : 2,
  "ok" : 1
}

> db.website1.getIndexes()[

{
  "v" : 1,
  "key" : {
    "_id" : 1
  },
  "name" : "_id_",
  "ns" : "harsh.website1"
},
{
  "v" : 1,
  "key" : {"name" : 1
  },
  "name" : "name_1",
  "ns" : "harsh.website1"
}
]

> db.website1.dropIndex({'name':1})
{ "nIndexesWas" : 2, "ok" : 1 }

> db.website1.getIndexes()
[
```

```
{  
  "v" : 1,  
  "key" : {  
    "_id" : 1  
  },  
  "name" : "_id_",  
  "ns" : "harsh.website1"  
}  
]
```

```
> db.website1.createIndex({'name':1,'r':-1})  
{"createdCollectionAutomatically" : false,  
 "numIndexesBefore" : 1,  
 "numIndexesAfter" : 2,  
 "ok" : 1  
}
```

```
> db.website1.getIndexes()  
[  
  {  
    "v" : 1,  
    "key" : {  
      "_id" : 1  
    },  
    "name" : "_id_",  
    "ns" : "harsh.website1"  
  },  
  {  
    "v" : 1,  
    "key" : {  
      "name" : 1,  
      "r" : -1  
    },  
    "name" : "name_1_r_-1",  
    "ns" : "harsh.website1"  
  }  
] (i-search)`db.website1.insert({'roll':1,'name':'harsh'});':
```