Name:- SHARMA SAGAR GANESH
Roll no:- 55
Batch:- T4

Group B:- **Practical No. 02**

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("5ba3509a4449263297380 12d"), "roll" : 1,
"name" : "harsh" }
{ "_id" : ObjectId("5ba352934449263297380 12e"), "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.getIndexses()
2018-09-20T13:28:09.628+0530 TypeError: Property 'getIndexses' of
object om.website is not a
function


  "key":{
```

```
> 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() [

  "key":{
```

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

{
"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'});':
```