GroupB:LabAssignmentno.11

Title:Implement aggregation and indexing with suitable example using MongoDB

dipti@dipti-VPCEG28FN:~$mongo
MongoDB shell version v3.6.3
connectingto:mongodb://127.0.0.1:27017 MongoDB
server version: 3.6.3
Serverhasstartupwarnings:
2020-10-15T14:26:28.786+0530ISTORAGE[initandlisten]
2020-10-15T14:26:28.786+0530ISTORAGE[initandlisten]**WARNING:
UsingtheXFSfilesystemisstronglyrecommendedwiththeWiredTigerstorage
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+0530ICONTROL[initandlisten]
2020-10-15T14:26:36.417+0530ICONTROL[initandlisten]**WARNING:
Accesscontrolisnotenabledforthedatabase.
2020-10-15T14:26:36.417+0530 I CONTROL[initandlisten] ** Readand
write access to data and configuration is unrestricted.
2020-10-15T14:26:36.417+0530ICONTROL[initandlisten]
>
> use dbs;
switched to db dbs
> db.createCollection('website');
{ "ok" : 1 }
> 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':'5','name':'ash','amount':1000,'url':'www.pvg.com'});
WriteResult({ "nInserted" : 1 })

//SUMAGGREGATE

> db.website.aggregate({$group:{_id:"$name","total":{$sum:"$amount"}}});
{ "_id" : "ash", "total" : 9000 }
{ "_id" : "rina", "total" : 6000 }
{ "_id" : "jitesh", "total" : 2000 }
{ "_id" : "harsh", "total" : 1000 }

//AVG AGGREGATE

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

//MINAGGREGATION

```
> 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 }
```

//MAXAGGREGATION

```
> 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 }
```

//FIRSTAGGREGATION
```
> 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 }
```

//LASTAGGREGATION

```
> 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 }
```

//PUSHAGGREGATION

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

//COUNTAGGREGATION

```
> db.website.aggregate({$group:{_id:"$name","total":{$sum:1}}});
{ "_id" : "ash", "total" : 3 }
{ "_id" : "rina", "total" : 2 }
{ "_id" : "jitesh", "total" : 1 }
{ "_id" : "harsh", "total" : 1 }
```

//ADDTOSETAGGREGATE

```
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("670fd684ae9e2404dcbaead6"), "r" : 1, "name" : "harsh" }
> db.website1.createIndex({'name':1})
{
        "createdCollectionAutomatically" : false,
        "numIndexesBefore" : 1,
        "numIndexesAfter" : 2,
        "ok" : 1
}
> db.website1.createIndex({'name':-1})
{
        "createdCollectionAutomatically" : false,
        "numIndexesBefore" : 2,
        "numIndexesAfter" : 3,
        "ok" : 1
}
> db.website1.getIndexes()
[
        {
                "v" : 2,
                "key" : {
```

```
                    "_id" : 1
            },
            "name" : "_id_",
            "ns" : "dbs.website1"
        },
        {
            "v" : 2,
            "key" : {
                    "name" : 1
            },
            "name" : "name_1",
            "ns" : "dbs.website1"
        },
        {
            "v" : 2,
            "key" : {
                    "name" : -1
            },
            "name" : "name_-1",
            "ns" : "dbs.website1"
        }
]
 > db.website1.createIndex({'name':-1})
 {
        "numIndexesBefore" : 3,
        "numIndexesAfter" : 3,
        "note" : "all indexes already exist",
        "ok" : 1
}

//DROPINDEX
 > db.website.dropIndex({'name':-1})
 {
        "nIndexesWas" : 1,
        "ok" : 0,
        "errmsg" : "can't find index with key: { name: -1.0 }",
        "code" : 27,
        "codeName" : "IndexNotFound"
 }
 > db.website1.dropIndex({'name':1})
 { "nIndexesWas" : 3, "ok" : 1 }
 > db.website1.dropIndex({'name':1})
 {
        "nIndexesWas" : 2,
        "ok" : 0,
        "errmsg" : "can't find index with key: { name: 1.0 }",
        "code" : 27,
        "codeName" : "IndexNotFound"
```

```
        }

        //GETINDEXING
        > db.website1.getIndexes()
        [
            {
                "v" : 2,
                "key" : {
                    "_id" : 1
                },
                "name" : "_id_",
                "ns" : "dbs.website1"
            },
            {
                "v" : 2,
                "key" : {
                    "name" : -1
                },
                "name" : "name_-1",
                "ns" : "dbs.website1"
            }
        ]
        > db.website1.find().pretty()
        { "_id" : ObjectId("670fd684ae9e2404dcbaead6"), "r" : 1, "name" : "harsh" }
        > db.website1.createIndex({'name':1})
        {
            "createdCollectionAutomatically" : false,
            "numIndexesBefore" : 2,
            "numIndexesAfter" : 3,
            "ok" : 1
        }
        > db.website1.getIndexes()
        [
            {
                "v" : 2,
                "key" : {
                    "_id" : 1
                },
                "name" : "_id_",
                "ns" : "dbs.website1"
            },
            {
                "v" : 2,
                "key" : {
                    "name" : -1
                },
                "name" : "name_-1",
                "ns" : "dbs.website1"
```

```
        },
        {
            "v" : 2,
            "key" : {
                "name" : 1
            },
            "name" : "name_1",
            "ns" : "dbs.website1"
        }
]
> db.website1.dropIndex({'name':1})
{ "nIndexesWas" : 3, "ok" : 1 }
> db.website1.createIndex({'name':1,'r':-1})
{
        "createdCollectionAutomatically" : false,
        "numIndexesBefore" : 2,
        "numIndexesAfter" : 3,
        "ok" : 1
}
> db.website1.getIndexes()
[
        {
            "v" : 2,
            "key" : {
                "_id" : 1
            },
            "name" : "_id_",
            "ns" : "dbs.website1"
        },
        {
            "v" : 2,
            "key" : {
                "name" : -1
            },
            "name" : "name_-1",
            "ns" : "dbs.website1"
        },
        {
            "v" : 2,
            "key" : {
                "name" : 1,
                "r" : -1
            },
            "name" : "name_1_r_-1",
            "ns" : "dbs.website1"
        }
]
```