use pl1

switched to db pl1

> db.createCollection('users')

{ "ok" : 1 }

> db.users.insertOne({user\_name:'swapnil',user\_id:101,age:20,state:'maharashtra'});

WriteResult({ "nInserted" : 1 })

> db.users.insertOne({user\_name:'kamlesh',user\_id:102,age:20,state:'bihar'});

WriteResult({ "nInserted" : 1 })

> db.users.insertOne({user\_name:'akash',user\_id:103,age:19,state:'goa'});

WriteResult({ "nInserted" : 1 })

> db.users.insertOne({user\_name:'abhishek',user\_id:104,age:19,state:'gujrat'});

WriteResult({ "nInserted" : 1 })

> db.users.insertOne({user\_name:'omkar',user\_id:105,age:19,state:'goa'});

WriteResult({ "nInserted" : 1 })

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

{

"\_id" : ObjectId("540356abfb42c93ba10a5138"),

"user\_name" : "swapnil",

"user\_id" : 101,

"age" : 20,

"state" : "maharashtra"

}

{

"\_id" : ObjectId("540356c3fb42c93ba10a5139"),

"user\_name" : "kamlesh",

"user\_id" : 102,

"age" : 20,

"state" : "bihar"

}

{

"\_id" : ObjectId("540356d7fb42c93ba10a513a"),

"user\_name" : "akash",

"user\_id" : 103,

"age" : 19,

"state" : "goa"

}

{

"\_id" : ObjectId("540356f3fb42c93ba10a513b"),

"user\_name" : "abhishek",

"user\_id" : 104,

"age" : 19,

"state" : "gujrat"

}

{

"\_id" : ObjectId("54035713fb42c93ba10a513c"),

"user\_name" : "omkar",

"user\_id" : 105,

"age" : 19,

"state" : "goa"

}

//before indexing

test> db.users.find({state:'goa'}).explain("executionStats");

{

explainVersion: '1',

queryPlanner: {

namespace: 'test.users',

indexFilterSet: false,

parsedQuery: { state: { '$eq': 'goa' } },

queryHash: '48E5EF8F',

planCacheKey: '48E5EF8F',

maxIndexedOrSolutionsReached: false,

maxIndexedAndSolutionsReached: false,

maxScansToExplodeReached: false,

winningPlan: {

stage: 'COLLSCAN',

filter: { state: { '$eq': 'goa' } },

direction: 'forward'

},

rejectedPlans: []

},

executionStats: {

executionSuccess: true,

nReturned: 2,

executionTimeMillis: 0,

totalKeysExamined: 0,

totalDocsExamined: 5,

executionStages: {

stage: 'COLLSCAN',

filter: { state: { '$eq': 'goa' } },

nReturned: 2,

executionTimeMillisEstimate: 0,

works: 7,

advanced: 2,

needTime: 4,

needYield: 0,

saveState: 0,

restoreState: 0,

isEOF: 1,

direction: 'forward',

docsExamined: 5

}

},

command: { find: 'users', filter: { state: 'goa' }, '$db': 'test' },

serverInfo: {

host: 'ubuntu-OptiPlex-5000',

port: 27017,

version: '6.0.2',

gitVersion: '94fb7dfc8b974f1f5343e7ea394d0d9deedba50e'

},

serverParameters: {

internalQueryFacetBufferSizeBytes: 104857600,

internalQueryFacetMaxOutputDocSizeBytes: 104857600,

internalLookupStageIntermediateDocumentMaxSizeBytes: 104857600,

internalDocumentSourceGroupMaxMemoryBytes: 104857600,

internalQueryMaxBlockingSortMemoryUsageBytes: 104857600,

internalQueryProhibitBlockingMergeOnMongoS: 0,

internalQueryMaxAddToSetBytes: 104857600,

internalDocumentSourceSetWindowFieldsMaxMemoryBytes: 104857600

},

ok: 1

}

//creating index

> db.users.ensureIndex({"state":1})

{

"createdCollectionAutomatically" : false,

"numIndexesBefore" : 3,

"numIndexesAfter" : 4,

"ok" : 1

}

//after indexing

>test> db.users.find({state:'goa'}).explain("executionStats");

{

explainVersion: '1',

queryPlanner: {

namespace: 'test.users',

indexFilterSet: false,

parsedQuery: { state: { '$eq': 'goa' } },

queryHash: '48E5EF8F',

planCacheKey: 'C7421D8C',

maxIndexedOrSolutionsReached: false,

maxIndexedAndSolutionsReached: false,

maxScansToExplodeReached: false,

winningPlan: {

stage: 'FETCH',

inputStage: {

stage: 'IXSCAN',

keyPattern: { state: 1 },

indexName: 'state\_1',

isMultiKey: false,

multiKeyPaths: { state: [] },

isUnique: false,

isSparse: false,

isPartial: false,

indexVersion: 2,

direction: 'forward',

indexBounds: { state: [ '["goa", "goa"]' ] }

}

},

rejectedPlans: []

},

executionStats: {

executionSuccess: true,

nReturned: 2,

executionTimeMillis: 0,

totalKeysExamined: 2,

totalDocsExamined: 2,

executionStages: {

stage: 'FETCH',

nReturned: 2,

executionTimeMillisEstimate: 1,

works: 3,

advanced: 2,

needTime: 0,

needYield: 0,

saveState: 0,

restoreState: 0,

isEOF: 1,

docsExamined: 2,

alreadyHasObj: 0,

inputStage: {

stage: 'IXSCAN',

nReturned: 2,

executionTimeMillisEstimate: 1,

works: 3,

advanced: 2,

needTime: 0,

needYield: 0,

saveState: 0,

restoreState: 0,

isEOF: 1,

keyPattern: { state: 1 },

indexName: 'state\_1',

isMultiKey: false,

multiKeyPaths: { state: [] },

isUnique: false,

isSparse: false,

isPartial: false,

indexVersion: 2,

direction: 'forward',

indexBounds: { state: [ '["goa", "goa"]' ] },

keysExamined: 2,

seeks: 1,

dupsTested: 0,

dupsDropped: 0

}

}

},

command: { find: 'users', filter: { state: 'goa' }, '$db': 'test' },

serverInfo: {

host: 'ubuntu-OptiPlex-5000',

port: 27017,

version: '6.0.2',

gitVersion: '94fb7dfc8b974f1f5343e7ea394d0d9deedba50e'

},

serverParameters: {

internalQueryFacetBufferSizeBytes: 104857600,

internalQueryFacetMaxOutputDocSizeBytes: 104857600,

internalLookupStageIntermediateDocumentMaxSizeBytes: 104857600,

internalDocumentSourceGroupMaxMemoryBytes: 104857600,

internalQueryMaxBlockingSortMemoryUsageBytes: 104857600,

internalQueryProhibitBlockingMergeOnMongoS: 0,

internalQueryMaxAddToSetBytes: 104857600,

internalDocumentSourceSetWindowFieldsMaxMemoryBytes: 104857600

},

ok: 1

}

//old

> db.users.find({state:'goa'}).explain()

{

"cursor" : "BtreeCursor state\_1",

"isMultiKey" : false,

"n" : 2,

"nscannedObjects" : 2,

"nscanned" : 2,

"nscannedObjectsAllPlans" : 2,

"nscannedAllPlans" : 2,

"scanAndOrder" : false,

"indexOnly" : false,

"nYields" : 0,

"nChunkSkips" : 0,

"millis" : 0,

"indexBounds" : {

"state" : [

[

"goa",

"goa"

]

]

},

"server" : "hackers-alive:27017",

"filterSet" : false

}

>

////////compound indexes/////////////////////////////////

//before using compound index

dypcoe>db.users.find({user\_name:'akash',state:'goa'}).explain()

{

"cursor" : "BasicCursor",

"isMultiKey" : false,

"n" : 1,

"nscannedObjects" : 6,

"nscanned" : 6,

"nscannedObjectsAllPlans" : 6,

"nscannedAllPlans" : 6,

"scanAndOrder" : false,

"indexOnly" : false,

"nYields" : 0,

"nChunkSkips" : 0,

"millis" : 0,

"server" : "student-OptiPlex-390:27017",

"filterSet" : false

}

//creating compound index on user\_name and state

dypcoe>db.users.ensureIndex({state:1,user\_name:1});

{

"createdCollectionAutomatically" : false,

"numIndexesBefore" : 1,

"numIndexesAfter" : 2,

"ok" : 1

}

//after compound indexing

dypcoe>db.users.find({user\_name:'akash',state:'goa'}).explain()

{

"cursor" : "BtreeCursor state\_1\_user\_name\_1",

"isMultiKey" : false,

"n" : 1,

"nscannedObjects" : 1,

"nscanned" : 1,

"nscannedObjectsAllPlans" : 1,

"nscannedAllPlans" : 1,

"scanAndOrder" : false,

"indexOnly" : false,

"nYields" : 0,

"nChunkSkips" : 0,

"millis" : 22,

"indexBounds" : {

"state" : [

[

"goa",

"goa"

]

],

"user\_name" : [

[

"akash",

"akash"

]

]

},

"server" : "student-OptiPlex-390:27017",

"filterSet" : false

}

dypcoe>

//// using hint function //////////

dypcoe>db.users.find({state:'goa'}).hint({state:1});

{ "\_id" : ObjectId("5405ac8a21e904776a1cf549"), "user\_name" : "akash", "user\_id" : 103, "age" : 19, "state" : "goa" }

{ "\_id" : ObjectId("5405ac9d21e904776a1cf54b"), "user\_name" : "omkar", "user\_id" : 105, "age" : 19, "state" : "goa" }

dypcoe>db.users.find({state:'goa'}).hint({state:1}).explain();

{

"cursor" : "BtreeCursor state\_1",

"isMultiKey" : false,

"n" : 2,

"nscannedObjects" : 2,

"nscanned" : 2,

"nscannedObjectsAllPlans" : 2,

"nscannedAllPlans" : 2,

"scanAndOrder" : false,

"indexOnly" : false,

"nYields" : 0,

"nChunkSkips" : 0,

"millis" : 0,

"indexBounds" : {

"state" : [

[

"goa",

"goa"

]

]

},

"server" : "student-OptiPlex-390:27017",

"filterSet" : false

}

dypcoe>db.users.find({state:'goa'}).hint({state:1,user\_name:1}).explain();

{

"cursor" : "BtreeCursor state\_1\_user\_name\_1",

"isMultiKey" : false,

"n" : 2,

"nscannedObjects" : 2,

"nscanned" : 2,

"nscannedObjectsAllPlans" : 2,

"nscannedAllPlans" : 2,

"scanAndOrder" : false,

"indexOnly" : false,

"nYields" : 0,

"nChunkSkips" : 0,

"millis" : 0,

"indexBounds" : {

"state" : [

[

"goa",

"goa"

]

],

"user\_name" : [

[

{

"$minElement" : 1

},

{

"$maxElement" : 1

}

]

]

},

"server" : "student-OptiPlex-390:27017",

"filterSet" : false

}

////compound index new demo/////////////////

> db.users.ensureIndex({"age":1, "salary":1})

{ "ok" : 1 }

> db.users.ensureIndex({"salary":1, "age":1});

{ "ok" : 1 }

> db.users.find({age:25,salary:15000}).explain();

{

"cursor" : "BtreeCursor age\_1\_salary\_1",

"isMultiKey" : false,

"n" : 4,

"nscannedObjects" : 4,

"nscanned" : 4,

"nscannedObjectsAllPlans" : 4,

"nscannedAllPlans" : 4,

"scanAndOrder" : false,

"indexOnly" : false,

"nYields" : 0,

"nChunkSkips" : 0,

"millis" : 0,

"indexBounds" : {

"age" : [

[

25,

25

]

],

"salary" : [

[

15000,

15000

]

]

},

"server" : "dypcoe-OptiPlex-390:27017"

}

> db.users.find({age:25,salary:15000}).hint({salary:1, age:1}).explain();

{

"cursor" : "BtreeCursor salary\_1\_age\_1",

"isMultiKey" : false,

"n" : 4,

"nscannedObjects" : 4,

"nscanned" : 4,

"nscannedObjectsAllPlans" : 4,

"nscannedAllPlans" : 4,

"scanAndOrder" : false,

"indexOnly" : false,

"nYields" : 0,

"nChunkSkips" : 0,

"millis" : 0,

"indexBounds" : {

"salary" : [

[

15000,

15000

]

],

"age" : [

[

25,

25

]

]

},

"server" : "dypcoe-OptiPlex-390:27017"

}

> db.users.find({age:25,salary:15000}).hint({age:1, salary:1}).explain();

{

"cursor" : "BtreeCursor age\_1\_salary\_1",

"isMultiKey" : false,

"n" : 4,

"nscannedObjects" : 4,

"nscanned" : 4,

"nscannedObjectsAllPlans" : 4,

"nscannedAllPlans" : 4,

"scanAndOrder" : false,

"indexOnly" : false,

"nYields" : 0,

"nChunkSkips" : 0,

"millis" : 0,

"indexBounds" : {

"age" : [

[

25,

25

]

],

"salary" : [

[

15000,

15000

]

]

},

"server" : "dypcoe-OptiPlex-390:27017"

**Aggregate demo**

> use mydb;

switched to db mydb

> db.createCollection('users1')

{ "ok" : 1 }

> show collections;

system.indexes

users

> db.users1.insertOne({'user\_name':'swapnil','user\_id':101, 'age':20, 'state':'maharashtra'});

WriteResult({ "nInserted" : 1 })

> db.users1.insertOne({'user\_name':'nil','user\_id':102, 'age':25, 'state':'maharashtra'});

WriteResult({ "nInserted" : 1 })

> db.users1.insertOne({'user\_name':'amit','user\_id':103, 'age':35, 'state':'bihar'});

WriteResult({ "nInserted" : 1 })

> db.users1.insertOne({'user\_name':'amitabh','user\_id':104, 'age':45, 'state':'bihar'});

WriteResult({ "nInserted" : 1 })

> db.users1.insertOne({'user\_name':'sachin','user\_id':105, 'age':28, 'state':'kerala'});

WriteResult({ "nInserted" : 1 })

> db.users1.update({},{$set:{'salary': 10000}});

WriteResult({ "nMatched" : 1, "nUpserted" : 0 })

> db.users1.find();

{ "\_id" : ObjectId("57a2d2db709fb7392a588fe5"), "user\_name" : "nil", "user\_id" : 102, "age" : 25, "state" : "maharashtra" }

{ "\_id" : ObjectId("57a2d2f3709fb7392a588fe6"), "user\_name" : "amit", "user\_id" : 103, "age" : 35, "state" : "bihar" }

{ "\_id" : ObjectId("57a2d30a709fb7392a588fe7"), "user\_name" : "amitabh", "user\_id" : 104, "age" : 45, "state" : "bihar" }

{ "\_id" : ObjectId("57a2d325709fb7392a588fe8"), "user\_name" : "sachin", "user\_id" : 105, "age" : 28, "state" : "kerala" }

{ "\_id" : ObjectId("57a2d22c709fb7392a588fe4"), "age" : 20, "salary" : 10000, "state" : "maharashtra", "user\_id" : 101, "user\_name" : "swapnil" }

> db.users1.update({'user\_id':102},{$set:{'salary': 15000}});

WriteResult({ "nMatched" : 1, "nUpserted" : 0 })

> db.users1.update({'user\_id':103},{$set:{'salary': 25000}});

WriteResult({ "nMatched" : 1, "nUpserted" : 0 })

> db.users1.update({'user\_id':104},{$set:{'salary': 15000}});

WriteResult({ "nMatched" : 1, "nUpserted" : 0 })

> db.users1.update({'user\_id':105},{$set:{'salary': 20000}});

WriteResult({ "nMatched" : 1, "nUpserted" : 0 })

> db.users1.find();

{ "\_id" : ObjectId("57a2d22c709fb7392a588fe4"), "age" : 20, "salary" : 10000, "state" : "maharashtra", "user\_id" : 101, "user\_name" : "swapnil" }

{ "\_id" : ObjectId("57a2d2db709fb7392a588fe5"), "age" : 25, "salary" : 15000, "state" : "maharashtra", "user\_id" : 102, "user\_name" : "nil" }

{ "\_id" : ObjectId("57a2d2f3709fb7392a588fe6"), "age" : 35, "salary" : 25000, "state" : "bihar", "user\_id" : 103, "user\_name" : "amit" }

{ "\_id" : ObjectId("57a2d30a709fb7392a588fe7"), "age" : 45, "salary" : 15000, "state" : "bihar", "user\_id" : 104, "user\_name" : "amitabh" }

{ "\_id" : ObjectId("57a2d325709fb7392a588fe8"), "age" : 28, "salary" : 20000, "state" : "kerala", "user\_id" : 105, "user\_name" : "sachin" }

> db.users1.aggregate([{$group : {\_id:"$state", num\_totol : {$sum : "$salary"}}}]);

{ "\_id" : "kerala", "num\_totol" : 20000 }

{ "\_id" : "bihar", "num\_totol" : 40000 }

{ "\_id" : "maharashtra", "num\_totol" : 25000 }

> db.users1.find();

{ "\_id" : ObjectId("57a2d22c709fb7392a588fe4"), "age" : 20, "salary" : 10000, "state" : "maharashtra", "user\_id" : 101, "user\_name" : "swapnil" }

{ "\_id" : ObjectId("57a2d2db709fb7392a588fe5"), "age" : 25, "salary" : 15000, "state" : "maharashtra", "user\_id" : 102, "user\_name" : "nil" }

{ "\_id" : ObjectId("57a2d2f3709fb7392a588fe6"), "age" : 35, "salary" : 25000, "state" : "bihar", "user\_id" : 103, "user\_name" : "amit" }

{ "\_id" : ObjectId("57a2d30a709fb7392a588fe7"), "age" : 45, "salary" : 15000, "state" : "bihar", "user\_id" : 104, "user\_name" : "amitabh" }

{ "\_id" : ObjectId("57a2d325709fb7392a588fe8"), "age" : 28, "salary" : 20000, "state" : "kerala", "user\_id" : 105, "user\_name" : "sachin" }

> db.users1.aggregate([{$group : {\_id:"$state", num\_totol : {$max : "$salary"}}}]);

{ "\_id" : "kerala", "num\_totol" : 20000 }

{ "\_id" : "bihar", "num\_totol" : 25000 }

{ "\_id" : "maharashtra", "num\_totol" : 15000 }

> db.users1.aggregate([{$group : {\_id:"$state", num\_totol : {$min : "$salary"}}}]);

{ "\_id" : "kerala", "num\_totol" : 20000 }

{ "\_id" : "bihar", "num\_totol" : 15000 }

{ "\_id" : "maharashtra", "num\_totol" : 10000 }

> db.users1.aggregate([{$group : {\_id:"$state", num\_totol : {$avg : "$salary"}}}]);

{ "\_id" : "kerala", "num\_totol" : 20000 }

{ "\_id" : "bihar", "num\_totol" : 20000 }

{ "\_id" : "maharashtra", "num\_totol" : 12500 }

> db.users1.aggregate([{$group : {\_id:"$state", totol : {$first : "$salary"}}}]);

{ "\_id" : "kerala", "totol" : 20000 }

{ "\_id" : "bihar", "totol" : 25000 }

{ "\_id" : "maharashtra", "totol" : 10000 }

> db.users1.aggregate([{$group : {\_id:"$state", totol : {$last : "$salary"}}}]);

{ "\_id" : "kerala", "totol" : 20000 }

{ "\_id" : "bihar", "totol" : 15000 }

{ "\_id" : "maharashtra", "totol" : 15000 }

> db.users1.aggregate([{$group : {\_id:"$state", totol : {$last : "$salary"}}},{$sort:{totol:-1}}]);

{ "\_id" : "kerala", "totol" : 20000 }

{ "\_id" : "bihar", "totol" : 15000 }

{ "\_id" : "maharashtra", "totol" : 15000 }

> db.users.aggregate([{$group : {\_id:"$state", totol : {$last : "$salary"}}},{$sort:{totol:1}}]);

{ "\_id" : "bihar", "totol" : 15000 }

{ "\_id" : "maharashtra", "totol" : 15000 }

{ "\_id" : "kerala", "totol" : 20000 }

> db.users1.aggregate([{$group : {\_id:"$state", total : {$last : "$salary"}}},{$sort:{total:1}}]);

{ "\_id" : "bihar", "total" : 15000 }

{ "\_id" : "maharashtra", "total" : 15000 }

{ "\_id" : "kerala", "total" : 20000 }

> db.users1.aggregate([{$group : {\_id:"$state", total : {$sum : "$salary"}}},{$sort:{total:1}}]);

{ "\_id" : "kerala", "total" : 20000 }

{ "\_id" : "maharashtra", "total" : 25000 }

{ "\_id" : "bihar", "total" : 40000 }

> db.users1.aggregate([{$group : {\_id:"$state", total : {$avg : "$salary"}}},{$sort:{total:1}}]);

{ "\_id" : "maharashtra", "total" : 12500 }

{ "\_id" : "kerala", "total" : 20000 }

{ "\_id" : "bihar", "total" : 20000 }

> db.users1.aggregate([{$group : {\_id:"$state", total : {$min : "$salary"}}},{$sort:{total:1}}]);

{ "\_id" : "maharashtra", "total" : 10000 }

{ "\_id" : "bihar", "total" : 15000 }

{ "\_id" : "kerala", "total" : 20000 }

> db.users1.aggregate([{$group : {\_id:"$state", total : {$max : "$salary"}}},{$sort:{total:1}}]);

{ "\_id" : "maharashtra", "total" : 15000 }

{ "\_id" : "kerala", "total" : 20000 }

{ "\_id" : "bihar", "total" : 25000 }