

NAME - Kishanlal Choudhary
ROLL NO - 31114
CLASS - TE 1
SUBJECT - DBMS
DATE - 26/10/23
Assignment No - 10

```
-----START-----

> use 31114_db
switched to db 31114_db

> show collections
products

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

> db.products.insertMany(
  [ { "name" : "samsung m12", "brand" : "samsung", "cost" : 12000, "qty" : 21},
    { "name" : "iphone 12", "brand" : "apple", "cost" : 80000, "qty" : 20},
    { "name" : "oneplus t", "brand" : "oneplus", "cost" : 45000, "qty" : 30},
    { "name" : "motorola m3", "brand" : "motorola", "cost" : 30000, "qty" : 50},
    { "name" : "samsung a12", "brand" : "samsung", "cost" : 32000, "qty" : 25},
    { "name" : "iphone 13", "brand" : "apple", "cost" : 89000, "qty" : 45},
    { "name" : "oneplus g", "brand" : "oneplus", "cost" : 45000, "qty" : 63}
  ]
)
{
  acknowledged: true,
  insertedIds: {
    ObjectId("653a233d718a2bdd2cd21b79"),
    ObjectId("653a233d718a2bdd2cd21b7a"),
    ObjectId("653a233d718a2bdd2cd21b7b"),
    ObjectId("653a233d718a2bdd2cd21b7c"),
    ObjectId("653a233d718a2bdd2cd21b7d"),
    ObjectId("653a233d718a2bdd2cd21b7e"),
    ObjectId("653a233d718a2bdd2cd21b7f")
  }
}

> db.products.aggregate();
[
  {
    _id: ObjectId("653a233d718a2bdd2cd21b79"),
    name: 'samsung m12',
    brand: 'samsung',
    cost: 12000,
    qty: 21
  },
  {
    _id: ObjectId("653a233d718a2bdd2cd21b7a"),
    name: 'iphone 12',
    brand: 'apple',
    cost: 80000,
    qty: 20
  },
  {
    _id: ObjectId("653a233d718a2bdd2cd21b7b"),
```

```

    name: 'oneplus t',
    brand: 'oneplus',
    cost: 45000,
    qty: 30
  },
  {
    _id: ObjectId("653a233d718a2bdd2cd21b7c"),
    name: 'motorola m3',
    brand: 'motorola',
    cost: 30000,
    qty: 50
  },
  {
    _id: ObjectId("653a233d718a2bdd2cd21b7d"),
    name: 'samsung a12',
    brand: 'samsung',
    cost: 32000,
    qty: 25
  },
  {
    _id: ObjectId("653a233d718a2bdd2cd21b7e"),
    name: 'iphone 13',
    brand: 'apple',
    cost: 89000,
    qty: 45
  },
  {
    _id: ObjectId("653a233d718a2bdd2cd21b7f"),
    name: 'oneplus g',
    brand: 'oneplus',
    cost: 45000,
    qty: 63
  }
]

> db.products.aggregate([{$group:{_id:"$brand"}}]);
[
  { _id: 'samsung' },
  { _id: 'apple' },
  { _id: 'oneplus' },
  { _id: 'motorola' }
]

> db.products.aggregate([{$group:{_id:"$brand", count:{$sum : 1}}});
[
  { _id: 'apple', count: 2 },
  { _id: 'motorola', count: 1 },
  { _id: 'oneplus', count: 2 },
  { _id: 'samsung', count: 2 }
]

> db.products.aggregate([{$group:{_id:"$brand", totalQuantity:{$sum:"$qty"}}});
[
  { _id: 'apple', totalQuantity: 65 },
  { _id: 'oneplus', totalQuantity: 93 },
  { _id: 'samsung', totalQuantity: 46 },
  { _id: 'motorola', totalQuantity: 50 }
]

```

```

> db.products.aggregate([{$group:{_id:"$brand", averageCost:{$avg:"$cost"}}}]);
[
  { _id: 'apple', averageCost: 84500 },
  { _id: 'oneplus', averageCost: 45000 },
  { _id: 'samsung', averageCost: 22000 },
  { _id: 'motorola', averageCost: 30000 }
]

> db.products.aggregate([{$group:{_id:"$brand", minCost:{$min:"$cost"}}}]);
[
  { _id: 'apple', minCost: 80000 },
  { _id: 'oneplus', minCost: 45000 },
  { _id: 'samsung', minCost: 12000 },
  { _id: 'motorola', minCost: 30000 }
]

> db.products.aggregate([{$group:{_id:"$brand", maxCost:{$max:"$cost"}}}]);
[
  { _id: 'apple', maxCost: 89000 },
  { _id: 'oneplus', maxCost: 45000 },
  { _id: 'samsung', maxCost: 32000 },
  { _id: 'motorola', maxCost: 30000 }
]

> db.products.aggregate([{$limit:1}]);
[
  {
    _id: ObjectId("653a233d718a2bdd2cd21b79"),
    name: 'samsung m12',
    brand: 'samsung',
    cost: 12000,
    qty: 21
  }
]

> db.products.aggregate([{$limit:3}]);
[
  {
    _id: ObjectId("653a233d718a2bdd2cd21b79"),
    name: 'samsung m12',
    brand: 'samsung',
    cost: 12000,
    qty: 21
  },
  {
    _id: ObjectId("653a233d718a2bdd2cd21b7a"),
    name: 'iphone 12',
    brand: 'apple',
    cost: 80000,
    qty: 20
  },
  {
    _id: ObjectId("653a233d718a2bdd2cd21b7b"),
    name: 'oneplus t',
    brand: 'oneplus',
    cost: 45000,
    qty: 30
  }
]

```

```

> db.products.aggregate([{$skip:3}]);
[
  {
    _id: ObjectId("653a233d718a2bdd2cd21b7c"),
    name: 'motorola m3',
    brand: 'motorola',
    cost: 30000,
    qty: 50
  },
  {
    _id: ObjectId("653a233d718a2bdd2cd21b7d"),
    name: 'samsung a12',
    brand: 'samsung',
    cost: 32000,
    qty: 25
  },
  {
    _id: ObjectId("653a233d718a2bdd2cd21b7e"),
    name: 'iphone 13',
    brand: 'apple',
    cost: 89000,
    qty: 45
  },
  {
    _id: ObjectId("653a233d718a2bdd2cd21b7f"),
    name: 'oneplus g',
    brand: 'oneplus',
    cost: 45000,
    qty: 63
  }
]

```

```

> db.products.aggregate([{$skip:1}]);
[
  {
    _id: ObjectId("653a233d718a2bdd2cd21b7a"),
    name: 'iphone 12',
    brand: 'apple',
    cost: 80000,
    qty: 20
  },
  {
    _id: ObjectId("653a233d718a2bdd2cd21b7b"),
    name: 'oneplus t',
    brand: 'oneplus',
    cost: 45000,
    qty: 30
  },
  {
    _id: ObjectId("653a233d718a2bdd2cd21b7c"),
    name: 'motorola m3',
    brand: 'motorola',
    cost: 30000,
    qty: 50
  },
  {
    _id: ObjectId("653a233d718a2bdd2cd21b7d"),
    name: 'samsung a12',

```

```

    brand: 'samsung',
    cost: 32000,
    qty: 25
  },
  {
    _id: ObjectId("653a233d718a2bdd2cd21b7e"),
    name: 'iphone 13',
    brand: 'apple',
    cost: 89000,
    qty: 45
  },
  {
    _id: ObjectId("653a233d718a2bdd2cd21b7f"),
    name: 'oneplus g',
    brand: 'oneplus',
    cost: 45000,
    qty: 63
  }
]

> db.products.find({name:"samsung m12"}).explain("executionStats");
{
  explainVersion: '1',
  queryPlanner: {
    namespace: 'dbms_assignment.products',
    indexFilterSet: false,
    parsedQuery: { name: { '$eq': 'samsung m12' } } },
    queryHash: '64908032',
    planCacheKey: '64908032',
    maxIndexedOrSolutionsReached: false,
    maxIndexedAndSolutionsReached: false,
    maxScansToExplodeReached: false,
    winningPlan: {
      stage: 'COLLSCAN',
      filter: { name: { '$eq': 'samsung m12' } } },
      direction: 'forward'
    },
    rejectedPlans: []
  },
  executionStats: {
    executionSuccess: true,
    nReturned: 1,
    executionTimeMillis: 2,
    totalKeysExamined: 0,
    totalDocsExamined: 7,
    executionStages: {
      stage: 'COLLSCAN',
      filter: { name: { '$eq': 'samsung m12' } } },
      nReturned: 1,
      executionTimeMillisEstimate: 0,
      works: 9,
      advanced: 1,
      needTime: 7,
      needYield: 0,
      saveState: 0,
      restoreState: 0,
      isEOF: 1,
      direction: 'forward',
      docsExamined: 7
    }
  }
}

```

```

    }
  },
  command: {
    find: 'products',
    filter: { name: 'samsung m12' },
    '$db': 'dbms_assignment'
  },
  serverInfo: {
    host: 'LAPTOP-2PU4C1PG',
    port: 27017,
    version: '6.0.6',
    gitVersion: '26b4851a412cc8b9b4a18cdb6cd0f9f642e06aa7'
  },
  serverParameters: {
    internalQueryFacetBufferSizeBytes: 104857600,
    internalQueryFacetMaxOutputDocSizeBytes: 104857600,
    internalLookupStageIntermediateDocumentMaxSizeBytes: 104857600,
    internalDocumentSourceGroupMaxMemoryBytes: 104857600,
    internalQueryMaxBlockingSortMemoryUsageBytes: 104857600,
    internalQueryProhibitBlockingMergeOnMongoS: 0,
    internalQueryMaxAddToSetBytes: 104857600,
    internalDocumentSourceSetWindowFieldsMaxMemoryBytes: 104857600
  },
  ok: 1
}

> db.products.ensureIndex({name: 1, brand: 1});
[ 'name_1_brand_1' ]

> db.products.getIndexes();
[
  { v: 2, key: { _id: 1 }, name: '_id_' },
  { v: 2, key: { name: 1, brand: 1 }, name: 'name_1_brand_1' }
]

> db.products.find({name:"samsung m12"}).explain("executionStats");
{
  explainVersion: '1',
  queryPlanner: {
    namespace: 'dbms_assignment.products',
    indexFilterSet: false,
    parsedQuery: { name: { '$eq': 'samsung m12' } },
    queryHash: '64908032',
    planCacheKey: 'A6C0273F',
    maxIndexedOrSolutionsReached: false,
    maxIndexedAndSolutionsReached: false,
    maxScansToExplodeReached: false,
    winningPlan: {
      stage: 'FETCH',
      inputStage: {
        stage: 'IXSCAN',
        keyPattern: { name: 1, brand: 1 },
        indexName: 'name_1_brand_1',
        isMultiKey: false,
        multiKeyPaths: { name: [], brand: [] },
        isUnique: false,
        isSparse: false,
        isPartial: false,
        indexVersion: 2,

```

```

        direction: 'forward',
        indexBounds: {
            name: [ '["samsung m12", "samsung m12"]' ],
            brand: [ '[MinKey, MaxKey]' ]
        }
    },
    rejectedPlans: []
},
executionStats: {
    executionSuccess: true,
    nReturned: 1,
    executionTimeMillis: 8,
    totalKeysExamined: 1,
    totalDocsExamined: 1,
    executionStages: {
        stage: 'FETCH',
        nReturned: 1,
        executionTimeMillisEstimate: 0,
        works: 2,
        advanced: 1,
        needTime: 0,
        needYield: 0,
        saveState: 0,
        restoreState: 0,
        isEOF: 1,
        docsExamined: 1,
        alreadyHasObj: 0,
        inputStage: {
            stage: 'IXSCAN',
            nReturned: 1,
            executionTimeMillisEstimate: 0,
            works: 2,
            advanced: 1,
            needTime: 0,
            needYield: 0,
            saveState: 0,
            restoreState: 0,
            isEOF: 1,
            keyPattern: { name: 1, brand: 1 },
            indexName: 'name_1_brand_1',
            isMultiKey: false,
            multiKeyPaths: { name: [], brand: [] },
            isUnique: false,
            isSparse: false,
            isPartial: false,
            indexVersion: 2,
            direction: 'forward',
            indexBounds: {
                name: [ '["samsung m12", "samsung m12"]' ],
                brand: [ '[MinKey, MaxKey]' ]
            },
            keysExamined: 1,
            seeks: 1,
            dupsTested: 0,
            dupsDropped: 0
        }
    }
},

```

```
command: {
  find: 'products',
  filter: { name: 'samsung m12' },
  '$db': 'dbms_assignment'
},
serverInfo: {
  host: 'LAPTOP-2PU4C1PG',
  port: 27017,
  version: '6.0.6',
  gitVersion: '26b4851a412cc8b9b4a18cdb6cd0f9f642e06aa7'
},
serverParameters: {
  internalQueryFacetBufferSizeBytes: 104857600,
  internalQueryFacetMaxOutputDocSizeBytes: 104857600,
  internalLookupStageIntermediateDocumentMaxSizeBytes: 104857600,
  internalDocumentSourceGroupMaxMemoryBytes: 104857600,
  internalQueryMaxBlockingSortMemoryUsageBytes: 104857600,
  internalQueryProhibitBlockingMergeOnMongoS: 0,
  internalQueryMaxAddToSetBytes: 104857600,
  internalDocumentSourceSetWindowFieldsMaxMemoryBytes: 104857600
},
ok: 1
}

> db.products.dropIndex("name_1_brand_1");
{ nIndexesWas: 2, ok: 1 }
```

-----END-----