NAME - Kishanlal Choudhary
ROLL NO - 31114
CLASS - TE 1
SUBJECT - DBMSL Mock 2
DATE - 30/10/23
Assignment No - 10

----------------------------------START----------------------------------

```
> db.prod.find()
{ "_id" : ObjectId("6539e6e661f10b5dfdc0c678"), "name" : "samsung m12", "brand" : "samsung", "cost" : 12000, "qty"
{ "_id" : ObjectId("6539e6e661f10b5dfdc0c679"), "name" : "iphone 12", "brand" : "apple", "cost" : 80000, "qty" : 20 }
{ "_id" : ObjectId("6539e6e661f10b5dfdc0c67a"), "name" : "oneplus t", "brand" : "oneplus", "cost" : 45000, "qty" : 30 }
{ "_id" : ObjectId("6539e6e661f10b5dfdc0c67b"), "name" : "motorola m3", "brand" : "motorola", "cost" : 30000, "qty" :
{ "_id" : ObjectId("6539e6e661f10b5dfdc0c67c"), "name" : "samsung a12", "brand" : "samsung", "cost" : 32000, "qty" :
{ "_id" : ObjectId("6539e6e661f10b5dfdc0c67d"), "name" : "iphone 13", "brand" : "apple", "cost" : 89000, "qty" : 45 }
{ "_id" : ObjectId("6539e6e661f10b5dfdc0c67e"), "name" : "oneplus g", "brand" : "oneplus", "cost" : 45000, "qty" : 63 }

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

> db.prod.aggregate([{$group:{_id : "$brand", total_cost : {$sum : "$cost"}}}])
{ "_id" : "samsung", "total_cost" : 44000 }
{ "_id" : "apple", "total_cost" : 169000 }
{ "_id" : "oneplus", "total_cost" : 90000 }
{ "_id" : "motorola", "total_cost" : 30000 }

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

> db.prod.aggregate([{$group:{_id : "$brand", average_cost : {$avg : "$cost"}}}, {$limit : 1}])
{ "_id" : "samsung", "average_cost" : 22000 }
> db.prod.aggregate([{$group:{_id : "$brand", average_cost : {$avg : "$cost"}}}, {$limit : 3}])
{ "_id" : "samsung", "average_cost" : 22000 }
{ "_id" : "motorola", "average_cost" : 30000 }
{ "_id" : "apple", "average_cost" : 84500 }

> db.prod.aggregate([{$group:{_id : "$brand", average_cost : {$avg : "$cost"}}}, {$skip : 3}])
{ "_id" : "oneplus", "average_cost" : 45000 }
> db.prod.aggregate([{$group:{_id : "$brand", average_cost : {$avg : "$cost"}}}, {$skip : 2}])
{ "_id" : "apple", "average_cost" : 84500 }
{ "_id" : "samsung", "average_cost" : 22000 }

> db.prod.aggregate([{$group:{_id : "$brand", average_cost : {$avg : "$cost"}}}, {$sort : {average_cost : 1}}])
{ "_id" : "samsung", "average_cost" : 22000 }
{ "_id" : "motorola", "average_cost" : 30000 }
{ "_id" : "oneplus", "average_cost" : 45000 }
{ "_id" : "apple", "average_cost" : 84500 }

> db.prod.aggregate([{$group:{_id : "$brand", average_cost : {$avg : "$cost"}}}, {$sort : {average_cost : -1}}])
{ "_id" : "apple", "average_cost" : 84500 }
{ "_id" : "oneplus", "average_cost" : 45000 }
{ "_id" : "motorola", "average_cost" : 30000 }
{ "_id" : "samsung", "average_cost" : 22000 }
```

```
> db.prod.find({brand:"motorola", "name" : "motorola m3"}).explain("executionStats")
{
	"queryPlanner" : {
		"plannerVersion" : 1,
		"namespace" : "31110_db.prod",
		"indexFilterSet" : false,
		"parsedQuery" : {
			"$and" : [
				{
					"brand" : {
						"$eq" : "motorola"
					}
				},
				{
					"name" : {
						"$eq" : "motorola m3"
					}
				}
			]
		},
		"winningPlan" : {
			"stage" : "COLLSCAN",
			"filter" : {
				"$and" : [
					{
						"brand" : {
							"$eq" : "motorola"
						}
					},
					{
						"name" : {
							"$eq" : "motorola m3"
						}
					}
				]
			},
			"direction" : "forward"
		},
		"rejectedPlans" : [ ]
	},
	"executionStats" : {
		"executionSuccess" : true,
		"nReturned" : 1,
		"executionTimeMillis" : 0,
		"totalKeysExamined" : 0,
		"totalDocsExamined" : 7,
		"executionStages" : {
			"stage" : "COLLSCAN",
			"filter" : {
				"$and" : [
					{
						"brand" : {
							"$eq" : "motorola"
						}
					},
					{
						"name" : {
							"$eq" : "motorola m3"
						}
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          }
        ]
      },
      "nReturned" : 1,
      "executionTimeMillisEstimate" : 0,
      "works" : 9,
      "advanced" : 1,
      "needTime" : 7,
      "needYield" : 0,
      "saveState" : 0,
      "restoreState" : 0,
      "isEOF" : 1,
      "direction" : "forward",
      "docsExamined" : 7
    }
  },
  "serverInfo" : {
    "host" : "localhost.localdomain",
    "port" : 27017,
    "version" : "4.2.13",
    "gitVersion" : "82dd40f60c55dae12426c08fd7150d79a0e28e23"
  },
  "ok" : 1
}

> db.prod.ensureIndex({name:1, brand:1})
{
  "createdCollectionAutomatically" : false,
  "numIndexesBefore" : 1,
  "numIndexesAfter" : 2,
  "ok" : 1
}

> db.prod.getIndexes();
[
  {
    "v" : 2,
    "key" : {
      "_id" : 1
    },
    "name" : "_id_",
    "ns" : "31114_db.prod"
  }
]


> db.prod.find({brand:"motorola", "name" : "motorola m3"}).explain("executionStats")
{
  "queryPlanner" : {
    "plannerVersion" : 1,
    "namespace" : "31114_db.prod",
    "indexFilterSet" : false,
    "parsedQuery" : {
      "$and" : [
        {
          "brand" : {
            "$eq" : "motorola"
          }
        },
        {
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            "name" : {
                "$eq" : "motorola m3"
            }
        }
    ]
},
"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" : [
                "[\"motorola m3\", \"motorola m3\"]"
            ],
            "brand" : [
                "[\"motorola\", \"motorola\"]"
            ]
        }
    }
},
"rejectedPlans" : [ ]
},
"executionStats" : {
    "executionSuccess" : true,
    "nReturned" : 1,
    "executionTimeMillis" : 1,
    "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,
```

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            "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" : [
                    "[\"motorola m3\", \"motorola m3\"]"
                ],
                "brand" : [
                    "[\"motorola\", \"motorola\"]"
                ]
            },
            "keysExamined" : 1,
            "seeks" : 1,
            "dupsTested" : 0,
            "dupsDropped" : 0
        }
    }
  },
  "serverInfo" : {
    "host" : "localhost.localdomain",
    "port" : 27017,
    "version" : "4.2.13",
    "gitVersion" : "82dd40f60c55dae12426c08fd7150d79a0e28e23"
  },
  "ok" : 1
}

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

---------------------------------END---------------------------------
```