**Figure 1**: MongoDB Index Logical View/Single Field Index

|  |  |  |
| --- | --- | --- |
| Collection | | |
| a | **b** | **c** |
| 3 | **2** | **1** |
| 1 | **1** | **3** |
| 1 | **2** | **3** |
| 2 | **2** | **1** |
| 3 | **1** | **3** |
| 1 | **3** | **1** |
| 2 | **3** | **3** |
| 3 | **1** | **1** |
| 1 | **2** | **1** |
| 2 | **1** | **3** |
| 2 | **2** | **2** |
| 3 | **2** | **3** |

|  |
| --- |
| Index(a:1) |
| a |
| 1 |
| 2 |
| 3 |

|  |
| --- |
| Index(c:-1) |
| C |
| 3 |
| 2 |
| 1 |

**Figure 2: Compound Indexes**

|  |  |  |
| --- | --- | --- |
| Collection | | |
| a | **b** | **c** |
| 3 | **2** | **1** |
| 1 | **1** | **3** |
| 1 | **2** | **3** |
| 2 | **2** | **1** |
| 3 | **1** | **3** |
| 1 | **3** | **1** |
| 2 | **3** | **3** |
| 3 | **1** | **1** |
| 1 | **2** | **1** |
| 2 | **1** | **3** |
| 2 | **2** | **2** |
| 3 | **2** | **3** |

|  |  |  |
| --- | --- | --- |
| Index(a:1 ,b:1, c:1) | | |
| a | **b** | **c** |
| 1 | **1** | **3** |
| 1 | **2** | **2** |
| 1 | **2** | **3** |
| 1 | **3** | **1** |
| 2 | **1** | **3** |
| 2 | **2** | **1** |
| 2 | **2** | **2** |
| 2 | **3** | **3** |
| 3 | **1** | **1** |
| 3 | **1** | **3** |
| 3 | **2** | **1** |
| 3 | **2** | **3** |

**find({a:1, b:2}).explain("executionStats");**

|  |
| --- |
| "executionStats" : {  "executionSuccess" : true,  "nReturned" : 1, //documents returned.  "executionTimeMillis" : 0, // time consumption  "totalKeysExamined" : 1, // Index items scanned  "totalDocsExamined" : 1, // Documents scanned  "executionStages" : {  "stage" : "FETCH", //Last Step  "nReturned" : 1,  "executionTimeMillisEstimate" : 0,  "works" : 3,  "advanced" : 1,  "needTime" : 0,  "needFetch" : 0,  "saveState" : 0,  "restoreState" : 0,  "isEOF" : 1,  "invalidates" : 0,  "docsExamined" : 1,  "alreadyHasObj" : 0,  "inputStage" : {  "stage" : "IXSCAN", //Second Last Step  "nReturned" : 1,  "executionTimeMillisEstimate" : 0,  "works" : 2,  "advanced" : 1,  "needTime" : 0,  "needFetch" : 0,  "saveState" : 0,  "restoreState" : 0,  "isEOF" : 1,  "invalidates" : 0,  "keyPattern" : {  "a" : 1,  "b" : 1  },  "indexName" : "a\_1\_b\_1",  "isMultiKey" : false,  "direction" : "forward",  "indexBounds" : {  "a" : [  "[1.0, 1.0]"  ],  "b" : [  "[2.0, 2.0]"  ]  },  "keysExamined" : 1,  "dupsTested" : 0,  "dupsDropped" : 0,  "seenInvalidated" : 0,  "matchTested" : 0  }  }  } |