```
> db.a2.insert({rno:1,name:'abc',per:98})
> db.a2.find({},{_id:0})
{ "rno" : 1, "name" : "abc", "per" : 98 }
> db.a2.find({},{})
{ "_id" : ObjectId("5b890ac8b1799106c0b92151"), "rno" : 1, "name" : "abc",
"per" : 98 }
> db.a2.insert({_id:1001,rno:2,name:'pqr',per:94})
> db.a2.find({},{})
{ "_id" : ObjectId("5b890ac8b1799106c0b92151"), "rno" : 1, "name" : "abc",
"per" : 98 }
{ "_id" : 1001, "rno" : 2, "name" : "pqr", "per" : 94 }
> db.a2.save({_id:1002,rno:3,name:'lmn',per:96})
> db.a2.find({},{})
{ "_id" : ObjectId("5b890ac8b1799106c0b92151"), "rno" : 1, "name" : "abc",
"per" : 98 }
{ "_id" : 1001, "rno" : 2, "name" : "pqr", "per" : 94 }
{ "_id" : 1002, "rno" : 3, "name" : "lmn", "per" : 96 }
> db.a2.insert({_id:1001,rno:2,name:'pqr',per:94})
E11000 duplicate key error index: TE.a2.$_id_  dup key: { : 1001.0 }
> db.a2.save({_id:1002,rno:3,name:'lmn',per:96})
> db.a2.save({_id:1002,rno:3,name:'lmn',per:97})
> db.a2.find({},{})
{ "_id" : ObjectId("5b890ac8b1799106c0b92151"), "rno" : 1, "name" : "abc",
"per" : 98 }
{ "_id" : 1001, "rno" : 2, "name" : "pqr", "per" : 94 }
{ "_id" : 1002, "rno" : 3, "name" : "lmn", "per" : 97 }
> db.a2.find({},{_id:0})
{ "rno" : 1, "name" : "abc", "per" : 98 }
{ "rno" : 2, "name" : "pqr", "per" : 94 }
{ "rno" : 3, "name" : "lmn", "per" : 97 }
> db.a2.find({$and:[{name:'abc'},{per:98}]},{_id:0})
{ "rno" : 1, "name" : "abc", "per" : 98 }
> db.a2.find({$and:[{name:'abc'},{per:97}]},{_id:0})
> db.a2.find({$or:[{name:'abc'},{per:97}]},{_id:0})
{ "rno" : 1, "name" : "abc", "per" : 98 }
{ "rno" : 3, "name" : "lmn", "per" : 97 }
> db.a2.find({},{_id:0})
{ "rno" : 1, "name" : "abc", "per" : 98 }
{ "rno" : 2, "name" : "pqr", "per" : 94 }
{ "rno" : 3, "name" : "lmn", "per" : 97 }
> db.a2.find({rno:1},{_id:0})
{ "rno" : 1, "name" : "abc", "per" : 98 }
> db.a2.find({rno:1,2},{_id:0})
Fri Aug 31 15:11:23.770 SyntaxError: Unexpected token }
> db.a2.find({$or:[{rno:1},{rno:3}]},{_id:0})
{ "rno" : 1, "name" : "abc", "per" : 98 }
{ "rno" : 3, "name" : "lmn", "per" : 97 }
> db.a2.find({rno:{$in:[1,3]}},{_id:0})
{ "rno" : 1, "name" : "abc", "per" : 98 }
{ "rno" : 3, "name" : "lmn", "per" : 97 }
> db.a2.find({rno:{$not:{$in:[1,3]}}},{_id:0})
{ "rno" : 2, "name" : "pqr", "per" : 94 }
> db.a2.find({name:'abc'},{_id:0})
{ "rno" : 1, "name" : "abc", "per" : 98 }
```

```
> db.a2.find({$not:{{name:'abc'}},{_id:0})
...
...
> db.a2.find({$not:{name:'abc'}},{_id:0})
> db.createCollection("a3");
{ "ok" : 1 }
> db.a3.insert({rno:1,name:'abc',dept:'comp',per:89})
> db.a3.insert({rno:2,name:'abc',dept:'comp',per:91})
> db.a3.insert({rno:3,name:'abc',dept:'it',per:91})
> db.a3.insert({rno:4,name:'abc',dept:'it',per:91})
> db.a3.insert({rno:5,name:'abc',dept:'mech',per:92})
> db.a3.find({},{_id:0})
{ "rno" : 1, "name" : "abc", "dept" : "comp", "per" : 89 }
{ "rno" : 2, "name" : "abc", "dept" : "comp", "per" : 91 }
{ "rno" : 3, "name" : "abc", "dept" : "it", "per" : 91 }
{ "rno" : 4, "name" : "abc", "dept" : "it", "per" : 91 }
{ "rno" : 5, "name" : "abc", "dept" : "mech", "per" : 92 }
> db.a3.find({},{_id:0,name:0})
{ "rno" : 1, "dept" : "comp", "per" : 89 }
{ "rno" : 2, "dept" : "comp", "per" : 91 }
{ "rno" : 3, "dept" : "it", "per" : 91 }
{ "rno" : 4, "dept" : "it", "per" : 91 }
{ "rno" : 5, "dept" : "mech", "per" : 92 }
> db.a3.aggregate({$project:{rno:1}})
{
        "result" : [
                {
                        "_id" : ObjectId("5b890f21b1799106c0b92152"),
                        "rno" : 1
                },
                {
                        "_id" : ObjectId("5b890f32b1799106c0b92153"),
                        "rno" : 2
                },
                {
                        "_id" : ObjectId("5b890f4ab1799106c0b92154"),
                        "rno" : 3
                },
                {
                        "_id" : ObjectId("5b890f52b1799106c0b92155"),
                        "rno" : 4
                },
                {
                        "_id" : ObjectId("5b890f6eb1799106c0b92156"),
                        "rno" : 5
                }
        ],
        "ok" : 1
}
> db.a3.aggregate({$project:{rno:1,name:1}})
{
        "result" : [
                {
                        "_id" : ObjectId("5b890f21b1799106c0b92152"),
```

```
                        "rno" : 1,
                        "name" : "abc"
                },
                {
                        "_id" : ObjectId("5b890f32b1799106c0b92153"),
                        "rno" : 2,
                        "name" : "abc"
                },
                {
                        "_id" : ObjectId("5b890f4ab1799106c0b92154"),
                        "rno" : 3,
                        "name" : "abc"
                },
                {
                        "_id" : ObjectId("5b890f52b1799106c0b92155"),
                        "rno" : 4,
                        "name" : "abc"
                },
                {
                        "_id" : ObjectId("5b890f6eb1799106c0b92156"),
                        "rno" : 5,
                        "name" : "abc"
                }
        ],
        "ok" : 1
}
> db.a3.aggregate({$limit:1})
{
        "result" : [
                {
                        "_id" : ObjectId("5b890f21b1799106c0b92152"),
                        "rno" : 1,
                        "name" : "abc",
                        "dept" : "comp",
                        "per" : 89
                }
        ],
        "ok" : 1
}
> db.a3.aggregate({$limit:2})
{
        "result" : [
                {
                        "_id" : ObjectId("5b890f21b1799106c0b92152"),
                        "rno" : 1,
                        "name" : "abc",
                        "dept" : "comp",
                        "per" : 89
                },
                {
                        "_id" : ObjectId("5b890f32b1799106c0b92153"),
                        "rno" : 2,
                        "name" : "abc",
                        "dept" : "comp",
```

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                                "per" : 91
                        }
                ],
                "ok" : 1
        }
        > db.a3.aggregate({$limit:3})
        {
                "result" : [
                        {
                                "_id" : ObjectId("5b890f21b1799106c0b92152"),
                                "rno" : 1,
                                "name" : "abc",
                                "dept" : "comp",
                                "per" : 89
                        },
                        {
                                "_id" : ObjectId("5b890f32b1799106c0b92153"),
                                "rno" : 2,
                                "name" : "abc",
                                "dept" : "comp",
                                "per" : 91
                        },
                        {
                                "_id" : ObjectId("5b890f4ab1799106c0b92154"),
                                "rno" : 3,
                                "name" : "abc",
                                "dept" : "it",
                                "per" : 91
                        }
                ],
                "ok" : 1
        }
        > db.a3.aggregate({$skip:1})
        {
                "result" : [
                        {
                                "_id" : ObjectId("5b890f32b1799106c0b92153"),
                                "rno" : 2,
                                "name" : "abc",
                                "dept" : "comp",
                                "per" : 91
                        },
                        {
                                "_id" : ObjectId("5b890f4ab1799106c0b92154"),
                                "rno" : 3,
                                "name" : "abc",
                                "dept" : "it",
                                "per" : 91
                        },
                        {
                                "_id" : ObjectId("5b890f52b1799106c0b92155"),
                                "rno" : 4,
                                "name" : "abc",
                                "dept" : "it",
```

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                                "per" : 91
                },
                {
                        "_id" : ObjectId("5b890f6eb1799106c0b92156"),
                        "rno" : 5,
                        "name" : "abc",
                        "dept" : "mech",
                        "per" : 92
                }
        ],
        "ok" : 1
}
> db.a3.aggregate({$skip:2})
{
        "result" : [
                {
                        "_id" : ObjectId("5b890f4ab1799106c0b92154"),
                        "rno" : 3,
                        "name" : "abc",
                        "dept" : "it",
                        "per" : 91
                },
                {
                        "_id" : ObjectId("5b890f52b1799106c0b92155"),
                        "rno" : 4,
                        "name" : "abc",
                        "dept" : "it",
                        "per" : 91
                },
                {
                        "_id" : ObjectId("5b890f6eb1799106c0b92156"),
                        "rno" : 5,
                        "name" : "abc",
                        "dept" : "mech",
                        "per" : 92
                }
        ],
        "ok" : 1
}
> db.a3.aggregate({$skip:3})
{
        "result" : [
                {
                        "_id" : ObjectId("5b890f52b1799106c0b92155"),
                        "rno" : 4,
                        "name" : "abc",
                        "dept" : "it",
                        "per" : 91
                },
                {
                        "_id" : ObjectId("5b890f6eb1799106c0b92156"),
                        "rno" : 5,
                        "name" : "abc",
                        "dept" : "mech",
```

```
                                "per" : 92
                        }
                ],
                "ok" : 1
        }
        > db.a3.aggregate({$skip:4})
        {
                "result" : [
                        {
                                "_id" : ObjectId("5b890f6eb1799106c0b92156"),
                                "rno" : 5,
                                "name" : "abc",
                                "dept" : "mech",
                                "per" : 92
                        }
                ],
                "ok" : 1
        }
        > db.a3.aggregate({$sort:{rno:1}})
        {
                "result" : [
                        {
                                "_id" : ObjectId("5b890f21b1799106c0b92152"),
                                "rno" : 1,
                                "name" : "abc",
                                "dept" : "comp",
                                "per" : 89
                        },
                        {
                                "_id" : ObjectId("5b890f32b1799106c0b92153"),
                                "rno" : 2,
                                "name" : "abc",
                                "dept" : "comp",
                                "per" : 91
                        },
                        {
                                "_id" : ObjectId("5b890f4ab1799106c0b92154"),
                                "rno" : 3,
                                "name" : "abc",
                                "dept" : "it",
                                "per" : 91
                        },
                        {
                                "_id" : ObjectId("5b890f52b1799106c0b92155"),
                                "rno" : 4,
                                "name" : "abc",
                                "dept" : "it",
                                "per" : 91
                        },
                        {
                                "_id" : ObjectId("5b890f6eb1799106c0b92156"),
                                "rno" : 5,
                                "name" : "abc",
                                "dept" : "mech",
```

```
                        "per" : 92
                }
        ],
        "ok" : 1
}
> db.a3.aggregate({$sort:{rno:-1}})
{
        "result" : [
                {
                        "_id" : ObjectId("5b890f6eb1799106c0b92156"),
                        "rno" : 5,
                        "name" : "abc",
                        "dept" : "mech",
                        "per" : 92
                },
                {
                        "_id" : ObjectId("5b890f52b1799106c0b92155"),
                        "rno" : 4,
                        "name" : "abc",
                        "dept" : "it",
                        "per" : 91
                },
                {
                        "_id" : ObjectId("5b890f4ab1799106c0b92154"),
                        "rno" : 3,
                        "name" : "abc",
                        "dept" : "it",
                        "per" : 91
                },
                {
                        "_id" : ObjectId("5b890f32b1799106c0b92153"),
                        "rno" : 2,
                        "name" : "abc",
                        "dept" : "comp",
                        "per" : 91
                },
                {
                        "_id" : ObjectId("5b890f21b1799106c0b92152"),
                        "rno" : 1,
                        "name" : "abc",
                        "dept" : "comp",
                        "per" : 89
                }
        ],
        "ok" : 1
}
> db.a3.aggregate({$sort:{name:-1}})
{
        "result" : [
                {
                        "_id" : ObjectId("5b890f21b1799106c0b92152"),
                        "rno" : 1,
                        "name" : "abc",
                        "dept" : "comp",
```

```
                        "per" : 89
                },
                {
                        "_id" : ObjectId("5b890f32b1799106c0b92153"),
                        "rno" : 2,
                        "name" : "abc",
                        "dept" : "comp",
                        "per" : 91
                },
                {
                        "_id" : ObjectId("5b890f4ab1799106c0b92154"),
                        "rno" : 3,
                        "name" : "abc",
                        "dept" : "it",
                        "per" : 91
                },
                {
                        "_id" : ObjectId("5b890f52b1799106c0b92155"),
                        "rno" : 4,
                        "name" : "abc",
                        "dept" : "it",
                        "per" : 91
                },
                {
                        "_id" : ObjectId("5b890f6eb1799106c0b92156"),
                        "rno" : 5,
                        "name" : "abc",
                        "dept" : "mech",
                        "per" : 92
                }
        ],
        "ok" : 1
}
> db.a3.aggregate({$group:{"_id":"$dept"    ,"Count":{$sum:1}  }})
{
        "result" : [
                {
                        "_id" : "mech",
                        "Count" : 1
                },
                {
                        "_id" : "it",
                        "Count" : 2
                },
                {
                        "_id" : "comp",
                        "Count" : 2
                }
        ],
        "ok" : 1
}
> db.a3.aggregate({$limit:3})
{
        "result" : [
```

```
                {
                        "_id" : ObjectId("5b890f21b1799106c0b92152"),
                        "rno" : 1,
                        "name" : "abc",
                        "dept" : "comp",
                        "per" : 89
                },
                {
                        "_id" : ObjectId("5b890f32b1799106c0b92153"),
                        "rno" : 2,
                        "name" : "abc",
                        "dept" : "comp",
                        "per" : 91
                },
                {
                        "_id" : ObjectId("5b890f4ab1799106c0b92154"),
                        "rno" : 3,
                        "name" : "abc",
                        "dept" : "it",
                        "per" : 91
                }
        ],
        "ok" : 1
}
> db.a3.aggregate({$limit:3})
{
        "result" : [
                {
                        "_id" : ObjectId("5b890f21b1799106c0b92152"),
                        "rno" : 1,
                        "name" : "abc",
                        "dept" : "comp",
                        "per" : 89
                },
                {
                        "_id" : ObjectId("5b890f32b1799106c0b92153"),
                        "rno" : 2,
                        "name" : "abc",
                        "dept" : "comp",
                        "per" : 91
                },
                {
                        "_id" : ObjectId("5b890f4ab1799106c0b92154"),
                        "rno" : 3,
                        "name" : "abc",
                        "dept" : "it",
                        "per" : 91
                }
        ],
        "ok" : 1
}
> db.a3.aggregate({$limit:3},{$sort:{rno:-1}})
{
        "result" : [
```

```
                {
                        "_id" : ObjectId("5b890f4ab1799106c0b92154"),
                        "rno" : 3,
                        "name" : "abc",
                        "dept" : "it",
                        "per" : 91
                },
                {
                        "_id" : ObjectId("5b890f32b1799106c0b92153"),
                        "rno" : 2,
                        "name" : "abc",
                        "dept" : "comp",
                        "per" : 91
                },
                {
                        "_id" : ObjectId("5b890f21b1799106c0b92152"),
                        "rno" : 1,
                        "name" : "abc",
                        "dept" : "comp",
                        "per" : 89
                }
        ],
        "ok" : 1
}
> db.a3.aggregate({$limit:3},{$sort:{rno:-1}})
{
        "result" : [
                {
                        "_id" : ObjectId("5b890f4ab1799106c0b92154"),
                        "rno" : 3,
                        "name" : "abc",
                        "dept" : "it",
                        "per" : 91
                },
                {
                        "_id" : ObjectId("5b890f32b1799106c0b92153"),
                        "rno" : 2,
                        "name" : "abc",
                        "dept" : "comp",
                        "per" : 91
                },
                {
                        "_id" : ObjectId("5b890f21b1799106c0b92152"),
                        "rno" : 1,
                        "name" : "abc",
                        "dept" : "comp",
                        "per" : 89
                }
        ],
        "ok" : 1
}
```