```
db.teachers.insert({name: 'Raj' ,
qualification:'BeBed',deptno:1,deptname:'IT',designation:'A.Professor',experience:
{industry:1,teaching:5},salary:
{basic:80000,ta:3500,da:5000,hra:8000} ,doj:13042002,aptnature:'original',aoex:'Clo
ud Computing'});
WriteResult({ "nInserted" : 1 })
> db.teachers.find().pretty();
{
        "_id" : ObjectId("634e2da48bb95faf497a02e8"),
        "name" : "Raj",
        "qualification" : "BeBed",
        "deptno" : 1,
        "deptname" : "IT",
        "designation" : "A.Professor",
        "experience" : {
                "industry" : 1,
                "teaching" : 5
        },
        "salary" : {
                "basic" : 80000,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 13042002,
        "aptnature" : "original",
        "aoex" : "Cloud Computing"
}
{
        "_id" : ObjectId("634e2e338bb95faf497a02e9"),
        "name" : "Chetan",
        "qualification" : "MaBed",
        "deptno" : 2,
        "deptname" : "Comp",
        "designation" : "Professor",
        "experience" : {
                "industry" : 10,
                "teaching" : 15
        },
        "salary" : {
                "basic" : 99999,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 1011998,
        "aptnature" : "original",
        "aoex" : "Cyber Security"
}
{
        "_id" : ObjectId("634e2ef48bb95faf497a02ea"),
        "name" : "Tanishq",
        "qualification" : "MTech",
        "deptno" : 3,
        "deptname" : "Fe",
        "designation" : "Professor",
        "experience" : {
                "industry" : 8,
                "teaching" : 8
```

```
        },
        "salary" : {
                "basic" : 90000,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 267266,
        "aptnature" : "adhoc",
        "aoex" : "Blockchain"
}
{
        "_id" : ObjectId("634e2f3e8bb95faf497a02eb"),
        "name" : "Rohan",
        "qualification" : "BTech",
        "deptno" : 4,
        "deptname" : "Entc",
        "designation" : "Professor",
        "experience" : {
                "industry" : 5,
                "teaching" : 5
        },
        "salary" : {
                "basic" : 85000,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 287751,
        "aptnature" : "adhoc",
        "aoex" : "AI&ML"
}
{
        "_id" : ObjectId("634e2f938bb95faf497a02ec"),
        "name" : "Tejas",
        "qualification" : "MTech",
        "deptno" : 1,
        "deptname" : "IT",
        "designation" : "A.Professor",
        "experience" : {
                "industry" : 7,
                "teaching" : 9
        },
        "salary" : {
                "basic" : 95000,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 287747,
        "aptnature" : "original",
        "aoex" : "Data Science"
}
> db.teachers.find({deptname:'Comp'}).pretty();
{
        "_id" : ObjectId("634e2e338bb95faf497a02e9"),
        "name" : "Chetan",
        "qualification" : "MaBed",
        "deptno" : 2,
```

```
        "deptname" : "Comp",
        "designation" : "Professor",
        "experience" : {
                "industry" : 10,
                "teaching" : 15
        },
        "salary" : {
                "basic" : 99999,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 1011998,
        "aptnature" : "original",
        "aoex" : "Cyber Security"
}
>   db.Student.find({$and :[{deptname:'Comp'},{deptname:'IT'},
{deptname:'Entc']}).pretty();
> db.teachers.find({$or :[{deptname:'Comp',deptname:'IT'}]}).pretty();
{
        "_id" : ObjectId("634e2da48bb95faf497a02e8"),
        "name" : "Raj",
        "qualification" : "BeBed",
        "deptno" : 1,
        "deptname" : "IT",
        "designation" : "A.Professor",
        "experience" : {
                "industry" : 1,
                "teaching" : 5
        },
        "salary" : {
                "basic" : 80000,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 13042002,
        "aptnature" : "original",
        "aoex" : "Cloud Computing"
}
{
        "_id" : ObjectId("634e2f938bb95faf497a02ec"),
        "name" : "Tejas",
        "qualification" : "MTech",
        "deptno" : 1,
        "deptname" : "IT",
        "designation" : "A.Professor",
        "experience" : {
                "industry" : 7,
                "teaching" : 9
        },
        "salary" : {
                "basic" : 95000,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 287747,
        "aptnature" : "original",
```

```
            "aoex" : "Data Science"
    }
    > db.teachers.find({$or :[{deptname:'Comp'},{deptname:'IT'}]}).pretty();
    {
            "_id" : ObjectId("634e2da48bb95faf497a02e8"),
            "name" : "Raj",
            "qualification" : "BeBed",
            "deptno" : 1,
            "deptname" : "IT",
            "designation" : "A.Professor",
            "experience" : {
                    "industry" : 1,
                    "teaching" : 5
            },
            "salary" : {
                    "basic" : 80000,
                    "ta" : 3500,
                    "da" : 5000,
                    "hra" : 8000
            },
            "doj" : 13042002,
            "aptnature" : "original",
            "aoex" : "Cloud Computing"
    }
    {
            "_id" : ObjectId("634e2e338bb95faf497a02e9"),
            "name" : "Chetan",
            "qualification" : "MaBed",
            "deptno" : 2,
            "deptname" : "Comp",
            "designation" : "Professor",
            "experience" : {
                    "industry" : 10,
                    "teaching" : 15
            },
            "salary" : {
                    "basic" : 99999,
                    "ta" : 3500,
                    "da" : 5000,
                    "hra" : 8000
            },
            "doj" : 1011998,
            "aptnature" : "original",
            "aoex" : "Cyber Security"
    }
    {
            "_id" : ObjectId("634e2f938bb95faf497a02ec"),
            "name" : "Tejas",
            "qualification" : "MTech",
            "deptno" : 1,
            "deptname" : "IT",
            "designation" : "A.Professor",
            "experience" : {
                    "industry" : 7,
                    "teaching" : 9
            },
            "salary" : {
                    "basic" : 95000,
                    "ta" : 3500,
```

```
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 287747,
        "aptnature" : "original",
        "aoex" : "Data Science"
}

db.teachers.find({$or :[{deptname:'Comp'},{deptname:'IT'},
{deptname:'Fe'}]}).pretty();
{
        "_id" : ObjectId("634e2da48bb95faf497a02e8"),
        "name" : "Raj",
        "qualification" : "BeBed",
        "deptno" : 1,
        "deptname" : "IT",
        "designation" : "A.Professor",
        "experience" : {
                "industry" : 1,
                "teaching" : 5
        },
        "salary" : {
                "basic" : 80000,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 13042002,
        "aptnature" : "original",
        "aoex" : "Cloud Computing"
}
{
        "_id" : ObjectId("634e2e338bb95faf497a02e9"),
        "name" : "Chetan",
        "qualification" : "MaBed",
        "deptno" : 2,
        "deptname" : "Comp",
        "designation" : "Professor",
        "experience" : {
                "industry" : 10,
                "teaching" : 15
        },
        "salary" : {
                "basic" : 99999,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 1011998,
        "aptnature" : "original",
        "aoex" : "Cyber Security"
}
{
        "_id" : ObjectId("634e2ef48bb95faf497a02ea"),
        "name" : "Tanishq",
        "qualification" : "MTech",
        "deptno" : 3,
        "deptname" : "Fe",
        "designation" : "Professor",
```

```
        "experience" : {
                "industry" : 8,
                "teaching" : 8
        },
        "salary" : {
                "basic" : 90000,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 267266,
        "aptnature" : "adhoc",
        "aoex" : "Blockchain"
}
{
        "_id" : ObjectId("634e2f938bb95faf497a02ec"),
        "name" : "Tejas",
        "qualification" : "MTech",
        "deptno" : 1,
        "deptname" : "IT",
        "designation" : "A.Professor",
        "experience" : {
                "industry" : 7,
                "teaching" : 9
        },
        "salary" : {
                "basic" : 95000,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 287747,
        "aptnature" : "original",
        "aoex" : "Data Science"
}

> use 31450
switched to db 31450
> db.teachers.find({$and:[{"salary.basic":{$gte:70000}},{"salary.basic":
{$lte:100000}},{deptname:"Comp"},{deptname:"IT"}]}).pretty();
> db.teachers.find({$and:[{"salary.basic":{$gte:70000}},{"salary.basic":
{$lte:100000}},{deptname:"Comp"},]}).pretty();
{
        "_id" : ObjectId("634e2e338bb95faf497a02e9"),
        "name" : "Chetan",
        "qualification" : "MaBed",
        "deptno" : 2,
        "deptname" : "Comp",
        "designation" : "Professor",
        "experience" : {
                "industry" : 10,
                "teaching" : 15
        },
        "salary" : {
                "basic" : 99999,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
```

```
        "doj" : 1011998,
        "aptnature" : "original",
        "aoex" : "Cyber Security"
}
> db.teachers.updateOne({name:"Tejas"},{$set:{"experience.teaching":10}},
{upsert:true})
{ "acknowledged" : true, "matchedCount" : 1, "modifiedCount" : 1 }
> db.teachers.find({},
{name:1,"experience.teaching":1}).sort({"experience.teaching":-1}).pretty()
{
        "_id" : ObjectId("634e2e338bb95faf497a02e9"),
        "name" : "Chetan",
        "experience" : {
                "teaching" : 15
        }
}
{
        "_id" : ObjectId("634e2f938bb95faf497a02ec"),
        "name" : "Tejas",
        "experience" : {
                "teaching" : 10
        }
}
{
        "_id" : ObjectId("634e2ef48bb95faf497a02ea"),
        "name" : "Tanishq",
        "experience" : {
                "teaching" : 8
        }
}
{
        "_id" : ObjectId("634e2da48bb95faf497a02e8"),
        "name" : "Raj",
        "experience" : {
                "teaching" : 5
        }
}
{
        "_id" : ObjectId("634e2f3e8bb95faf497a02eb"),
        "name" : "Rohan",
        "experience" : {
                "teaching" : 5
        }
}
> db.teachers.save({name: 'Anshuman' ,
qualification:'MBBS',deptno:1,deptname:'IT',designation:'A.Professor',experience:
{industry:1,teaching:5},salary:
{basic:80000,ta:3500,da:5000,hra:8000} ,doj:13042008,aptnature:'original',aoex:'Clo
ud Computing'} );
WriteResult({ "nInserted" : 1 })
> db.teachers.find().preety();
2022-10-19T14:06:30.717+0530 E  QUERY    [js] uncaught exception: TypeError:
db.teachers.find(...).preety is not a function :
@(shell):1:1
> db.teachers.find().pretty();
{
        "_id" : ObjectId("634e2da48bb95faf497a02e8"),
        "name" : "Raj",
        "qualification" : "BeBed",
```

```
        "deptno" : 1,
        "deptname" : "IT",
        "designation" : "A.Professor",
        "experience" : {
                "industry" : 1,
                "teaching" : 5
        },
        "salary" : {
                "basic" : 80000,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 13042002,
        "aptnature" : "original",
        "aoex" : "Cloud Computing"
}
{
        "_id" : ObjectId("634e2e338bb95faf497a02e9"),
        "name" : "Chetan",
        "qualification" : "MaBed",
        "deptno" : 2,
        "deptname" : "Comp",
        "designation" : "Professor",
        "experience" : {
                "industry" : 10,
                "teaching" : 15
        },
        "salary" : {
                "basic" : 99999,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 1011998,
        "aptnature" : "original",
        "aoex" : "Cyber Security"
}
{
        "_id" : ObjectId("634e2ef48bb95faf497a02ea"),
        "name" : "Tanishq",
        "qualification" : "MTech",
        "deptno" : 3,
        "deptname" : "Fe",
        "designation" : "Professor",
        "experience" : {
                "industry" : 8,
                "teaching" : 8
        },
        "salary" : {
                "basic" : 90000,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 267266,
        "aptnature" : "adhoc",
        "aoex" : "Blockchain"
}
```

```json
{
        "_id" : ObjectId("634e2f3e8bb95faf497a02eb"),
        "name" : "Rohan",
        "qualification" : "BTech",
        "deptno" : 4,
        "deptname" : "Entc",
        "designation" : "Professor",
        "experience" : {
                "industry" : 5,
                "teaching" : 5
        },
        "salary" : {
                "basic" : 85000,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 287751,
        "aptnature" : "adhoc",
        "aoex" : "AI&ML"
}
{
        "_id" : ObjectId("634e2f938bb95faf497a02ec"),
        "name" : "Tejas",
        "qualification" : "MTech",
        "deptno" : 1,
        "deptname" : "IT",
        "designation" : "A.Professor",
        "experience" : {
                "industry" : 7,
                "teaching" : 10
        },
        "salary" : {
                "basic" : 95000,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 287747,
        "aptnature" : "original",
        "aoex" : "Data Science"
}
{
        "_id" : ObjectId("634fb580505669fc7685a7bf"),
        "name" : "Anshuman",
        "qualification" : "MBBS",
        "deptno" : 1,
        "deptname" : "IT",
        "designation" : "A.Professor",
        "experience" : {
                "industry" : 1,
                "teaching" : 5
        },
        "salary" : {
                "basic" : 80000,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
```

```
            "doj" : 13042008,
            "aptnature" : "original",
            "aoex" : "Cloud Computing"
    }
    > db.teachers.remove({'aptnature':'adhoc' });
    WriteResult({ "nRemoved" : 2 })
    > db.teachers.find().pretty();
    {
            "_id" : ObjectId("634e2da48bb95faf497a02e8"),
            "name" : "Raj",
            "qualification" : "BeBed",
            "deptno" : 1,
            "deptname" : "IT",
            "designation" : "A.Professor",
            "experience" : {
                    "industry" : 1,
                    "teaching" : 5
            },
            "salary" : {
                    "basic" : 80000,
                    "ta" : 3500,
                    "da" : 5000,
                    "hra" : 8000
            },
            "doj" : 13042002,
            "aptnature" : "original",
            "aoex" : "Cloud Computing"
    }
    {
            "_id" : ObjectId("634e2e338bb95faf497a02e9"),
            "name" : "Chetan",
            "qualification" : "MaBed",
            "deptno" : 2,
            "deptname" : "Comp",
            "designation" : "Professor",
            "experience" : {
                    "industry" : 10,
                    "teaching" : 15
            },
            "salary" : {
                    "basic" : 99999,
                    "ta" : 3500,
                    "da" : 5000,
                    "hra" : 8000
            },
            "doj" : 1011998,
            "aptnature" : "original",
            "aoex" : "Cyber Security"
    }
    {
            "_id" : ObjectId("634e2f938bb95faf497a02ec"),
            "name" : "Tejas",
            "qualification" : "MTech",
            "deptno" : 1,
            "deptname" : "IT",
            "designation" : "A.Professor",
            "experience" : {
                    "industry" : 7,
                    "teaching" : 10
```

```
        },
        "salary" : {
                "basic" : 95000,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 287747,
        "aptnature" : "original",
        "aoex" : "Data Science"
}
{
        "_id" : ObjectId("634fb580505669fc7685a7bf"),
        "name" : "Anshuman",
        "qualification" : "MBBS",
        "deptno" : 1,
        "deptname" : "IT",
        "designation" : "A.Professor",
        "experience" : {
                "industry" : 1,
                "teaching" : 5
        },
        "salary" : {
                "basic" : 80000,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 13042008,
        "aptnature" : "original",
        "aoex" : "Cloud Computing"
}
> db.teachers.find({},
{name:1,"experience.teaching":1}).sort({"experience.teaching":1}).pretty();
{
        "_id" : ObjectId("634e2da48bb95faf497a02e8"),
        "name" : "Raj",
        "experience" : {
                "teaching" : 5
        }
}
{
        "_id" : ObjectId("634fb580505669fc7685a7bf"),
        "name" : "Anshuman",
        "experience" : {
                "teaching" : 5
        }
}
{
        "_id" : ObjectId("634e2f938bb95faf497a02ec"),
        "name" : "Tejas",
        "experience" : {
                "teaching" : 10
        }
}
{
        "_id" : ObjectId("634e2e338bb95faf497a02e9"),
        "name" : "Chetan",
        "experience" : {
```

```
                "teaching" : 15
        }
}
> db.teachers.find({},
{name:1,"experience.teaching":1}).sort({"experience.teaching":1}).skip( 3 ).limit(
3 ).pretty();
{
        "_id" : ObjectId("634e2e338bb95faf497a02e9"),
        "name" : "Chetan",
        "experience" : {
                "teaching" : 15
        }
}
> db.teachers.find({},
{name:1,"experience.teaching":1}).sort({"experience.teaching":1}).limit( 3 ).pretty
();
{
        "_id" : ObjectId("634e2da48bb95faf497a02e8"),
        "name" : "Raj",
        "experience" : {
                "teaching" : 5
        }
}
{
        "_id" : ObjectId("634fb580505669fc7685a7bf"),
        "name" : "Anshuman",
        "experience" : {
                "teaching" : 5
        }
}
{
        "_id" : ObjectId("634e2f938bb95faf497a02ec"),
        "name" : "Tejas",
        "experience" : {
                "teaching" : 10
        }
}
> db.teachers.save({designation:"A.Professor"},{$set:{"designation":'Professor'}},
{upsert:true})
WriteResult({ "nInserted" : 1 })
> db.teachers.find().pretty();
{
        "_id" : ObjectId("634e2da48bb95faf497a02e8"),
        "name" : "Raj",
        "qualification" : "BeBed",
        "deptno" : 1,
        "deptname" : "IT",
        "designation" : "A.Professor",
        "experience" : {
                "industry" : 1,
                "teaching" : 5
        },
        "salary" : {
                "basic" : 80000,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 13042002,
```

```
                "aptnature" : "original",
                "aoex" : "Cloud Computing"
        }
        {
                "_id" : ObjectId("634e2e338bb95faf497a02e9"),
                "name" : "Chetan",
                "qualification" : "MaBed",
                "deptno" : 2,
                "deptname" : "Comp",
                "designation" : "Professor",
                "experience" : {
                        "industry" : 10,
                        "teaching" : 15
                },
                "salary" : {
                        "basic" : 99999,
                        "ta" : 3500,
                        "da" : 5000,
                        "hra" : 8000
                },
                "doj" : 1011998,
                "aptnature" : "original",
                "aoex" : "Cyber Security"
        }
        {
                "_id" : ObjectId("634e2f938bb95faf497a02ec"),
                "name" : "Tejas",
                "qualification" : "MTech",
                "deptno" : 1,
                "deptname" : "IT",
                "designation" : "A.Professor",
                "experience" : {
                        "industry" : 7,
                        "teaching" : 10
                },
                "salary" : {
                        "basic" : 95000,
                        "ta" : 3500,
                        "da" : 5000,
                        "hra" : 8000
                },
                "doj" : 287747,
                "aptnature" : "original",
                "aoex" : "Data Science"
        }
        {
                "_id" : ObjectId("634fb580505669fc7685a7bf"),
                "name" : "Anshuman",
                "qualification" : "MBBS",
                "deptno" : 1,
                "deptname" : "IT",
                "designation" : "A.Professor",
                "experience" : {
                        "industry" : 1,
                        "teaching" : 5
                },
                "salary" : {
                        "basic" : 80000,
                        "ta" : 3500,
```

```
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 13042008,
        "aptnature" : "original",
        "aoex" : "Cloud Computing"
}
{
        "_id" : ObjectId("634fbc90505669fc7685a7c0"),
        "designation" : "A.Professor"
}
> db.teachers.update(({designation:"A.Professor"},{$set:
{"designation":'Professor'}},{upsert:true})
... ;
... ^C

> db.teachers.update({"experience.teaching":{$gte:10}},{$set:
{"designation":'Professor'}},{upsert:true})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 0 })
> db.teachers.find().pretty();
{
        "_id" : ObjectId("634e2da48bb95faf497a02e8"),
        "name" : "Raj",
        "qualification" : "BeBed",
        "deptno" : 1,
        "deptname" : "IT",
        "designation" : "A.Professor",
        "experience" : {
                "industry" : 1,
                "teaching" : 5
        },
        "salary" : {
                "basic" : 80000,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 13042002,
        "aptnature" : "original",
        "aoex" : "Cloud Computing"
}
{
        "_id" : ObjectId("634e2e338bb95faf497a02e9"),
        "name" : "Chetan",
        "qualification" : "MaBed",
        "deptno" : 2,
        "deptname" : "Comp",
        "designation" : "Professor",
        "experience" : {
                "industry" : 10,
                "teaching" : 15
        },
        "salary" : {
                "basic" : 99999,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 1011998,
```

```
        "aptnature" : "original",
        "aoex" : "Cyber Security"
}
{
        "_id" : ObjectId("634e2f938bb95faf497a02ec"),
        "name" : "Tejas",
        "qualification" : "MTech",
        "deptno" : 1,
        "deptname" : "IT",
        "designation" : "A.Professor",
        "experience" : {
                "industry" : 7,
                "teaching" : 10
        },
        "salary" : {
                "basic" : 95000,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 287747,
        "aptnature" : "original",
        "aoex" : "Data Science"
}
{
        "_id" : ObjectId("634fb580505669fc7685a7bf"),
        "name" : "Anshuman",
        "qualification" : "MBBS",
        "deptno" : 1,
        "deptname" : "IT",
        "designation" : "A.Professor",
        "experience" : {
                "industry" : 1,
                "teaching" : 5
        },
        "salary" : {
                "basic" : 80000,
                "ta" : 3500,
                "da" : 5000,
                "hra" : 8000
        },
        "doj" : 13042008,
        "aptnature" : "original",
        "aoex" : "Cloud Computing"
}
{
        "_id" : ObjectId("634fbc90505669fc7685a7c0"),
        "designation" : "A.Professor"
}
```