

MongoDB Assignment - 5

```
db.marks.insertMany([  
  {"_id": 1,  
   "name": "ak",  
   "marks": [55,62,52,81],  
  },  
  {  
    "_id": 2,  
    "name": "sk",  
    "marks": [68,88,54,51],  
  }  
])
```

\$maxN

```
db.marks.aggregate([{$project:{name:1,topMarks:{$maxN:{input:"$marks",n:1}}}}])
```

```
mycompiler_mongodb> [  
  { _id: 1, name: 'ak', topMarks: [ 81 ] },  
  { _id: 2, name: 'sk', topMarks: [ 88 ] }  
]
```

```
db.marks.aggregate([{$project:{name:1,topMarks:{$maxN:{input:"$marks",n:2}}}}])
```

```
mycompiler_mongodb> [  
  { _id: 1, name: 'ak', topMarks: [ 81, 62 ] },  
  { _id: 2, name: 'sk', topMarks: [ 88, 68 ] }  
]
```

\$minN

```
db.marks.aggregate([{$project:{name:1,lowestMarks:{$minN:{input:"$marks",n:1}}}}])
```

```
mycompiler_mongodb> [  
  { _id: 1, name: 'ak', lowestMarks: [ 52 ] },  
  { _id: 2, name: 'sk', lowestMarks: [ 51 ] }  
]
```

\$slice

db.marks.aggregate([{\$project:{name:1,selectedMarks:{\$slice:["\$marks",1]}}}]

```
mycompiler_mongodb> [
  { _id: 1, name: 'ak', selectedMarks: [ 55 ] },
  { _id: 2, name: 'sk', selectedMarks: [ 68 ] }
]
```

db.marks.aggregate([{\$project:{name:1,selectedMarks:{\$slice:["\$marks",2,1]}}}]

```
mycompiler_mongodb> [
  { _id: 1, name: 'ak', selectedMarks: [ 52 ] },
  { _id: 2, name: 'sk', selectedMarks: [ 54 ] }
]
```

db.marks.aggregate([{\$project:{name:1,selectedMarks:{\$slice:["\$marks",1,2]}}}]

```
mycompiler_mongodb> [
  { _id: 1, name: 'ak', selectedMarks: [ 62, 52 ] },
  { _id: 2, name: 'sk', selectedMarks: [ 88, 54 ] }
]
```

\$sortArray

db.marks.aggregate([{\$project:{name:1,selectedMarks:{\$sortArray:{input:"\$marks",sortBy:1}}}}}]

```
mycompiler_mongodb> [
  { _id: 1, name: 'ak', selectedMarks: [ 52, 55, 62, 81 ] },
  { _id: 2, name: 'sk', selectedMarks: [ 51, 54, 68, 88 ] }
]
```

db.marks.aggregate([{\$project:{name:1,selectedMarks:{\$sortArray:{input:"\$marks",sortBy:-1}}}}}]

```
mycompiler_mongodb> [
  { _id: 1, name: 'ak', selectedMarks: [ 81, 62, 55, 52 ] },
  { _id: 2, name: 'sk', selectedMarks: [ 88, 68, 54, 51 ] }
]
```

\$reverseArray

db.marks.aggregate([{\$project:{name:1,reverseArray:{\$reverseArray:"\$marks"}}}])

```
mycompiler_mongodb> [
  { _id: 1, name: 'ak', reverseArray: [ 81, 52, 62, 55 ] },
  { _id: 2, name: 'sk', reverseArray: [ 51, 54, 88, 68 ] }
]
```

**db.students.insertMany([
 { id:1,name:'Ryan',gender:'M',Hobbies:['game','music'],marks:[10,15,20]
},
 { id:2,name:'Joanna',gender:'F',Hobbies:['game','play'],marks:[34,54,55]}
])**

\$in

db.students.aggregate([{\$project:{name:1,check:{\$in:["music","\$Hobbies"]}}}])

```
mycompiler_mongodb> [
  {
    _id: ObjectId('683ee290ca5dc5d91a6b128c'),
    name: 'Ryan',
    check: true
  },
  {
    _id: ObjectId('683ee290ca5dc5d91a6b128d'),
    name: 'Joanna',
    check: false
  }
]
```

\$index

db.students.aggregate([{\$project:{name:1,index:{\$indexOfArray:["\$Hobbies","music"]}}}]])

```
mycompiler_mongodb> [
  { _id: ObjectId('683ee2d8dcd759f6d56b128c'), name: 'Ryan', index: 1 },
  {
    _id: ObjectId('683ee2d8dcd759f6d56b128d'),
    name: 'Joanna',
    index: -1
  }
]
```

db.students.aggregate([{\$project:{name:1,index:{\$indexOfArray:["\$Hobbies","music",0,1]}}}]])

```
mycompiler_mongodb> [
  {
    _id: ObjectId('683ee31de6fd5cee4d6b128c'),
    name: 'Ryan',
    index: -1
  },
  {
    _id: ObjectId('683ee31de6fd5cee4d6b128d'),
    name: 'Joanna',
    index: -1
  }
]
```

\$isArray

db.students.aggregate([{\$project:{name:1, isArray:{\$isArray:"\$Hobbies"}}}])

```
mycompiler_mongodb> [
  {
    _id: ObjectId('683ee35b43ad568d106b128c'),
    name: 'Ryan',
    isArray: true
  },
  {
    _id: ObjectId('683ee35b43ad568d106b128d'),
    name: 'Joanna',
    isArray: true
  }
]
```

\$map: it is used as a loop

db.students.aggregate([{\$project:{upperCaseHobbies:{\$map:{input:"\$Hobbies",as:"hobby",in:{\$toUpper:"\$\$hobby"}}}}}])

```
mycompiler_mongodb> [
  {
    _id: ObjectId('683ee393ede92fe9ca6b128c'),
    upperCaseHobbies: [ 'GAME', 'MUSIC' ]
  },
  {
    _id: ObjectId('683ee393ede92fe9ca6b128d'),
    upperCaseHobbies: [ 'GAME', 'PLAY' ]
  }
]
```

db.students.aggregate([{\$project:{name:1,updatedMarks:{\$map:{input:"\$marks",as:"mark",in:{\$add:["\$\$mark",2]}}}}}])

```
mycompiler_mongodb> [
  {
    _id: ObjectId('683ee3b8bce09968736b128c'),
    name: 'Ryan',
    updatedMarks: [ 12, 17, 22 ]
  },
  {
    _id: ObjectId('683ee3b8bce09968736b128d'),
    name: 'Joanna',
    updatedMarks: [ 36, 56, 57 ]
  }
]
```

\$Filter

db.students.aggregate([{\$project:{AboveMarks:{\$filter:{input:"\$marks",as:"marks",cond:{\$gte:["\$\$marks",50]}}}}}])

```
mycompiler_mongodb> [
  { _id: ObjectId('683ee3f043e2758e9b6b128c'), AboveMarks: [ ] },
  { _id: ObjectId('683ee3f043e2758e9b6b128d'), AboveMarks: [ 54, 55 ] }
]
```

db.students.aggregate([{\$project:{AboveMarks:{\$filter:{input:"\$marks",as:"marks",cond:{\$gte:["\$\$marks",50]},limit:1}}}}])

```
mycompiler_mongodb> [
  { _id: ObjectId('683ee4123c413eb3836b128c'), AboveMarks: [ ] },
  { _id: ObjectId('683ee4123c413eb3836b128d'), AboveMarks: [ 54 ] }
]
```

\$reduce

db.students.aggregate([{\$project:{totalMarks:{\$reduce:{input:"\$marks",initialValue:0,in:{\$add:['\$\$value',"\$\$this"]}}}}])

```
mycompiler_mongodb> [
  { _id: ObjectId('683ee44fc4af0a2aab6b128c'), totalMarks: 45 },
  { _id: ObjectId('683ee44fc4af0a2aab6b128d'), totalMarks: 143 }
]
```

db.students.aggregate([{\$project:{allHobbies:{\$reduce:{input:"\$Hobbies",initialValue:"",in:{\$concat:['\$\$value',"\$\$this"]}}}}])

```
mycompiler_mongodb> [
  {
    _id: ObjectId('683ee4702c755d1ad16b128c'),
    allHobbies: 'gamemusic'
  },
  { _id: ObjectId('683ee4702c755d1ad16b128d'), allHobbies: 'gameplay' }
]
```

```
db.students.insertMany([
  { id: 1, name: 'Ryan', gender: 'M', Subjects:['maths','science','history'],
marks:[85,77,82] },
  { id: 2, name: 'Joanna', gender: 'F' , Subjects:['maths','science','music'],
marks:[88,81,95]}
])
```

\$zip

```
db.students.aggregate([{$project:{name:1,data:{$zip:{inputs:['$Subjects','$marks']}}}}])
```

```
mycompiler_mongodb> [
  {
    _id: ObjectId('683ee4a41e1e4f76976b128c'),
    name: 'Ryan',
    data: [ [ 'maths', 85 ], [ 'science', 77 ], [ 'history', 82 ] ]
  },
  {
    _id: ObjectId('683ee4a41e1e4f76976b128d'),
    name: 'Joanna',
    data: [ [ 'maths', 88 ], [ 'science', 81 ], [ 'music', 95 ] ]
  }
]
```



```
db.students.insertMany([
  { id: 1, name: 'Ryan', gender: 'M',
    Subjects:[['maths',85],['science',77],['history',82]] },
  { id: 2, name: 'Joanna', gender: 'F' ,
    Subjects:[['maths',88],['science',81],['music',95]]}
])
```

\$arrayToObject

```
db.students.aggregate([{$project:{name:1,subjectInfo:{$arrayToObject:"$Subjects"}}}])
```

```
mycompiler_mongodb> [
  {
    _id: ObjectId('683ee4dc7c89981ff26b128c'),
    name: 'Ryan',
    subjectInfo: { maths: 85, science: 77, history: 82 }
  },
  {
    _id: ObjectId('683ee4dc7c89981ff26b128d'),
    name: 'Joanna',
    subjectInfo: { maths: 88, science: 81, music: 95 }
  }
]
```

```
db.students.insertMany([
  { id: 1, StudentInfo:{name:"ak",age:25 }},
  { id: 2, StudentInfo:{name:"sk",age:26}}
])
```

\$objectToArray

```
db.students.aggregate([{$project:{name:1,StudentInfo:{$objectToArray:"$StudentInfo"}}}])
```

```
mycompiler_mongodb> [
  {
    _id: ObjectId('683ee5282f9c2b87eb6b128c'),
    StudentInfo: [ { k: 'name', v: 'ak' }, { k: 'age', v: 25 } ]
  },
  {
    _id: ObjectId('683ee5282f9c2b87eb6b128d'),
    StudentInfo: [ { k: 'name', v: 'sk' }, { k: 'age', v: 26 } ]
  }
]
```