

CREATE COLLECTION FOR STUDENTS. STUDENTS HAVE ID, NAME, MARKS, ADDRESS, GENDER:

```
> db.students.find()
{ "_id" : ObjectId("61f3c771795c1ae89a380c71"), "id" : 1, "name" : "Purvesh", "marks" : 89, "address" : "mehsana", "gender" : "male" }
{ "_id" : ObjectId("61f3c771795c1ae89a380c72"), "id" : 2, "name" : "Marcus", "marks" : 75, "address" : "New York", "gender" : "male" }
{ "_id" : ObjectId("61f3c82e795c1ae89a380c73"), "id" : 3, "name" : "Richa", "marks" : 89, "address" : "Mumbai", "gender" : "female" }
{ "_id" : ObjectId("61f3c82e795c1ae89a380c74"), "id" : 4, "name" : "Lily", "marks" : 53, "address" : "Seattle", "gender" : "female" }
{ "_id" : ObjectId("61f3c8ba795c1ae89a380c75"), "id" : 5, "name" : "Jacob", "marks" : 57, "address" : "London", "gender" : "male" }
{ "_id" : ObjectId("61f3c8ba795c1ae89a380c76"), "id" : 6, "name" : "Lin", "marks" : 75, "address" : "Tokyo", "gender" : "male" }
{ "_id" : ObjectId("61f42d8677bf81d878cb1844"), "id" : 7, "name" : "Jane", "marks" : 95, "address" : "Mumbai", "gender" : "female" }
{ "_id" : ObjectId("61f42d8677bf81d878cb1845"), "id" : 8, "name" : "Bella", "marks" : 67, "address" : "Paris", "gender" : "female" }
{ "_id" : ObjectId("61f42d8c77bf81d878cb1846"), "id" : 9, "name" : "Leah", "marks" : 87, "address" : "New York", "gender" : "female" }
{ "_id" : ObjectId("61f42d8c77bf81d878cb1847"), "id" : 10, "name" : "Raj", "marks" : 75, "address" : "Bangalore", "gender" : "male" }
```

FIND OUT NUMBER OF STUDENTS FOR EACH MARKS:

```
> db.students.aggregate({$group:{_id:'$marks', totalStudents:{$sum:1}}})
{ "_id" : 53, "totalStudents" : 1 }
{ "_id" : 75, "totalStudents" : 3 }
{ "_id" : 57, "totalStudents" : 1 }
{ "_id" : 95, "totalStudents" : 1 }
{ "_id" : 89, "totalStudents" : 2 }
{ "_id" : 67, "totalStudents" : 1 }
{ "_id" : 87, "totalStudents" : 1 }
```

FIND OUT STUDENT COUNT FOR EACH CITY:

```
> db.students.aggregate({$group:{_id:'$address', totalStudents:{$sum:1}}})
{ "_id" : "Mumbai", "totalStudents" : 2 }
{ "_id" : "Tokyo", "totalStudents" : 1 }
{ "_id" : "Seattle", "totalStudents" : 1 }
{ "_id" : "Bangalore", "totalStudents" : 1 }
{ "_id" : "London", "totalStudents" : 1 }
{ "_id" : "New York", "totalStudents" : 2 }
{ "_id" : "mehsana", "totalStudents" : 1 }
{ "_id" : "Paris", "totalStudents" : 1 }
```

FIND OUT SUM OF ALL STUDENT MARKS

```
> db.students.aggregate({$group:{_id:null, totalMarks:{$sum:'$marks'}}})
{ "_id" : null, "totalMarks" : 762 }
```

FIND OUT THE STUDENT COUNT WHO GOT GREATER THAN 60 MARKS

```
> db.students.count({marks:{$gt:60}})
8
```

MAP REDUCE:

```
> var mapfun1 = function(){emit("marks",this.marks);}
> var reducedfun1=function(key, marks){ return Array.sum(marks)}
> db.students.mapReduce(mapfun1,reducedfun1,{out: "sumMarks"})
{ "result" : "sumMarks", "ok" : 1 }
> db.sumMarks.find()
{ "_id" : "marks", "value" : 762 }
```

INDEXING:

```
> db.students.createIndex({id:1})
{
  "numIndexesBefore" : 1,
  "numIndexesAfter" : 2,
  "createdCollectionAutomatically" : false,
  "ok" : 1
}
> db.students.getIndexes()
[
  {
    "v" : 2,
    "key" : {
      "_id" : 1
    },
    "name" : "_id_"
  },
  {
    "v" : 2,
    "key" : {
      "id" : 1
    },
    "name" : "id_1"
  }
]
```

SORT MATCH AND GROUP QUERY

```
db.students.aggregate({$match:{marks:{$gt:70}}},{ $group:{_id:'$address',totalStudents:{$sum:1}}},{ $sort: {totalStudents: -1}})
```

```
> db.students.aggregate({$match:{marks:{$gt:70}}},{ $group:{_id:'$address', totalStudents:{$sum:1}}},{ $sort:{totalStudents:-1}})
{ "_id" : "New York", "totalStudents" : 2 }
{ "_id" : "Mumbai", "totalStudents" : 2 }
{ "_id" : "mehsana", "totalStudents" : 1 }
{ "_id" : "Bangalore", "totalStudents" : 1 }
{ "_id" : "Tokyo", "totalStudents" : 1 }
```