LAB9: Student Information System Design using MongoDB PART-I

Question1. Create a new collection students.

```
> db.createCollection("students")
{ "ok" : 1 }
```

Question2. Insert the following students into your student collection.

```
> db.students.insert({_id:"arun",name:"arun
kumar",year:1992,courses:["java","php"]})
WriteResult({ "nInserted" : 1 })
> db.students.insert({_id:"sam",name:"sam
peter",year:1995,courses:["php","python","java"]})
WriteResult({ "nInserted" : 1 })
> db.students.insert({_id:"anna",name:"anna
eva",year:1997,courses:["java"]})
WriteResult({ "nInserted" : 1 })
> db.students.insert({_id:"rex",name:"rex
samuel",year:1988,courses:["python"]})
WriteResult({ "nInserted" : 1 })
> db.students.insert({_id:"olivia",name:"olivia
cathy",year:2006})
WriteResult({ "nInserted" : 1 })
```

Question3. Execute and explain the meaning of the following Queries.

db.students.find():

```
> db.students.find()
{ "_id" : "arun", "name" : "arun kumar", "year" : 1992,
"courses" : [ "java", "php" ] }
{ "_id" : "sam", "name" : "sam peter", "year" : 1995, "courses" :
[ "php", "python", "java" ] }
{ "_id" : "anna", "name" : "anna eva", "year" : 1997, "courses" :
[ "java" ] }
{ "_id" : "rex", "name" : "rex samuel", "year" : 1988, "courses" :
[ "python" ] }
{ "_id" : "olivia", "name" : "olivia cathy", "year" : 2006 }
```

db.students.find({ }):

```
> db.students.find({})
{ "_id" : "arun", "name" : "arun kumar", "year" : 1992,
"courses" : [ "java", "php" ] }
```

{ "_id" : "sam", "name" : "sam peter", "year" : 1995, "courses" :
["php", "python", "java"] }
{ "_id" : "anna", "name" : "anna eva", "year" : 1997, "courses" :
["java"] }
{ "_id" : "rex", "name" : "rex samuel", "year" : 1988, "courses" :
["python"] }
{ "_id" : "olivia", "name" : "olivia cathy", "year" : 2006 }

db.students.find({ _id: "arun" }):
> db.students.find({_id:"arun"})
{ "_id" : "arun", "name" : "arun kumar", "year" : 1992,
"courses" : ["java", "php"] }

db.students.find({ name: "arun kumar", year: 1992 }):
> db.students.find({name:"arun kumar",year:1992})
{ "_id" : "arun", "name" : "arun kumar", "year" : 1992,
"courses" : ["java", "php"] }

db.students.find({ year: { $gte: 1990, $lte: 2000 } }):
> db.students.find({year:{$gte:1990,$lte:2000}})
{ "_id" : "arun", "name" : "arun kumar", "year" : 1992,
"courses" : ["java", "php"] }
{ "_id" : "sam", "name" : "sam peter", "year" : 1995, "courses" :
["php", "python", "java"] }
{ "_id" : "anna", "name" : "anna eva", "year" : 1997, "courses" :
["java"] }

db.students.find({ courses: { $exists: true } }):
> db.students.find({courses:{$exists:true}})
{ "_id" : "arun", "name" : "arun kumar", "year" : 1992,
"courses" : ["java", "php"] }
{ "_id" : "sam", "name" : "sam peter", "year" : 1995, "courses" :
["php", "python", "java"] }
{ "_id" : "anna", "name" : "anna eva", "year" : 1997, "courses" :
["java"] }

db.students.find({ courses: " php " }):
> db.students.find({courses:"php"})
{ "_id" : "arun", "name" : "arun kumar", "year" : 1992,
"courses" : ["java", "php"] }
{ "_id" : "sam", "name" : "sam peter", "year" : 1995, "courses" :
["php", "python", "java"] }

db.students.find({ courses: { $in: ["php", "oracle"] } }):
> db.students.find({courses:{$in:["php","oracle"]}})
{ "_id" : "arun", "name" : "arun kumar", "year" : 1992,
"courses" : ["java", "php"] }

{ "_id" : "sam", "name" : "sam peter", "year" : 1995, "courses" :
["php", "python", "java"] }

db.students.find({ courses: { $all: ["php", "oracle"] } }):
> db.students.find({courses:{$all:["php","oracle"]}})
>

Question4. Execute and explain the meaning of the following queries.

db.students.find({ $or: [{ year: 1992 }, { rating: { $gte: 3 } }] }):
> db.students.find({$or:[{year:1992},{rating:{$gte:3}}]})
{ "_id" : "arun", "name" : "arun kumar", "year" : 1992,
"courses" : ["java", "php"] }

db.students.find({ rating: { $not: { $gte: 3 } } }):
> db.students.find({rating:{$not:{$gte:3}}})
{ "_id" : "arun", "name" : "arun kumar", "year" : 1992,
"courses" : ["java", "php"] }
{ "_id" : "sam", "name" : "sam peter", "year" : 1995, "courses" :
["php", "python", "java"] }
{ "_id" : "anna", "name" : "anna eva", "year" : 1997, "courses" :
["java"] }
{ "_id" : "rex", "name" : "rex samuel", "year" : 1988, "courses" :
["python"] }
{ "_id" : "olivia", "name" : "olivia cathy", "year" : 2006 }

db.students.find({ }, { name: 1, year: 1 }):
> db.students.find({},{name:1,year:1})
{ "_id" : "arun", "name" : "arun kumar", "year" : 1992 }
{ "_id" : "sam", "name" : "sam peter", "year" : 1995 }
{ "_id" : "anna", "name" : "anna eva", "year" : 1997 }
{ "_id" : "rex", "name" : "rex samuel", "year" : 1988 }
{ "_id" : "olivia", "name" : "olivia cathy", "year" : 2006 }

db.students.find({ }, { courses: 0, _id: 0 }):
> db.students.find({},{courses:0,_id:0})
{ "name" : "arun kumar", "year" : 1992 }
{ "name" : "sam peter", "year" : 1995 }
{ "name" : "anna eva", "year" : 1997 }
{ "name" : "rex samuel", "year" : 1988, "courses" :["python"] }
{ "name" : "olivia cathy", "year" : 2006 }

db.students.find({ }, { name: 1, courses: { $slice: 2 }, _id:0 }):
> db.students.find({},{name:1,courses:{$slice:2},_id:0})
{ "name" : "arun kumar", "courses" : ["java", "php"] }
{ "name" : "sam peter", "courses" : ["php", "python"] }

{ "name" : "anna eva", "courses" : ["java"] }
{ "name" : "rex samuel" }
{ "name" : "olivia cathy" }

db.students.find().sort({ year: 1, name: -1 }):

> db.students.find().sort({year:1,name:-1})
{ "_id" : "rex", "name" : "rex samuel", "year" : 1988, "courses" :
["python"] }
{ "_id" : "arun", "name" : "arun kumar", "year" : 1992,
"courses" : ["java", "php"] }
{ "_id" : "sam", "name" : "sam peter", "year" : 1995, "courses" :
["php", "python", "java"] }
{ "_id" : "anna", "name" : "anna eva", "year" : 1997, "courses" :
["java"] }
{ "_id" : "olivia", "name" : "olivia cathy", "year" : 2006 }

db.students.find().sort({ name: 1 }).skip(1).limit(2):

> db.students.find().sort({name:1}).skip(1).limit(2)
{ "_id" : "arun", "name" : "arun kumar", "year" : 1992,
"courses" : ["java", "php"] }
{ "_id" : "olivia", "name" : "olivia cathy", "year" : 2006 }

db.students.find().sort({ name: 1 }).limit(2).skip(1):

> db.students.find().sort({name:1}).limit(2).skip(1)
{ "_id" : "arun", "name" : "arun kumar", "year" : 1992,
"courses" : ["java", "php"] }
{ "_id" : "olivia", "name" : "olivia cathy", "year" : 2006 }