**BDA LAB 2**

**1) Student DB**

**i) db.students.aggregate({$group:{\_id:"$semester",Avgcgpa:{$avg:"$cgpa"}}},{$match:{dept\_name:"CSE",Avg\_cgpa:{$gt:7.5}}})**

**output: {"\_id":"VI",dept\_name:"CSE","Avg\_cgpa":8.866666666666667}**

**ii) mongoexport --host localhost --db lab3 --collection students --csv --out /home/bmsce/output.txt --fields "name","usn","semester","dept\_name","cgpa","hobbies"**

**output: 2022-04-18T14:39:14.075+0530 csv flag is deprecated; please use --type=csv instead**

**2022-04-18T14:39:14.075+0530 connected to: localhost**

**2022-04-18T14:39:14.076+0530 exported 6 records**

**> cat output.txt**

**name,usn,semester,dept\_name,cgpa,hobbies**

**Hemang,1BM19CS061,VI,CSE,8,"[""travelling"",""football""]"**

**Harshil,1BM19CS057,VI,CSE,9.8,"[""gaming"",""painting""]"**

**Hritik,1BM19CS063,VI,CSE,8.8,"[""movies"",""driving""]"**

**Ketan,1BM19CS074,VII,CSE,7,"[""diving"",""cycling""]"**

**Raman,1BM19IS420,VII,ISE,6,"[""surfing"",""swimming""]"**

**Shyam,1BM19CS010,VII,CSE,9,"[""dancing"",""sleeping""]"**

**3) Student Collection**

**i) db.student.find({},{ \_id: 0, studname: 1 }).pretty()**

**output: { "studname" : "Hemang" }**

**{ "studname" : "Harshil" }**

**{ "studname" : "Hritik" }**

**{ "studname" : "Ketan" }**

**ii) db.student.find({ \_id: 1 },{ \_id: 1, studname: 1, grade: 1 }).pretty()**

**output: { "\_id" : 1, "studname" : "Hemang", "grade" : "IX" }**

**iii) db.student.find({ grade: { $ne: "VIII" } })**

**output: { "\_id" : 1, "studname" : "Hemang", "grade" : "IX", "hobbies" : [ "traveling", "football" ], "doj" : "01-03-2018" }**

**{ "\_id" : 2, "studname" : "Harshil", "grade" : "X", "hobbies" : [ "gaming", "painting" ], "doj" : "05-03-2018" }**

**{ "\_id" : 3, "studname" : "Hritik", "grade" : "VII", "hobbies" : [ "movies", "driving" ], "doj" : "07-03-2018" }**

**iv)> db.student.find({ studname: "Ketan", hobbies: { $in: ["cycling"] }})**

**output: { "\_id" : 3, "studname" : "Ketan", "grade" : "VII", "hobbies" : [ "cycling", "diving" ], "doj" : "07-03-2018" }**

**v) > db.student.find({ studname: /j$/ })**

**output: { "\_id" : 4, "studname" : "Raman", "grade" : "VIII", "hobbies" : [ "comedy", "dancing" ], "doj" : "09-03-2018" }**

**2) Bank Collection**

**i) > db.bank.insert({ name: "Hemang", type: "current", transactions: ["+20", "+100", "+30"] })**

**WriteResult({ "nInserted" : 1 })**

**> db.bank.insert({ name: "Hritik", type: "savings", transactions: ["+90", "-90", "+200"] })**

**WriteResult({ "nInserted" : 1 })**

**> db.bank.insert({ name: "Ketan", type: "savings", transactions: ["-90", "-90", "+200"] })**

**WriteResult({ "nInserted" : 1 })**

**ii) > db.bank.update({type: "savings"}, { $pop: { transactions: 1 } })**

**WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })**

**{**

**"\_id" : ObjectId("625d30c83017e9d4fb2bfdf7"),**

**"name" : "Hritik",**

**"type" : "savings",**

**"transactions" : [**

**"+90"**

**]**

**}**

**> db.bank.update({name: "Hemang"}, { $pull: { transactions: { $in: ["+30"] } } })**

**WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })**

**> db.bank.find().pretty()**

**{**

**"\_id" : ObjectId("625d30ac3017e9d4fb2bfdf6"),**

**"name" : "Hemang",**

**"type" : "current",**

**"transactions" : [**

**"+20",**

**"+100"**

**]**

**}**

**iii) > db.bank.createIndex({ name: 1 })**

**{**

**"createdCollectionAutomatically" : false,**

**"numIndexesBefore" : 1,**

**"numIndexesAfter" : 2,**

**"ok" : 1**

**}**

**db.bank.getIndexes()**

**[**

**{**

**"v" : 2,**

**"key" : {**

**"\_id" : 1**

**},**

**"name" : "\_id\_",**

**"ns" : "lab3.bank"**

**},**

**{**

**"v" : 2,**

**"key" : {**

**"name" : 1**

**},**

**"name" : "name\_1",**

**"ns" : "lab3.bank"**

**}**

**]**

**iv) > db.bank.find().pretty()**

**{**

**"\_id" : ObjectId("625d30ac3017e9d4fb2bfdf6"),**

**"name" : "Hemang",**

**"type" : "current",**

**"transactions" : [**

**"+20",**

**"+100"**

**]**

**}**

**{**

**"\_id" : ObjectId("625d30c83017e9d4fb2bfdf7"),**

**"name" : "Hritik",**

**"type" : "savings",**

**"transactions" : [**

**"+90"**

**]**

**}**

**{**

**"\_id" : ObjectId("625d30d23017e9d4fb2bfdf8"),**

**"name" : "Ketan",**

**"type" : "savings",**

**"transactions" : [**

**"-90",**

**"-90",**

**"+200"**

**]**

**}**

**v) > db.bank.update({ name: "Hritik" }, { type:"current" })**

**WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })**

**> db.bank.find().pretty()**

**{**

**"\_id" : ObjectId("625d30ac3017e9d4fb2bfdf6"),**

**"name" : "Hemang",**

**"type" : "current",**

**"transactions" : [**

**"+20",**

**"+100"**

**]**

**}**

**{ "\_id" : ObjectId("625d30c83017e9d4fb2bfdf7"),**

**"name" : "Hritik",**

**"type" : "current"**

**"transactions" : [**

**"-90",**

**]**

**}**

**{**

**"\_id" : ObjectId("625d30d23017e9d4fb2bfdf8"),**

**"name" : "Ketan",**

**"type" : "savings",**

**"transactions" : [**

**"-90",**

**"-90",**

**"+200"**

**]**

**}**

**4) Faculty Collection**

**i, ii ) db.faculty.insert({ name: "Hemang", designation: "Professor", dept: "CSE", age: 31, salary: 700000, specialization: ["AI", "ML"] })**

**WriteResult({ "nInserted" : 1 })**

**> db.faculty.insert({ name: "Hritik", designation: "Professor", dept: "CSE", age: 40, salary: 1500000, specialization: ["AI", "CN"] })**

**WriteResult({ "nInserted" : 1 })**

**> db.faculty.insert({ name: "Ketan", designation: "Professor", dept: "MECH", age: 69, salary: 2500000, specialization: ["MG","LE"] })**

**WriteResult({ "nInserted" : 1 })**

**> db.faculty.insert({ name: "Karthik", designation: "Professor", dept: "AEROSPACE", age: 30, salary: 500000, specialization: ["AM","3DP"] })**

**WriteResult({ "nInserted" : 1 })**

**iii)**