//Part-A

//1

db.Student.updateOne({name:"John"},{$set:{age:31}})

//2

db.Student.updateMany({city:"New York"},{$set:{city:"New Jersey"}})

//3

db.Student.updateMany({age : {$gt:35}},{$set:{isActive:”false”}})

//4

db.Student.updateMany({},{$inc:{age:1}})

//5

db.Student.updateMany({name:"Eva"},{$set:{name:"Cambridge"}})

//6

db.Student.updateMany({name:'Sophia'},{$set:{isActive:”false”}})

//7

db.Student.updateMany({age:{$lt:30}},{$set:{city:'San Diego'}})

//8

db.Student.updateMany({},{$rename:{age:'years'}})

//9

db.Student.updateMany({name:'Nick'},{$set:{isActive:”true”}})

//10

db.Student.updateMany({},{$set:{country:'USA'}})

//11

db.Student.updateMany({name:'David'},{$set:{city:'Orlando'}})

//12

db.Student.updateMany({},{$mul:{years:2}})

//13

db.Student.updateMany({name:'Tom'},{$unset:{city:""}})

//14

db.Student.updateMany({years:{$gt:30}},{$set:{premiumUser:”true”}})

//15

db.Student.updateMany({name:'Jane'},{$set:{isActive:”true”}})

//16

db.Student.updateMany({name:'Lucy'},{$set:{isActive:”false”}})

//17

db.Student.deleteOne({name:'Nick'})

//18

db.Student.deleteMany({isActive:”false”})

//19

db.Student.deleteMany({city:'New York'})

//20

db.Student.deleteMany({years:{$gt:35}})

//21

db.Student.deleteMany({name:'Olivia'})

//22

db.Student.deleteMany({years:{$lt:25}})

//23

db.Student.deleteOne({isActive:”true”})

//24

db.Student.deleteMany({city:'Los Angeles'})

//25

db.Student.deleteMany({city: {$exists:” false”}})

//26

db.Student.updateMany({},{$rename:{city:'location'}})

//27

db.Student.updateMany({name:'John'},{$rename:{name:'Fullname'}})

//28

db.Student.updateMany({},{$rename:{isActive:'status'}})

//29

db.Student.updateMany({city:'San Francisco'},{$rename:{age:'yearsOld'}})

//30

db.createCollection('Employee', {

    capped: true,

    size: 5120,

    max: 100,

    validator: {

        $jsonSchema: {

            bsonType: 'object',

            required: ['Ecode', 'Ename'],

            properties: {

                Ecode: {

                    bsonType: 'int',

                    description: 'Ecode must be a int and is required'

                },

                Ename: {

                    bsonType: 'string',

                    description: 'Ename must be an string and is required'

                },

                Age: {

                    bsonType: 'int',

                    description: 'Age must be a int and is required'

                },

                City: {

                    bsonType: 'string',

                    description: 'City must be an string and is required'

                }

            }

        }

    }

})

db.Employee.insertMany([

    { Ecode: 1, Ename: 'John' },

    { Ecode: 2, Ename: 'Jane', Age: 25, City: 'Los Angeles' },

    { Ecode: 3, Ename: 'Tom', Age: 35 },

    { Ecode: 4, Ename: 'Lucy', Age: 28, City: 'San Francisco', isActive: true },

    { Ecode: 5, Ename: 'Dino', Age: 40, City: '' },

])

//Part-B

db.createCollection("Student\_data")

db.Student\_data.insertMany([{

    "ROLLNO": 101,

    "SNAME": "Vina",

    "DEPARTMENT": "CE",

    "FEES": 15000,

    "SEM": 3,

    "GENDER": "Female",

    "CITY": "Rajkot"

  },

  {

    "ROLLNO": 102,

    "SNAME": "Krisha",

    "DEPARTMENT": "EC",

    "FEES": 8000,

    "SEM": 5,

    "GENDER": "Female",

    "CITY": "Ahmedabad"

  },

  {

    "ROLLNO": 103,

    "SNAME": "Priti",

    "DEPARTMENT": "Civil",

    "FEES": 12000,

    "SEM": 7,

    "GENDER": "Female",

    "CITY": "Baroda"

  },

  {

    "ROLLNO": 104,

    "SNAME": "Mitul",

    "DEPARTMENT": "CE",

    "FEES": 15000,

    "SEM": 3,

    "GENDER": "Male",

    "CITY": "Rajkot"

  },

  {

    "ROLLNO": 105,

    "SNAME": "Keshav",

    "DEPARTMENT": "CE",

    "FEES": 15000,

    "SEM": 3,

    "GENDER": "Male",

    "CITY": "Jamnagar"

  },

  {

    "ROLLNO": 106,

    "SNAME": "Zarna",

    "DEPARTMENT": "Civil",

    "FEES": 12000,

    "SEM": 5,

    "GENDER": "Female",

    "CITY": "Ahmedabad"

  },

  {

    "ROLLNO": 107,

    "SNAME": "Nima",

    "DEPARTMENT": "EE",

    "FEES": 9000,

    "SEM": 5,

    "GENDER": "Female",

    "CITY": "Rajkot"

  },

  {

    "ROLLNO": 108,

    "SNAME": "Dhruv",

    "DEPARTMENT": "Mechanical",

    "FEES": 10000,

    "SEM": 5,

    "GENDER": "Male",

    "CITY": "Rajkot"

  },

  {

    "ROLLNO": 109,

    "SNAME": "Krish",

    "DEPARTMENT": "Mechanical",

    "FEES": 10000,

    "SEM": 7,

    "GENDER": "Male",

    "CITY": "Baroda"

  },

  {

    "ROLLNO": 110,

    "SNAME": "Zeel",

    "DEPARTMENT": "EE",

    "FEES": 9000,

    "SEM": 3,

    "GENDER": "Female",

    "CITY": "Jamnagar"

  }

])

//1

db.Student\_data.find({$and:[{GENDER:'Female'},{CITY:'Rajkot'}]})

//2

db.Student\_data.find({SEM:{$ne:3}})

//3

db.Student\_data.find({CITY:{$in:['Jamnagar','Baroda']}})

//4

db.Student\_data.find({CITY:'Baroda'}).limit(2)

//5

db.Student\_data.find({$and:[{GENDER:'Male'},{SEM:3}]})

//6

db.Student\_data.find({ROLLNO:{$lt:105}},{SNAME:1,CITY:1,FEES:1,\_id:0})

//7

db.Student\_data.updateMany({CITY:'Jamnagar',DEPARTMENT:'CE'},{$set:{CITY:'Surat'}})

//8

db.Student\_data.updateMany({GENDER:{$not:{$eq:'Female'}}},{$inc:{FEES:500}})

//9

db.Student\_data.updateMany({DEPARTMENT:'EE',SEM:3},{$set:{DEPARTMENT:'Electrical'}})

//10

db.Student\_data.updateMany({ City: 'Rajkot', Gender: 'Male' },{ $set: { Fees: newFeesAmount } })

//11

db.Student\_data.updateMany({SEM:5,FEES:{$lt:10000}},{$set:{CITY:'Vadodara'}})

//12

db.Student\_data.deleteMany({$or:[{CITY:'Ahmedabad'},{GENDER:'Male'}]})

//13

db.Student\_data.deleteMany({ROLLNO:{$nin:[101,105,110]}})

//14

db.Student\_data.deleteMany({Department:'Civil',Sem:{$in:[5,7]}})

//15

db.Student\_data.deleteMany({CITY:{$nin:['Rajkot','Baroda','Jamnagar']}})

//16

db.Student\_data.deleteMany({ROLLNO:{$gte:105,$lte:108}})

//17

db.Student\_data.updateMany({},{$rename:{CITY:'LOCATION'}})

//18

db.Student\_data.updateMany({FEES:{$lt:10000}},{$rename:{DEPARTMENT:'Branch'}})

//19

db.Student\_data.updateMany({ROLLNO:{$in:[106,107,108]}},{$rename:{SNAME:'FullName'}})

//20

db.Student\_data.updateMany({FEES:{$gt:9000}},{$rename:{FEES:'Tuiton\_Fees'}})

//21

db.Student\_data.updateMany({$and:[{FEES:{$lt:15000}},{GENDER:'Female'}]},{$rename:{DEPARTMENT:'Major'}})

//22

db.Student\_data.updateMany({SEM:3,DEPARTMENT:{$ne:'Mechanical'}},{$rename:{CITY:'HomeTown'}})

//Part-C

//1

db.createCollection("logs",{capped:true,size:10240,max:10})

//2

db.logs.insertMany([{ message: "System started", level: "info", timestamp: new Date() },

{ message: "Disk space low", level: "warning", timestamp: new Date() },

{ message: "User login", level: "info", timestamp: new Date() },

{ message: "System reboot", level: "info", timestamp: new Date() },

{ message: "Error in module", level: "error", timestamp: new Date() },

{ message: "Memory usage high", level: "warning", timestamp: new Date() },

{ message: "User logout", level: "info", timestamp: new Date() },

{ message: "File uploaded", level: "info", timestamp: new Date() },

{ message: "Network error", level: "error", timestamp: new Date() },

{ message: "Backup completed", level: "info", timestamp: new Date() },

{ message: "Database error", level: "error", timestamp: new Date() },

{ message: "Service started", level: "info", timestamp: new Date() } ])

//3

db.logs.find().sort({\_id:-1}).limit(12)

//4

db.logs.insertMany([{ message: "New log entry 1", level: "info", timestamp: new Date() },

{ message: "New log entry 2", level: "info", timestamp: new Date() },

{ message: "New log entry 3", level: "info", timestamp: new Date() },

{ message: "New log entry 4", level: "warning", timestamp: new Date() },

{ message: "New log entry 5", level: "error", timestamp: new Date() } ])