---------------------------------PART-A-------------------------------------------------

db.employee.insertMany([

{

EID: 1,

ENAME: "Nick",

GENDER: "Male",

JOININGDATE: "2013-01-01",

SALARY: 4000,

CITY: "London"

},

{

EID: 2,

ENAME: "Julian",

GENDER: "Female",

JOININGDATE: "2014-10-01",

SALARY: 3000,

CITY: "New York"

},

{

EID: 3,

ENAME: "Roy",

GENDER: "Male",

JOININGDATE: "2016-06-01",

SALARY: 3500,

CITY: "London"

},

{

EID: 4,

ENAME: "Tom",

GENDER: "Male",

JOININGDATE: null,

SALARY: 4500,

CITY: "London"

},

{

EID: 5,

ENAME: "Jerry",

GENDER: "Male",

JOININGDATE: "2013-02-01",

SALARY: 2800,

CITY: "Sydney"

},

{

EID: 6,

ENAME: "Philip",

GENDER: "Male",

JOININGDATE: "2015-01-01",

SALARY: 7000,

CITY: "New York"

},

{

EID: 7,

ENAME: "Sara",

GENDER: "Female",

JOININGDATE: "2017-08-01",

SALARY: 4800,

CITY: "Sydney"

},

{

EID: 8,

ENAME: "Emily",

GENDER: "Female",

JOININGDATE: "2015-01-01",

SALARY: 5500,

CITY: "New York"

},

{

EID: 9,

ENAME: "Michael",

GENDER: "Male",

JOININGDATE: null,

SALARY: 6500,

CITY: "London"

},

{

EID: 10,

ENAME: "John",

GENDER: "Male",

JOININGDATE: "2015-01-01",

SALARY: 8800,

CITY: "London"

}

]);

db.employee.find({ENAME:/^E/})

db.employee.find({CITY:/ney$/}

db.employee.find({ENAME:/^[A-M]/})

db.employee.find({ENAME:/^[SM]/})

db.employee.find({ENAME:/n$/})

db.employee.find({ENAME:/n/i})

db.employee.find({ENAME:/^E.{4}/})

db.employee.find({ENAME:/^S.\*a$/})

db.employee.find({ENAME:/^Phi/},{EID:1,ENAME:1,CITY:1,SALARY:1})

db.employee.find({CITY:/dne/},{ENAME:1,JOININGDATE:1,CITY:1,SALARY:1})

db.employee.find(

{ CITY: { $not: /(London|Sydney)/ } },

{ ENAME: 1, JOININGDATE: 1, CITY: 1, SALARY: 1 }

)

employee.find({CITY:{$not:/^L/}})

db.employee.find({ENAME:/[aeiou]{2}/})

db.employee.find({ENAME:/^.{3,}$/})

db.employee.find({ENAME:/^.{4}$/})

db.employee.find({ENAME:/\d/})

db.employee.find({ENAME:/^[^aeiou]\*[aeiou][^aeiou]\*$/i})

db.employee.find({ENAME:/^[A-Z].\*$/})

---------------------------------PART-B------------------------------

db.Student.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"

}

]);

db.Student.find({SNAME:{$regex:"[aeiou]"}})

db.Student.find({CITY:{$regex:"(pur|bad)$"}}

db.Student.find({SNAME:{$regex:"^[KV]"}})

db.Student.find({CITY:{$regex:"^.{5}$"}})

db.Student.find({CITY:{$regex:"^.....$"}})

db.Student.find({SNAME:{$not:{$regex:"e"}}})

db.Student.find({CITY:{$regex:"^Ra.\*ot$"}})

db.Student.find({SNAME:{$regex:"^[^aeiou]\*[aeiou][^aeiou]\*$"}})

db.Student.find({SNAME:{$regex:"^(.).\{1}$"}})

db.Student.find({DEPARTMENT:{$regex:"^[CE]"}})

db.Student.find({SNAME:{$regex:"^.{5}$"}})

db.Student.find({GENDER:"Female",CITY:{$regex:"^A"}})  
add $options:”I” for case insensitive

AGREGATE

db.Student.aggregate([{$group:{\_id:"$CITY"}}])

db.Student.aggregate([{$group:{\_id:"$CITY"}},{$project:{\_id:0,city:"$\_id"}}])

db.Student.aggregate([{$group:{\_id:"$CITY",count:{$sum:1}}}])

db.Student.aggregate([{$group:{\_id:null,count:{$sum:"$FEES"}}}])

db.Student.aggregate([{$group:{\_id:null,count:{$avg:"$FEES"}}}])

db.Student.aggregate([{$group:{\_id:null,minimum:{$min:"$FEES"},maximum:{$max:"$FEES"}}}])

db.Student.aggregate([{$group:{\_id:"$CITY",count:{$sum:"$FEES"}}}])

db.Student.aggregate([{$group:{\_id:"$GENDER",maximun:{$max:"$FEES"}}}])

db.Student.aggregate([{$match:{CITY:"Baroda"}},{$group:{\_id:"$CITY",count:{$sum:1}}}])

db.Student.aggregate([{$match:{CITY:"Rajkot"}},{$group:{\_id:"$CITY",count:{$avg:"$FEES"}}}])

db.Student.aggregate([{$group:{\_id:{DEPARTMENT:"$DEPARTMENT",GENDER:"$GENDER"},count:{$sum:1}}}])

db.Student.aggregate([

{

$group: {

\_id: "$CITY",

fees: { $avg: "$FEES" }, // Calculate average fees

count: { $sum: 1 } // Count documents per city

}

},

{

$match: { count: { $gt: 1 } } // Filter cities with more than 1 student

}

])

db.Student.aggregate([{$match:{DEPARTMENT:{$in:["CE","Mechanical"]}}},{$group:{\_id:null,count:{$sum:"$FEES"}}}])

db.Student.aggregate([{$group:{\_id:"$SEM",avgfees:{$avg:"$FEES"},count:{$sum:"$FEES"}}},{$sort:{count:-1}}])

db.Student.aggregate([{$group:{\_id:"$SEM",avgfees:{$avg:"$FEES"},count:{$sum:"$FEES"}}},{$sort:{count:-1}}])

ppart BBB

db.Stock.aggregate([{$match:{pe:{$gt:20}}}])

db.Stock.aggregate([{$project:{\_id:0,Company:"$company",profit:"$profit"}}])