Design database for Zen class programme

Collections

Topics collection

db.topics.insert([

{topic\_name:'html',topic\_id:1},

{topic\_name:'css',topic\_id:2},

{topic\_name:'javascript',topic\_id:3},

{topic\_name:'bootstarp',topic\_id:4},

{topic\_name:'react',topic\_id:5},

{topic\_name:'mysql',topic\_id:6},

{topic\_name:'mongodb',topic\_id:7},

{topic\_name:'node js',topic\_id:8} ]

Task collection

db.tasks.insert([

{task\_id:1,task\_month:"September",task\_submited\_date:ISODate("2020-09-20")},

{task\_id:2,task\_month:"October",task\_submited\_date:ISODate("2020-10-10")},

{task\_id:3,task\_month:"October",task\_submited\_date:ISODate("2020-10-15")},

{task\_id:4,task\_month:"October",task\_submited\_date:ISODate("2020-10-19")},

{task\_id:5,task\_month:"October",task\_submited\_date:ISODate("2020-10-25")},

{task\_id:6,task\_month:"October",task\_submited\_date:ISODate("2020-10-29")},

{task\_id:7,task\_month:"November",task\_submited\_date:ISODate("2020-11-22")},

{task\_id:8,task\_month:"December",task\_submited\_date:ISODate("2020-12-10")},

])

Users collect

db.users.insert([

{user\_id:1,user\_name:"dhinesh",campany\_drive\_id:7},

{user\_id:2,user\_name:"kamal" ,campany\_drive\_id:10},

{user\_id:3,user\_name:"siddhu", campany\_drive\_id:3},

{user\_id:4,user\_name:"gopinath",campany\_drive\_id:7},

{user\_id:5,user\_name:"maariya", campany\_drive\_id:10},

{user\_id:6,user\_name:"lavanya",campany\_drive\_id:7},

{user\_id:7,user\_name:"samreen",campany\_drive\_id:3},

{user\_id:8,user\_name:"samyutha",campany\_drive\_id:15}

])

Attendance collection

db.attendance.insert([

{attendence:"present",placement\_id:7},

{attendence:"present",placement\_id:10},

{attendence:"present",placement\_id:3},

{attendence:"present",placement\_id:7},

{attendence:"absent",placement\_id:10},

{attendence:"present",placement\_id:7},

{attendence:"absent",placement\_id:3},

{attendence:"present",placement\_id:15}

])

Codekata collection

db.codekata.insert([

{code\_id:1,no\_of\_problems:20},

{code\_id:2,no\_of\_problems:30},

{code\_id:3,no\_of\_problems:15},

{code\_id:4,no\_of\_problems:50},

{code\_id:5,no\_of\_problems:10},

{code\_id:6,no\_of\_problems:100},

{code\_id:7,no\_of\_problems:47},

{code\_id:8, no\_of\_problems:70}

])

company\_drives collection

db.company\_drives.insert([

{ company\_name:"IBM",company\_id:3,drive\_date:ISODate("2020-10-11")},

{ company\_name:"TCS",company\_id:7,drive\_date:ISODate("2020-10-20")},

{ company\_name:"WIPRO",company\_id:10,drive\_date:ISODate("2020-10-31")},

{ company\_name:"INFOSYS",company\_id:15,drive\_date:ISODate("2020-11-01")},

])

Mentors collection

db.mentors.insert([

{mentor\_id:1, mentor\_name:"sai mohan", mentee:22},

{mentor\_id:2, mentor\_name:"lavish", mentee:10},

{mentor\_id:3, mentor\_name:"shivaranjini", mentee:12},

{mentor\_id:4, mentor\_name:"mohan rao", mentee:19},

{mentor\_id:5, mentor\_name:"fathima", mentee:29},

{mentor\_id:6, mentor\_name:"maariyappan", mentee:25},

{mentor\_id:7, mentor\_name:"priya", mentee:9}

])

1)Find all the topics and tasks which are thought in the month of October

Answer

db.tasks.aggregate([

{

$lookup: {

from: "topics",

localField: "task\_id",

foreignField: "topic\_id",

as: "list\_of\_tasks"

}

},

{

$match: {

task\_month:"October"

}

},

{$unwind:"$list\_of\_tasks"},

{

$project: {

\_id:0,

task\_month:1,

task\_submited\_date:1,

topic\_name:"$list\_of\_tasks.topic\_name",

topic\_id:"$list\_of\_tasks.topic\_id"

}

},

])

output

{

"task\_month" : "October",

"task\_submited\_date" : ISODate("2020-10-10T05:30:00.000+05:30"),

"topic\_name" : "css",

"topic\_id" : 2

},

{

"task\_month" : "October",

"task\_submited\_date" : ISODate("2020-10-15T05:30:00.000+05:30"),

"topic\_name" : "javascript",

"topic\_id" : 3

},

{

"task\_month" : "October",

"task\_submited\_date" : ISODate("2020-10-19T05:30:00.000+05:30"),

"topic\_name" : "bootstarp",

"topic\_id" : 4

},

{

"task\_month" : "October",

"task\_submited\_date" : ISODate("2020-10-25T05:30:00.000+05:30"),

"topic\_name" : "react",

"topic\_id" : 5

},

{

"task\_month" : "October",

"task\_submited\_date" : ISODate("2020-10-29T05:30:00.000+05:30"),

"topic\_name" : "mysql",

"topic\_id" : 6

},

2)Find all the company drives which appeared between 15 oct-2020 and 31-oct-2020

answer

db.company\_drives.find({$and:[{drive\_date:{$gte:ISODate("2020-10-15")},{drive\_date:{$lte:ISODate("2020-10-31")}}]})

output

{

"\_id" : ObjectId("6256d4e3a8e32b1aa1611d52"),

"company\_name" : "TCS",

"company\_id" : 7,

"drive\_date" : ISODate("2020-10-20T05:30:00.000+05:30")

},

{

"\_id" : ObjectId("6256d4e3a8e32b1aa1611d53"),

"company\_name" : "WIPRO",

"company\_id" : 10,

"drive\_date" : ISODate("2020-10-31T05:30:00.000+05:30")

}

3) Find all the company drives and students who are appeared for the placement.

answer

db.attendance.aggregate([

{

$lookup: {

from: "users",

localField: "placement\_id",

foreignField: "campany\_drive\_id",

as: "student"

}

},

{

$match:{

attendence:"present"

}

},

{$unwind: "$student"},

{

$lookup: {

from: "company\_drives",

localField: "placement\_id",

foreignField: "company\_id",

as: "company\_details"

},

},

{$unwind: "$company\_details"},

{

$project: {

\_id:0,

attendence:1,

placement\_id:1,

student\_name:"$student.user\_name",

comapany\_name:"$company\_details.company\_name",

drive\_date:"$company\_details.drive\_date"

}

}

])

Output

{

"attendence" : "present",

"placement\_id" : 3,

"student\_name" : "siddhu",

"comapany\_name" : "IBM",

"drive\_date" : ISODate("2020-10-15T05:30:00.000+05:30")

},

{

"attendence" : "present",

"placement\_id" : 7,

"student\_name" : "dhinesh",

"comapany\_name" : "TCS",

"drive\_date" : ISODate("2020-10-20T05:30:00.000+05:30")

},

{

"attendence" : "present",

"placement\_id" : 7,

"student\_name" : "gopinath",

"comapany\_name" : "TCS",

"drive\_date" : ISODate("2020-10-20T05:30:00.000+05:30")

},

{

"attendence" : "present",

"placement\_id" : 7,

"student\_name" : "lavanya",

"comapany\_name" : "TCS",

"drive\_date" : ISODate("2020-10-20T05:30:00.000+05:30")

},

{

"attendence" : "present",

"placement\_id" : 15,

"student\_name" : "samyutha",

"comapany\_name" : "INFOSYS",

"drive\_date" : ISODate("2020-11-01T05:30:00.000+05:30")

},

{

"attendence" : "present",

"placement\_id" : 10,

"student\_name" : "maariya",

"comapany\_name" : "WIPRO",

"drive\_date" : ISODate("2020-10-31T05:30:00.000+05:30")

},

4) Find the number of problems solved by the user in codekata

Answer

db.users.aggregate([

{

$lookup: {

from: "codekata",

localField: "user\_id",

foreignField: "code\_id",

as: "solved\_codekata\_problems"

}

}

{$unwind: "$solved\_codekata\_problems"},

{

$project:{

\_id:0,

user\_name:1,

no\_of\_problems\_solved:"$solved\_codekata\_problems.no\_of\_problems"

}

},

])

Output

{

"user\_name" : "kamal",

"no\_of\_problems\_solved" : 30

},

{

"user\_name" : "siddhu",

"no\_of\_problems\_solved" : 15

},

{

"user\_name" : "gopinath",

"no\_of\_problems\_solved" : 50

},

{

"user\_name" : "maariya",

"no\_of\_problems\_solved" : 10

},

{

"user\_name" : "lavanya",

"no\_of\_problems\_solved" : 100

},

{

"user\_name" : "samreen",

"no\_of\_problems\_solved" : 47

},

{

"user\_name" : "samyutha",

"no\_of\_problems\_solved" : 70

}

5)Find all the mentors with who has the mentee's count more than 15

Answer

db.mentors.find({mentee:{$gte:15}})

output

/\* 1 createdAt:4/15/2022, 2:31:28 PM\*/

{

"\_id" : ObjectId("62593468dab70f14e145646c"),

"mentor\_id" : 1,

"mentor\_name" : "sai mohan",

"mentee" : 22

},

/\* 2 createdAt:4/15/2022, 2:31:29 PM\*/

{

"\_id" : ObjectId("62593469dab70f14e145646f"),

"mentor\_id" : 4,

"mentor\_name" : "mohan rao",

"mentee" : 19

},

/\* 3 createdAt:4/15/2022, 2:31:29 PM\*/

{

"\_id" : ObjectId("62593469dab70f14e1456470"),

"mentor\_id" : 5,

"mentor\_name" : "fathima",

"mentee" : 29

},

/\* 4 createdAt:4/15/2022, 2:31:29 PM\*/

{

"\_id" : ObjectId("62593469dab70f14e1456471"),

"mentor\_id" : 6,

"mentor\_name" : "maariyappan",

"mentee" : 25

},

6) Find the number of users who are absent and task is not submitted between 15 oct-2020 and 31-oct-2020

Answer

db.attendance.aggregate([

{

$lookup: {

from: "users",

localField: "attendence\_id",

foreignField: "user\_id",

as: "result"

}

},

{

$match: {

attendence:"absent"

}

},

{$unwind: "$result"},

{

$lookup: {

from: "tasks",

localField: "attendence\_id",

foreignField: "task\_id",

as: "task"

}

},

{$unwind: "$task"},

{

$project: {

\_id:0,

attendence\_id:1,

attendence:1,

username:"$result.user\_name",

task\_submited:"$task.task\_submited\_date"

}

},

{

$match:{

task\_submited: {$and:[{"task":{$lt:ISODate("2020-10-15")}},{"task":{$gt:ISODate("2020-10-31")}}]}

}

}

])

output

{ "attendence\_id" : 7,

"attendence" : "absent",

"username" : "samreen",

"task\_submited" : ISODate("2020-11- 22T05:30:00.000+05:30")}