**Design database for Zen class programme**

**Users**

db.users.insertOne({

"name": "John Doe",

"email": "john@example.com",

"batch": "Zen Class 2024"

});

**Codekata**

db.codekata.insertOne({

"user\_id": ObjectId("66be410c8387cd2c3a267634"),

"solved\_problems": 120

});

**Attendance**

db.attendance.insertOne({

"user\_id": ObjectId("66be41588387cd2c3a267635"),

"date": ISODate("2020-10-20"),

"status": "present" // or "absent"

});

**Topics**

db.topics.insertOne({ "topic\_name": "JavaScript Basics",

"date\_taught": ISODate("2020-10-10")

});

**Tasks**

db.tasks.insertOne({"task\_name": "JavaScript Task 1",

"due\_date": ISODate("2020-10-12"),

"submitted": true,

"user\_id": ObjectId("66be41588387cd2c3a267635")

});

**Company\_Drives**

db.company\_drive.insertOne({ "company\_name": "ABC Corp",

"drive\_date": ISODate("2020-10-20"),

"students\_appeared": [ObjectId("66be41588387cd2c3a267635")]

});

**Mentors**

db.mentors.insertOne({ "mentor\_name": "Jane Smith",

"mentees": [ObjectId("66be41588387cd2c3a267635")]

});

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

db.topics.find({

date\_taught: {

$gte: ISODate("2020-10-01"),

$lt: ISODate("2020-11-01")

}

});

Outuput:{

\_id: ObjectId('66be41be8387cd2c3a267637'),

topic\_name: 'JavaScript Basics',

date\_taught: 2020-10-10T00:00:00.000Z

}

1. Find all the company drives which appeared between 15 oct-2020 and 31-oct-2020

db.company\_drive.find({

drive\_date: {

$gte: new Date("2020-10-15"),

$lt: new Date("2020-11-01")

}

});

Output: {

\_id: ObjectId('66be478a8387cd2c3a26763a'),

company\_name: 'ABC Corp',

drive\_date: 2020-10-20T00:00:00.000Z,

students\_appeared: [

ObjectId('66be41588387cd2c3a267635')

]

}

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

db.company\_drive.aggregate([

{

$lookup: {

from: "users",

localField: "students\_appeared",

foreignField: "\_id",

as: "students\_details"

}

}

]);

Output: {

\_id: ObjectId('66be478a8387cd2c3a26763a'),

company\_name: 'ABC Corp',

drive\_date: 2020-10-20T00:00:00.000Z,

students\_appeared: [

ObjectId('66be41588387cd2c3a267635')

],

students\_details: []

}

1. Find the number of problems solved by the user in codekata

db.codekata.find(

{ user\_id: ObjectId("66be410c8387cd2c3a267634") },

{ solved\_problems: 1, \_id: 0 }

);

Output: {

solved\_problems: 120

}

1. Find all the mentors with who has the mentee's count more than 15

db.mentors.find({

$expr: { $gt: [{ $size: "$mentees" }, 15] }

});

Output:

Nothing will be displayed

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

db.attendance.aggregate([

{

$match: {

date: {

$gte: ISODate("2020-10-15"),

$lt: ISODate("2020-11-01")

},

status: "absent"

}

},

{

$lookup: {

from: "tasks",

let: { userId: "$user\_id" },

pipeline: [

{

$match: {

$expr: {

$and: [

{ $eq: ["$user\_id", "$$userId"] },

{ $eq: ["$submitted", false] },

{ $gte: ["$due\_date", ISODate("2020-10-15")] },

{ $lt: ["$due\_date", ISODate("2020-11-01")] }

]}}}],

as: "task\_not\_submitted"

}

},

{

$match: { "task\_not\_submitted": { $ne: [] } } },

{

$count: "absent\_and\_task\_not\_submitted"

}

]);