Design database for Zen class programme

users

codekata

attendance

topics

tasks

company\_drives

mentors

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

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

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

Find the number of problems solved by the user in codekata

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

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

Database:

[

{

"zenprogram": {

"users": [

{

"user\_id": 1,

"name": "Alice",

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

"role": "student"

},

{

"user\_id": 2,

"name": "Bob",

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

"role": "student"

}

],

"codekata": [

{

"codekata\_id": 1,

"title": "Basic HTML",

"description": "Introduction to HTML",

"date": "2020-10-30"

},

{

"codekata\_id": 2,

"title": "Basic CSS",

"description": "Introduction to CSS",

"date": "2020-11-10"

},

{

"codekata\_id": 3,

"title": "Basic Javascript",

"description": "Introduction to Javascript",

"date": "2020-11-10"

}

],

"attendance": [

{

"attendance\_id": 1,

"user\_id": 1,

"codekata\_id": 1,

"date": "2020-10-07",

"status": "present"

},

{

"attendance\_id": 2,

"user\_id": 2,

"codekata\_id": 1,

"date": "2020-10-14",

"status": "absent"

}

],

"topics": [

{

"topic\_id": 1,

"title": "HTML",

"description": "Fundamental of HTML programming"

},

{

"topic\_id": 2,

"title": "CSS",

"description": "different styles and their applications"

},

{

"topic\_id": 3,

"title": "Javascript",

"description": "Responsive web design"

}

],

"tasks": [

{

"task\_id": 1,

"topic\_id": 1,

"description": "Implement a basic form page"

},

{

"task\_id": 2,

"topic\_id": 2,

"description": "Implement basic form with styles"

}

],

"company\_drives": [

{

"drive\_id": 1,

"title": "Tech Company Recruitment Drive",

"date": "2020-10-20",

"description": "Recruitment drive by a tech company"

},

{

"drive\_id": 2,

"title": "Startup Recruitment Drive",

"date": "2020-10-25",

"description": "Recruitment drive by a startup"

}

],

"mentors": [

{

"mentor\_id": 1,

"name": "Mentor A",

"email": "mentorA@example.com"

},

{

"mentor\_id": 2,

"name": "Mentor B",

"email": "mentorB@example.com"

}

]

}

}

]

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

**db.zenprogram.topics.find({**

**"topic\_id": {**

**$in: db.zenprogram.tasks.distinct("topic\_id", {**

**"task\_id": { $in: db.zenprogram.codekata.distinct("codekata\_id", {**

**"date": {**

**$gte: "2020-10-01",**

**$lte: "2020-10-31"**

**}**

**})}**

**})**

**}**

**})**

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

**db.zenprogram.company\_drives.find({**

**"date": {**

**$gte: "2020-10-15",**

**$lte: "2020-10-31"**

**}**

**})**

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

**db.zenprogram.company\_drives.aggregate([**

**{**

**$lookup: {**

**from: "attendance",**

**localField: "drive\_id",**

**foreignField: "codekata\_id",**

**as: "attendance"**

**}**

**},**

**{**

**$unwind: "$attendance"**

**},**

**{**

**$lookup: {**

**from: "users",**

**localField: "attendance.user\_id",**

**foreignField: "user\_id",**

**as: "students"**

**}**

**},**

**{**

**$project: {**

**\_id: 1,**

**title: 1,**

**description: 1,**

**students: "$students"**

**}**

**}**

**])**

Find the number of problems solved by the user in code kata

**var user\_id\_to\_query = 1; // Replace with the user ID you want to query**

**db.zenprogram.codekata.aggregate([**

**{**

**$match: {**

**"codekata\_id": {**

**$in: db.zenprogram.attendance.distinct("codekata\_id", {**

**"user\_id": user\_id\_to\_query,**

**"status": "present"**

**})**

**}**

**}**

**},**

**{**

**$count: "problems\_solved"**

**}**

**])**

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

**db.zenprogram.mentors.aggregate([**

**{**

**$lookup: {**

**from: "users",**

**localField: "mentor\_id",**

**foreignField: "mentor\_id",**

**as: "mentees"**

**}**

**},**

**{**

**$project: {**

**name: 1,**

**menteesCount: { $size: "$mentees" }**

**}**

**},**

**{**

**$match: {**

**menteesCount: { $gt: 15 }**

**}**

**}**

**])**

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

**db.zenprogram.attendance.aggregate([**

**{**

**$match: {**

**"date": {**

**$gte: "2020-10-15",**

**$lte: "2020-10-31"**

**},**

**"status": "absent"**

**}**

**},**

**{**

**$lookup: {**

**from: "users",**

**localField: "user\_id",**

**foreignField: "user\_id",**

**as: "user"**

**}**

**},**

**{**

**$unwind: "$user"**

**},**

**{**

**$lookup: {**

**from: "tasks",**

**localField: "codekata\_id",**

**foreignField: "topic\_id",**

**as: "task"**

**}**

**},**

**{**

**$match: {**

**"task": { $size: 0 }**

**}**

**},**

**{**

**$group: {**

**\_id: null,**

**userCount: { $sum: 1 }**

**}**

**}**

**])**