

Introduction

This document presents the solution to a MongoDB task that involves designing a database for a program and writing queries to retrieve specific data. The task requires creating collections for users, codekata, attendance, topics, tasks, company drives, and mentors, and then writing six queries to extract relevant information from the database.

Database Design

The database consists of the following collections:

- **users:** stores information about the users, including user ID, name, email, and other relevant details
- **codekata:** stores information about the codekata problems, including problem ID, problem statement, and solution
- **attendance:** stores information about the attendance of users, including user ID, date, and attendance status
- **topics:** stores information about the topics covered in the program, including topic ID, topic name, and description
- **tasks:** stores information about the tasks assigned to users, including task ID, task name, and deadline
- **company_drives:** stores information about the company drives, including drive ID, company name, and drive date
- **mentors:** stores information about the mentors, including mentor ID, mentor name, and mentee count

Relationships:

- Users are referenced in Codekata, Attendance, Tasks, and Company_Drives.
- Tasks may be related to Topics.
- Company_Drives include participants which are Users.
- Mentors can be referenced in Users if a user has a mentor.

Queries

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

```
db.topics.find({  
  
  date: {  
  
    $gte: "2023-10-01T00:00:00Z",  
  
    $lt: "2023-11-01T00:00:00Z"  
  
  }  
  
})
```

This query uses the **\$gte** and **\$lt** operators to filter the topics and tasks created between October 1, 2020, and November 1, 2020.

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

```
db.companyDrives.find({  
  
  date: {  
  
    $gte: ("2020-10-15T00:00:00Z"),  
  
    $lte: ("2020-10-31T23:59:59Z")  
  
  }  
  
})
```

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

```
db.codekata.aggregate([  
  
  { $project: { "name": 1, "user_email": 1, "problems_solved": 1, _id: 0 } },  
  
  { $sort: { "problems_solved": -1 } }  
  
])
```

This query will return all documents in the **codekata** collection, with only the **name** , **user_email** and **problems_solved** fields.

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

```
db.companyDrives.find({}, {  
  
  _id: 0,  
  
  company_name: 1,  
  
  appeared_students: 1  
  
})
```

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

```
db.mentors.find({  
  
  mentees_count: { $gt: 15 }  
  
})
```

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

```
db.attendance.find({  
  
  date: { $gte: ("2023-10-15T00:00:00.000Z"), $lte:("2023-10-31T00:00:00.000Z") },  
  
  status: "absent"  
  
})
```

```
db.tasks.find({  
  
  status: "not Completed",  
  
  date: {  
  
    $gte: "2020-10-15T00:00:00Z",  
  
    $lte: "2020-10-31T23:59:59Z"  
  
  }  
  
})
```