

MongoDB Task

Design database for Zen class programme

users
codekata
attendance
topics
tasks
company_drives
mentors

```
db.users.insertMany([
  { user_id: 1, name: "John", role: "student" },
  { user_id: 2, name: "Alice", role: "mentor" },
  { user_id: 3, name: "Mike", role: "student" }
])
```

```
db.codekata.insertMany([
  { user_id: 1, problems_solved: 20 },
  { user_id: 3, problems_solved: 15 }
])
```

```
db.attendance.insertMany([
  { user_id: 1, date_attended: ISODate("2020-10-16") },
  { user_id: 3, date_attended: ISODate("2020-10-16") }
])
```

```
db.topics.insertMany([
  { topic_id: 1, name: "React", created_at: ISODate("2020-10-10") },
```

```
    { topic_id: 2, name: "Node.js", created_at: ISODate("2020-10-20") }  
  ])
```

```
db.tasks.insertMany([  
  { task_id: 1, topic_id: 1, deadline: ISODate("2020-10-15") },  
  { task_id: 2, topic_id: 2, deadline: ISODate("2020-10-25") }  
])
```

```
db.company_drives.insertMany([  
  { drive_id: 1, company: "Google", date: ISODate("2020-10-20") },  
  { drive_id: 2, company: "Amazon", date: ISODate("2020-10-28") }  
])
```

```
db.mentors.insertMany([  
  { mentor_id: 1, name: "Alice", mentee_count: 18 }  
])
```

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

```
db.topics.aggregate([  
  {  
    $lookup: {  
      from: "tasks",  
      localField: "topic_id",  
      foreignField: "topic_id",  
      as: "tasks"
```

```

    }
  },
  {
    $match: {
      $or: [
        { created_at: { $gte: ISODate("2020-10-01"), $lt: ISODate("2020-11-01") } },
        { "tasks.deadline": { $gte: ISODate("2020-10-01"), $lt: ISODate("2020-11-01") } }
      ]
    }
  }
]);

```

2.Find all the company drives which appeared between 15 Oct 2020 and 31 Oct 2020:

```

db.company_drives.aggregate([
  {
    $match: {
      date: { $gte: ISODate("2020-10-15"), $lte: ISODate("2020-10-31") }
    }
  }
]);

```

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

```

db.company_drives.aggregate([
  {
    $lookup: {
      from: "attendance",
      localField: "date",
      foreignField: "date_attended",
      as: "attendance_details"
    }
  },

```

```
{
  $lookup: {
    from: "users",
    localField: "attendance_details.user_id",
    foreignField: "user_id",
    as: "students"
  }
},
{
  $match: { "students.role": "student" }
}
]);
```

4. Find the number of problems solved by the user in codekata:

```
db.codekata.aggregate([
  {
    $group: {
      _id: "$user_id",
      problems_solved: { $sum: 1 }
    }
  }
]);
```

5. Find all the mentors who have more than 15 mentees:

```
db.mentors.aggregate([
  {
    $match: {
      mentee_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.users.aggregate([
```

```
{
  $lookup: {
    from: "attendance",
    localField: "user_id",
    foreignField: "user_id",
    as: "attendance"
  }
},
{
  $lookup: {
    from: "codekata",
    localField: "user_id",
    foreignField: "user_id",
    as: "codekata"
  }
},
{
  $match: {
    "attendance.date_attended": { $gte: ISODate("2020-10-15"), $lte: ISODate("2020-10-31") },
    "codekata.date_submitted": { $not: { $gte: ISODate("2020-10-15"), $lte: ISODate("2020-10-31") } }
  }
},
{
  $count: "num_users"
}
]);
```